



BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA

A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna

CIN - U74110BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, Vidyut Bhawan, Bailey Road, Patna - 800021

E-mail address - ceplanningengg@gmail.com , engg.dept@bsptcl.bihar.gov.in

Website - www.bsptcl.in

Letter No. C.E. (P&E) 184/2023(part-i) 705 / BSPTCL, Patna

Dated 21/10/23

From,

Kumar Prasant
Chief Engineer (P&E)

To,

JV of M/s ABN Tower & Transmission Pvt. Ltd.(Lead partner)
and M/s Binod Construction(JV partner)
Godrej Genesis Building, Unit No.609, Plot No.XI,
6th Floor, Block EP & GP, Sector-V, Salt Lake
Kolkata-700091

Emai:- info@abntower.com

Sub.- Adoption of vendor of M/s Vishal Transformer & Switchgear for supply of 132KV & 33KV Current Transformer along with GTP & Drawing of the same for Construction of 2x50MVA, 132/33KV GSS Bhorey (Dist.Gopalganj) including residential quarter with construction of associated 02 nos. 132KV Line bays at GSS Hathua & Construction of its associated 132KV D/C Bhorey-Hathua Tr. Line with ACSR Panther Conductor (Line length-60RKM) on turnkey basis under state plan against NIT-10/PR/BSPTCL/2023 .

Ref.- 1. NIT No.- 10/PR/BSPTCL/2023.
2. NOA No.- 13(service), dated-01.09.23 & 12(supply), dated-01.09.23
3. Your Letter no.- ABN/21-22/BSPTCL/01/RL-1167, Dated-01.12.23
4. Your mail, dated-19.12.23

Sir,

With reference to subject noted above, your request for adoption of vendor of M/s Vishal Transformer & Switchgear for supply of 132KV & 33KV Current Transformer along with GTP & Drawing of the same from NIT-24/PR/BSPTCL/2022 for Construction of 2x50MVA, 132/33KV GSS Bhorey (Dist.Gopalganj) including residential quarter with construction of associated 02 nos. 132KV Line bays at GSS Hathua & Construction of its associated 132KV D/C Bhorey-Hathua Tr. Line with ACSR Panther Conductor (Line length-60RKM) on turnkey basis under state plan against NIT-10/PR/BSPTCL/2023 is hereby considered on the risk and responsibility of **M/s ABN Tower & Transmission Pvt. Ltd.(Lead partner) JV with M/s Binod Construction(JV partner)**. Details of the above are as follows:

S.No.	Description	Make	Reference Letter
1.	Adoption of vendor for supply of 132KV & 33KV CT alongwith GTP & Drawing of 132KV CT	M/s Vishal Transformer & Switchgear	CE(P&E), Letter no.-179, dated-29.03.23
2	Adoption of GTP & Drawing of 33KV CT	M/s Vishal Transformer & Switchgea	CE(P&E), Letter no.-520, dated-07.09.23

It is to be noted that adoption of vendor in instant NIT for supply of 33KV PT along with adoption of provisionally approved GTP & Drawing of the same in NIT- 24/PR/BSPTCL/2022 has not being considered due to non submission of complete valid type test report

Please note that this approval and issue of this letter does not absolve you from any contractual responsibility in terms of quality and correctness of the material and should be strictly in accordance with the tender specifications/ISS/IEC. If at any time, any abnormality is observed, BSPTCL reserves the right to withdraw this approval with immediate effect without any pre-intimation.

Encl: As above.

Yours faithfully,

(Kumar Prasant)
Chief Engineer(P&E)

(Signature)

20	Excitation Current in mA	
	Core I	30mA at V _k at 1200/1 Amp
	Core II	30mA at V _k at 1200/1 Amp
	Core III	-
	Core IV	30mA at V _k at 1200/1 Amp
	Core V	30mA at V _k at 1200/1 Amp
21	Temperature rise at rated continuous thermal current over ambient temperature of 50°C	
	a) Winding	45 Deg. C
	b) Oil at the top	40 Deg. C
	c) Exposed current carrying parts	40 Deg. C
22	Magnetization curve of CT core	Enclosed
23	Characteristics :	
	Ratio & Phase angle error	Attached
	Magnetization curves	Attached
	Ratio correction factor curves	Attached
	Limits of composite error at rated primary saturation current (For protective CT core)	Attached
24	Variation of ratio and phase angle error due to variation in	
	a) Voltage by 1%	No variation
	b) Frequency by 1%	No variation
25	Total Creepage distance in mm	> 3625 mm
26	Current Density in primary winding	2 A/ mm sq.
27	Weight of Oil	110 ± 10 Kg.
28	Total weight	310 ± 20 Kg.
29	Mounting details	As per attached drawing
30	Overall dimension	As per attached drawing



Adopted for
NIT-10/PR/KSPCL/2023

21/12/23

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Ran. Shub
Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

* No. of terminals from secondary box of CT of control circuit are to be wired up to marshalling box plus 20% spare terminals evenly distributed in all TBS.

* The windings of CT shall be of copper only.

* Type of insulation: class-4.

* One minute power frequency dry withstand voltage (dry & wet) between line terminals & ground: 275 kV peak.

* One minute power frequency withstand voltage between secondary terminals & earth (kVrms): 5 kV

* Max. radio interference voltage for frequency between 0.5 MHz & 2 MHz at (microvolts): 500 at 92 kV rms.

* Seismic Acceleration (Horizontal): 0.3g.

DRAWING NO:- GA-0113223-448

BILL OF MATERIAL

S.No	ITEM	MATE./SPEC.	QTY
1.	DOME SHAPE COVER	M.S (HDG)	1No.
2.	OIL FILLING PORT CUM NITROGEN VALVE	M.S (HDG) BRASS	1No.
3.	MAIN TANK	M.S (THK 3mm)	1No.
4.	OIL LEVEL INDICATOR (PRISMATIC TYPE)	M.S & GLASS	1No.
5.	PRIMARY TERMINALS (PI/P)	TURNED UPPER (Outer O - Steel, Eng. Tip)	2Nos
6.	RATING & CONNECTION DIAGRAM PLATE	AL ANODISED	1No.
7.	H.T. BUSHING	BOLTYNER	1No.
8.	SECONDARY TERMINAL BOX	M.S (HDG) WITH NAILING 250x150x60mm	1No.
9.	EARTHING TERMINAL	M.S. M- 25x40	2Nos.
10.	SECONDARY TERMINALS	M.S NICKELLED BRASS	As Reqd
11.	L.T. GLAND WITH REMOVABLE GLAND PLATE	1.25" NICKELD BRASS	1No.
12.	BASE TROLLY	M.S (HDG) (TK-30x11)	1No.
13.	OIL DRAIN PLUG	M.S (HDG)	1No.
14.	LIFTING LUGS	M.S (HDG)	6Nos.
15.	SILING GUIDE	M.S (GALVZINC PLATED)	4Nos.
16.	DIAPHRAGM	9.45 mm TH BANETTE	1No.
17.	TAN DELTA TEST TERMINAL	M.S NICKELLED BRASS	1No.
18.	PRESSURE RELIEF VALVE (SPRING TYPE)	BRASS	1No.

NOTE :- 1) CREEPAGE DISTANCE OF H.T. BUSHING :- 3625 mm (MINIMUM)

APPROVED
Subject to the condition that you are not absolved of
the responsibility for correctness of the materials
supplied as per specification

Electrical RATIO: 1200-600-300-150 / 1-1-1-1-1A

Planning Research

Continuing Bridge Engineering)
Binar S. Acustomer, T.

Name: K/S Rakesh Prasad Mittal, V Vaidh, Mrs. MKB Power Construction Pvt.Ltd

NTN20190420PRBSC12022

UENOA No. - 03 & 04 dated-02-03-2022

Project Name-	B&M of 02 nos of 2201132/33 KV GSS Bodhivani Khacaul
QC No -	03 & 04 Calcu-02

03/05/2022
K&N District of Columbia
under State Health Inst NIT No. 24/PR/ESPTCL2022.

**VISHAL TRANSFORMERS &
SWITCHGEARS (P) LTD.**

RITHANI, DELHI ROAD, MEERUT U.P. (INDIA)

SCALE	BOM NO.
NTS	SEE TABLE

1. **Introduction**
 2. **Background**
 3. **Methodology**
 4. **Results**
 5. **Conclusion**
 6. **References**
 7. **Appendix**
 8. **Index**
 9. **Table of Contents**
 10. **Figure 1**
 11. **Figure 2**
 12. **Figure 3**
 13. **Figure 4**
 14. **Figure 5**
 15. **Figure 6**
 16. **Figure 7**
 17. **Figure 8**
 18. **Figure 9**
 19. **Figure 10**
 20. **Figure 11**
 21. **Figure 12**
 22. **Figure 13**
 23. **Figure 14**
 24. **Figure 15**
 25. **Figure 16**
 26. **Figure 17**
 27. **Figure 18**
 28. **Figure 19**
 29. **Figure 20**
 30. **Figure 21**
 31. **Figure 22**
 32. **Figure 23**
 33. **Figure 24**
 34. **Figure 25**
 35. **Figure 26**
 36. **Figure 27**
 37. **Figure 28**
 38. **Figure 29**
 39. **Figure 30**
 40. **Figure 31**
 41. **Figure 32**
 42. **Figure 33**
 43. **Figure 34**
 44. **Figure 35**
 45. **Figure 36**
 46. **Figure 37**
 47. **Figure 38**
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 210. **Figure 201**
 211. **Figure 202**
 212. **Figure 203**
 213. **Figure 204**
 214. **Figure 205**
 215. **Figure 206**
 216. **Figure 207**
 217. **Figure 208**

GENERAL ARRANGEMENT DRAWING OF

145KV CURRENT TRANSFORMER

DRAWING NO.:-
GA-0113223-448

SHEET NO. _____

ALL DIMENSIONS ARE IN MM.

WEIGHT:- 310±20 KG.

45kV

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DRAWING NO.- NP-0113223-448

REV.

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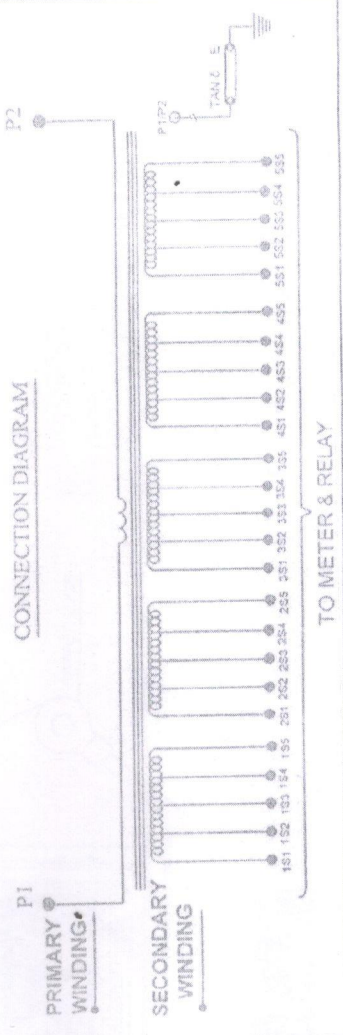
145KV CURRENT TRANSFORMER

S No.	MADE TO	IS: 2705
RATIO	1700-600-300-150 / 1-1-1-1-1A	PS / PS / MET. / PS / PS
LINE VOLT	145 KV	- / - / 20 / - / - VA
BILL	145 / 275 / 650 KV	PS / PS / 0.2S / PS / PS
S.T.C.	31.6 KA / 1 Sec	- / < 5
CLASS OF INS.	A	> 1200V at 1200/1A
FREQUENCY	50 Hz	< 12 Ω at 1200/1A
TYPE	OLD O/C LIVE TANK	< 30 mA at V _k at 1200/1A
Nos. OF CORE	FIVE	340 ± 20 Kg
YEAR OF MFG.	20.	

CAUTION
1) TAN DELTA TEST TAP SHOULD BE EARTHED BEFORE CT IS PUT INTO SERVICE.
2) SECONDARY TERMINAL MUST BE SHORT CIRCUITED WHEN NOT ENERGISED.

MFD BY: VISHAL TRANSFORMERS & SWITCHGEARS PVT. LTD.
DELHI ROAD RITHANI MEERUT (INDIA) 250103

CONNECTION DIAGRAM



TO METER & RELAY

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

BSPTCL

Adopted for
NIT-10/PR/BS
21/12/23

DRN.	NAME	SIGN.	DATE
CHK.	ARVIND		05 02 23
APPD.	GAURAV		
	M.P. S.		
	DRG. REF.		
	GA-0113223-448		

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHANI DELHI ROAD, MEERUT U.P. (INDIA)

SCALE	BOM NO.
NTS.	ALUMINIUM

TITLE
RATING & CIRCUIT DIAGRAM PLATE

DRAWING NO.- NP-0113223-448

SHEET NO.- 00

REV. NO.	DESCRIPTION	REV. BY	APPD. BY	DATE
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TOLERANCE:-
WEIGHT:-

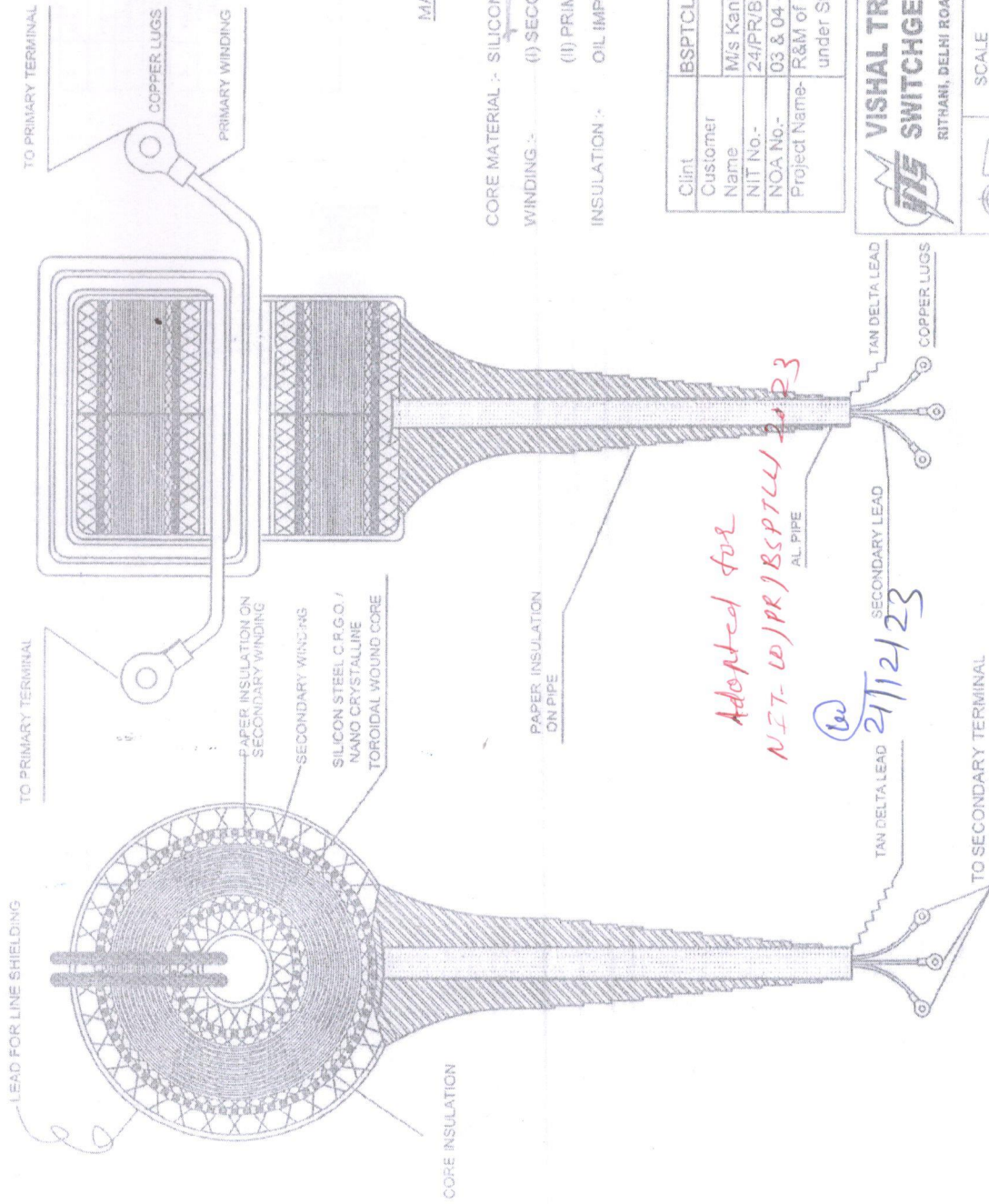
ALL DIMENSIONS ARE IN MM.

27

DRAWING NO:- SEC-0113223-448

REV.

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Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)

Bihar State Power Transmission Company Limited
MATERIAL DESIGNATION: Patna-800021

CORE MATERIAL :- SILICON STEEL C.R.G.O. / NANO CRYSTALLINE
WINDING :- (I) SECONDARY - SUPER ENAMELLED COPPER WIRE
(II) PRIMARY - FLEXIBLE COPPER CORD
INSULATION :- OIL IMPREGNATED PAPER

Client	BSPTCL
Customer Name	M/s Kantu Prasad Mittal JV With M/s. MKS Power Construction Pvt.Ltd
NIT No.-	24/PR/BSPTCL/2022
NOA No.-	03 & 04 dated-02.12.2022
Project Name-	R&M of 02 nos. of 2201132/33 KV GSS Bodhgaya ant Khagaul under State Plan against NIT No. 24/PR/BSPTCL/2022

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITRANI, DELHI ROAD, MEERUT U.P (INDIA)

SCALE



TO SECONDARY TERMINAL

CROSS SECTIONAL VIEW

REV. NO.	DESCRIPTION	REV. BY	APPD. BY	DATE
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ALL DIMENSIONS ARE IN MM.

TOLERANCE:-

WEIGHT:-

TITLE
SECTIONAL VIEW OF 145KV CT

DRAWING NO:- SEC-0113223-448

SHEET NO:-

REV.

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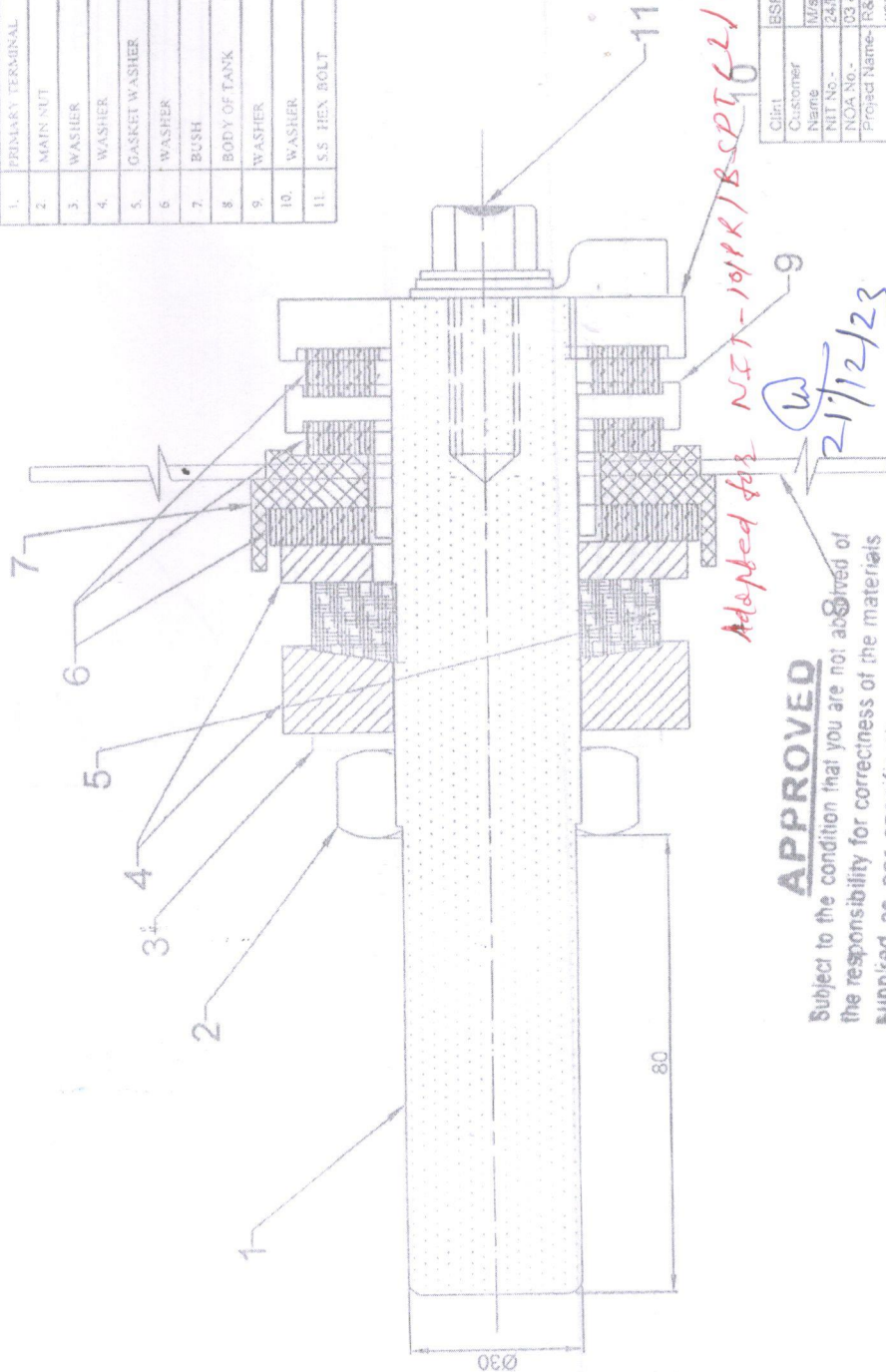
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REV.

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BILL OF MATERIAL

S.No	ITEM	MATE./SPEC.	QTY
1.	PRIMARY TERMINAL	TINNED COPPER (Ø30mm x 80mm Length)	1 No
2.	MAIN NUT	BRASS TH-15mm	1 No
3.	WASHER	BRASS TH-20mm	1 No
4.	WASHER	FRP/PORCELAIN	2 No
5.	GASKET WASHER	NITRILE BUTYL ADHERISED CORK	1 No
6.	WASHER	CORK	1 No
7.	BUSH	M.S.	1 No
8.	BODY OF TANK	M.S. (HAF)	1 No
9.	WASHER	NYLON	1 No
10.	WASHER	TINNED BRASS (COLLAR)	1 No
11.	S.S HEX BOLT	M-12X30	1 No



APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vijay Bhawan, Patna-800021

21/12/23

BSPTCL

Client	BSPTCL
Customer Name	M/s Kanti Prasad Mittal JV With M/s MKB Power Construction Pvt Ltd
NIT No.	24/PR/BSPTCL/2022
NOA No.	03 & 04 dated-02.12.2022
Project Name	RAM of 02 nos. of 200113223 KV GSS Boudhaya ant Kinegaull under State Plan against NIT No. 24/PR/BSPTCL/2022

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITNANI, DELHI ROAD, MEERUT U.P. (INDIA)



SCALE
N.T.S.

BOM NO.
SEE TABLE

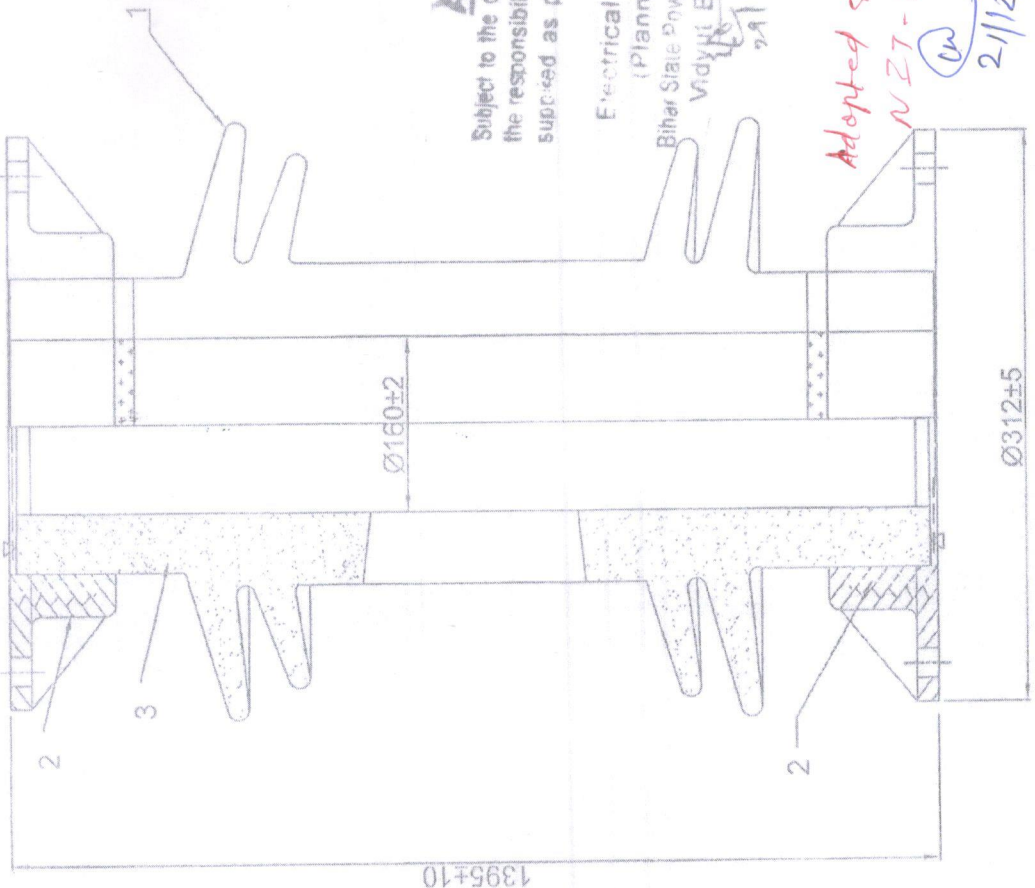
TITLE

EMERGENCE OF PRIMARY TERMINAL
FOR 145KV.C.T.

DRN	NAME	SIGN	DATE
CHK	ARVIND		09.02.23
APPD	GAURAV		
	M.P. S.		
	DRG. REF.		
	GA-0113223-448		

DRAWING NO.:-	REV
PRI-TER-030	
SHEET NO.:-	00

ALL DIMENSIONS ARE IN MM.



BILL OF MATERIAL

S.No	ITEM	MATE. / SPEC.	QTY.
1.	INSULATOR	HTV SILICON RUBBER	1No
2.	METALLIC FLANGE CEMENTED WITH PORCELAIN FOR BOTTOM & TOP	SGI / AL	2Nos
3.	TUBE	FIBRE GLASS TUBE WITH FILAMENT WINDING PROCESS	1No

NOTE :- (1) TEST ACCORDING TO IEC 61462
(2) MINIMUM CREEPAGE DISTANCE - 3625 mm.

NOTE:- DIMENSION MAY BE VARY ACCORDING TO AVAILABILITY OF BUSHING.

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021 BSPTCL

Customer Name	M/s Kanti Prasad Mittal JV With M/s. MKB Power Construction Pvt.Ltd
CU No.-	24/PR/BSPTCL/2022
NOA No.-	03 & 04 dated-02.12.2022
Project Name-	R&M of 02 nos. of 2201132/33 KV GSS Bodhgaya ant. Khagaul under State Plan against NIT No. 24/PR/BSPTCL/2022

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHANI, DELHI ROAD, MEERUT U.P (INDIA)

DRN.	ARVIND	NAME	SIGN	DATE
CHK.	GAURAV			06.02.23
APPD.	M.P. S.			

SCALE N.T.S. BOM NO. SEE TABLE

TITLE DETAIL OF COMPOSITE BUSHING FOR 145 KV CT		DRAWING NO:- INS-04		REV.
		SHEET NO:-		00

REV NO.	DESCRIPTION	REV BY	APPD. BY	DATE
00				
TOLERANCE:- ±5%		WEIGHT:-		

ALL DIMENSIONS ARE IN MM.

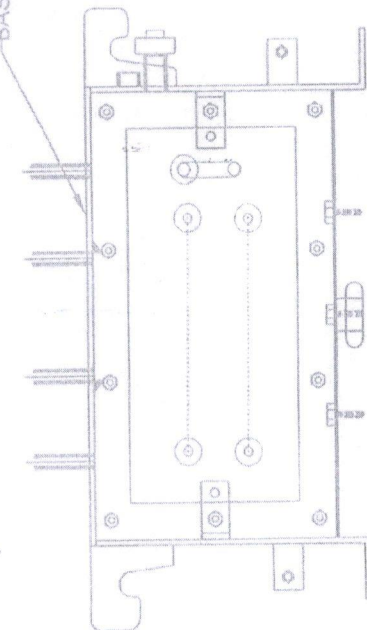
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DRAWING NO.-S.BOX-001

REV.

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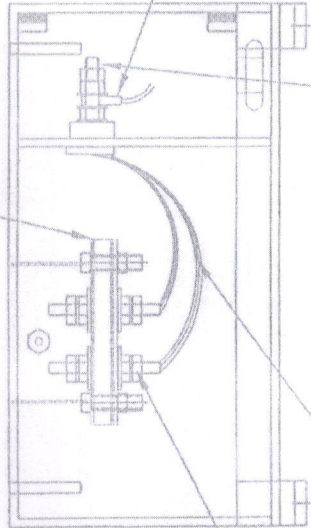
BASE TANK



FRONT VIEW

SECONDARY TERMINAL BLOCK
WITH BRASS STUDS, WASHERS & NUTS

EPOXY TERMINAL PLATE



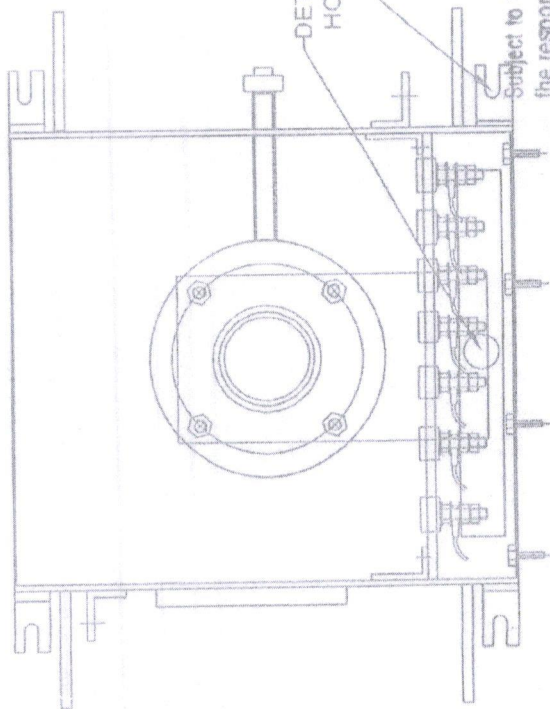
SIDE VIEW

OUTER BRASS TERMINALS
WITH NUTS & WASHERS FOR
CUSTOMER USE

Adopted for NIT - 10/PR/BSPTCL/2023

In 21/12/23

DETACHABLE GLAND PLATE WITH
HOLE FOR CABLE ENTRY



BOTTOM VIEW

APPROVED

Subject to the condition that you are not absolved
the responsibility for correctness of the materials
supplied as per specification

for. Jander
Electrical Superintending Engineer
(Planning and Engineering)

DESCRIPTION: (REVISED) S.A.P.D. & P.D. Limited
W. J. Bhawan, Patna-200021

ALL DIMENSIONS ARE IN MM.

TOLERANCE:-

2.4

WEIGHT:-

2.4

Client BSPTCL

Customer Name

M/s Kanti Prasad Mittal JV With M/s. MKB Power Construction Pvt.Ltd

NIT No -

24/PR/BSPTCL/2022

NOA No -

03 & 04 dated-02.12.2022

Project Name-

R&M of 02 nos. of 2201132/33 KV GSS Bochgaya ant Khagaul

under State Plan against NIT No. 24/PR/BSPTCL/2022

VISHAL TRANSFORMERS &
SWITCHGEARS (P) LTD.

RITHANI, DELHI ROAD, MEERUT U.P (INDIA)



SCALE

N.T.S.

BOM NO.

NAME

ARVIND

DATE

08.02.23

CHK.

GAURAV

APPD.

M.P. S.

DRG. REF.

GA-013323-448

TITLE

DETAIL OF SECONDARY TERMINAL BOX

WITH TERMINAL ASSEMBLY FOR 145KV LT CT

DRAWING NO.:-

S.BOX-001

REV.

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SHEET NO.-

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REV. NO.

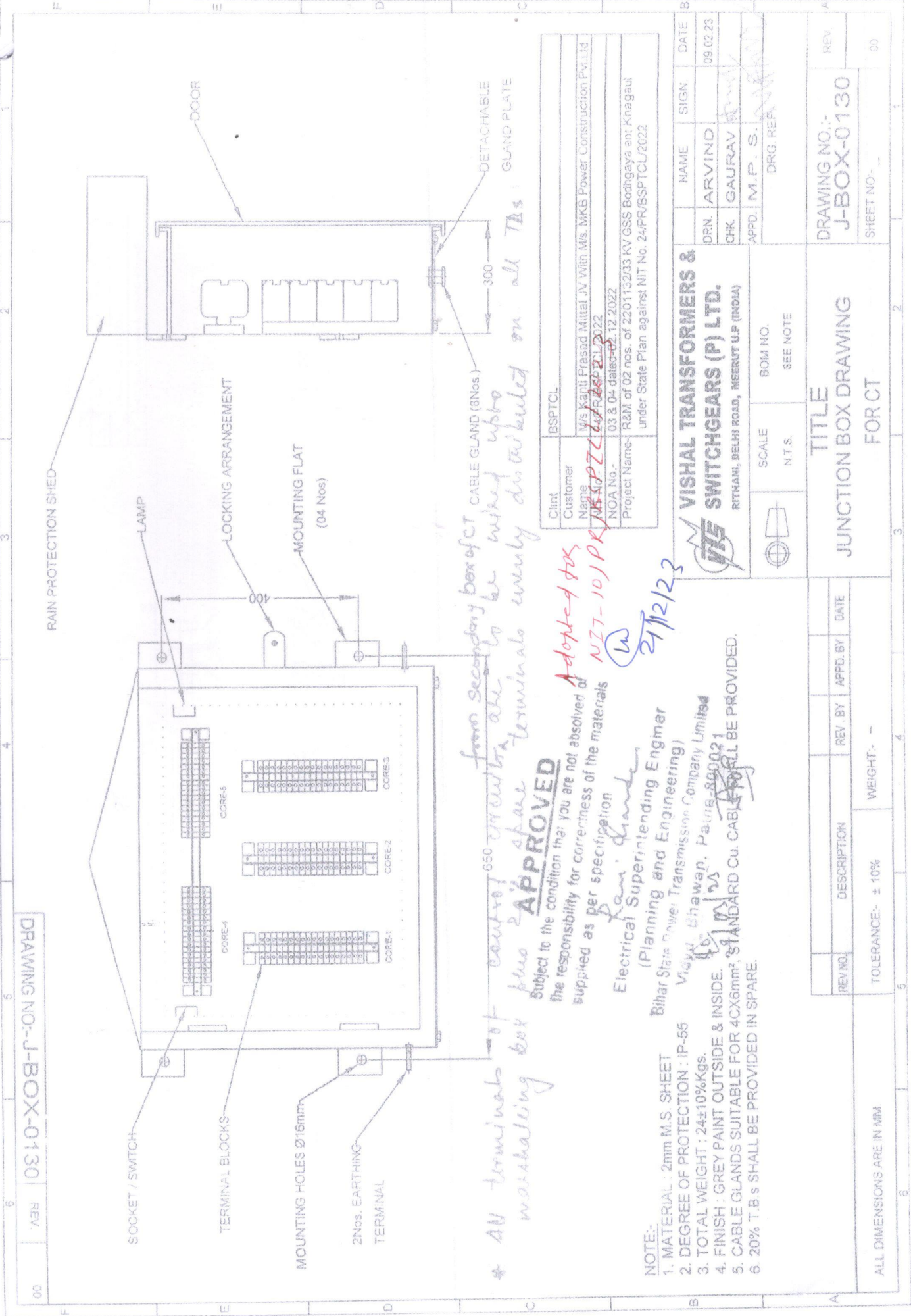
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DESCRIPTION

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DRAWING NO:- J-BOX-0130

REV. 00

* All terminals of control circuit are to be wired upto marshalling box from secondary box of CT terminals evenly distributed on all T.B.s

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

NOTE:-
1. MATERIAL : 2mm M.S. SHEET
2. DEGREE OF PROTECTION : IP-55
3. TOTAL WEIGHT : 24±10%Kgs.
4. FINISH : GREY PAINT OUTSIDE & INSIDE.
5. CABLE GLANDS SUITABLE FOR 4CX6mm² STANDARD CU. CABLE SHALL BE PROVIDED.
6. 20% T.B.s SHALL BE PROVIDED IN SPARE.

Client	BSPTCL
Customer	M/s Kanti Prasad Mittal JV With M/s. MKB Power Construction Pvt Ltd
Name	BSPTCL
NOA No.-	03 & 04 dated 02.12.2022
Project Name-	R&M of 02 nos. of 220113233 KV GSS Bodhgaya ant Knegaui under State Plan against NIT No. 24/PR/BSPTCL/2022

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHANI, DELHI ROAD, NEERUT U.P (INDIA)

DRN.	ARVIND	NAME	SIGN	DATE
CHK.	GAURAV			09.02.23
APPD.	M.P. S.			
		DRG REF.		

SCALE N.T.S. BOM NO. SEE NOTE

TITLE
JUNCTION BOX DRAWING
FOR CT

DRAWING NO:- J-BOX-0130
REV. 00
SHEET NO:-

REV. NO.	DESCRIPTION	REV. BY	APPD. BY	DATE

ALL DIMENSIONS ARE IN MM

TOLERANCE:- ± 10%

WEIGHT:-

22

DRAWING NO. M-06

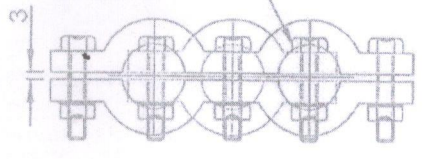
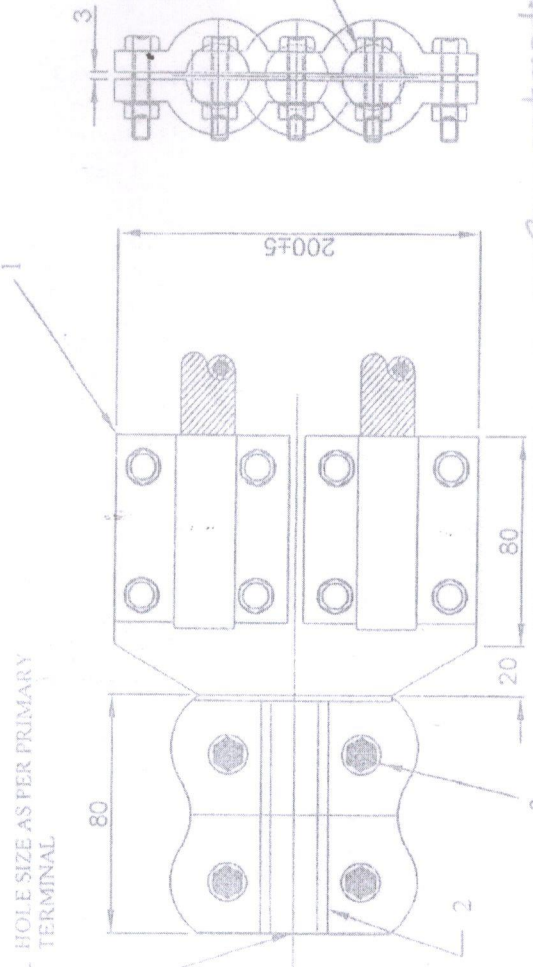
REV. 00

BILL OF MATERIAL

S.No.	ITEM	MATE./SPEC.	QTY.
1.	MAIN BODY OF CONNECTOR	AL ALLOY (TH 12mm MIN)	1 No.
2.	BI-METALLIC SLEEVE	AL / Cu (2mm TH)	1 No.
3.	NUT BOLT PLAIN & SPRING WASHER	M.S (ZINC PLATED) 100	12 NOS

☒	MOOSE	Ø31.77	ACSR
☒	TARANTULLA	Ø36.61	ACSR
☒	C.B CONDUCTOR	DIM.	TYPE

*



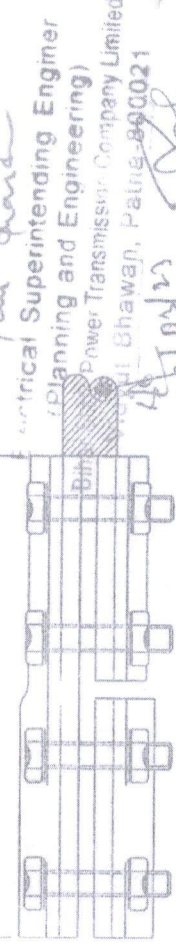
Current rating shall be 1600 A (approx)

Adopted for NET-10/PL/ACPTCL/2023

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

180±5



Central Superintending Engineer
Planning and Engineering
Power Transmission Company Limited
Bhilai Bhawan, Patna-800021

27/04/23

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHANI, DELHI ROAD, MEERUT U.P (INDIA)

CONDUCTOR

REV.NO.	DESCRIPTION	REV. BY	APPD. BY	DATE
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ALL DIMENSIONS ARE IN MM.

TOLERANCE:- As Per Dwg.

WEIGHT:-

TITLE
BI-METALLIC TERMINAL CONNECTOR
FOR 145 KV CT

SCALE
N.T.S.

BOM NO.

SEE TABLE

NAME	SIGN.	DATE
DRN. ARVIND		09.02.23
CHK. GAURAV		
APPD. M.P. S.		

DRAWING NO. M-06

SHEET NO. 00

SCHEDULE OF THE GUARANTEED TECHNICAL PARTICULAR FOR THE 33KV CURRENT TRANSFORMER

Set - I
19

S.N.	Description	33KV CT Ratio: 1200-600-300-150/1-1-1-1 A
1.	Name of Manufacturer	Vishal Transformer & Switchgears Pvt. Ltd.
2.	Type designation	Outdoor type, Oilcooled Live Tank Design Hermetically Sealed
3.	Governing standard	IEC: 61869/IS: 16227
4.	Nominal system voltage	33Kv
5.	Highest system voltage	36kV
6.	Rated Primary Current	1200-600-300-150A
7.	Rated secondary current	1A
8.	One minute Power frequency withstand voltage KV (RMS)	70KV
9.	Rated continuous thermal current	120% & 150% of rated primary current
10.	Short time thermal rating of Primary for one second.	25 KA for 3 second(rms)
11.	Rated dynamic current of primary	62.5KA (Peak)
12.	Rated secondary current in Amps	1 Amps
13.	No. of cores in secondary	Five
14.	Ratio	1200-600-300-150/1-1-1-1 Amps
15.	Accuracy class:	
	Core I	PX
	Core II	PX
	Core III	0.2S
	Core IV	PX
	Core V	PX
17.	Purpose of core:	
	Core I	OC & EF
	Core II	TRANS DISC
	Core III	DISC PROTN
	Core IV	Metering
	Core IV	Protection
	Core IV	Protection
18.	Rated burden	
	Core III	20 VA
19.	Minimum Knee point voltage in volts (Vk):	
	Core I	1200 Volts at 1200/1 Amp
	Core II	1200 Volts at 1200/1 Amp
	Core IV	1200 Volts at 1200/1 Amp
	Core V	1200 Volts at 1200/1 Amp
20.	Secondary winding resistance at 75°C	
	Core I	< 16Ω at 1200/1 A
	Core II	< 16Ω at 1200/1 A
	Core IV	< 16Ω at 1200/1 A
	Core V	< 16Ω at 1200/1 A
21.	Exciting current in mA	
	Core I	<30 mA at Vk at 1200/1 Amp
	Core II	<30 mA at Vk at 1200/1 Amp
	Core IV	<30 mA at Vk at 1200/1 Amp
	Core V	<30 mA at Vk at 1200/1 Amp
22.	Temperature rise at rated continuous thermal current over ambient temperature of 50° C	
	a) Winding	45 °C
	b) Oil at the top	40 °C
	c) Exposed current carrying parts	40 °C
23.	Magnetization curve of CT core	Enclosed
24.	Characteristics:	
	a) Ratio & Phase angle error	Enclosed
	b) Magnetization curves	Enclosed

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per the following:-
Electrical Engineering
Planning and Engineering
Bihar State Power Transmission Company
Vijay Bhawan, Patna-800 001

Adopted for NIT-10/PR/KSPCL/08
21/12/23

18

	e) Ratio correction factor curves	Enclosed
	d) Limits of composite error at rated Primary saturation current (For Protective CT Core)	5%
25.	Variation of ratio and phase angle error due to variation in	
	a) Voltage by 1%	No Variation
	b) Frequency by 1%	No Variation
26.	Total Creepage distance in mm	> 900 mm
27.	Current density in primary winding	2 A/mm ²
28.	Weight of oil	40 ± 10 Kg.
29.	Total weight	170 ± 20 Kg.
30.	Mounting details	As per enclosed drawing
31.	Overall dimension	As per enclosed drawing

As corrected
APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

[Signature]
Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800001

- * No. of terminals: All terminals of control circuits are to be wired from secondary box of CT upto marshalling box plus 20% spare terminals evenly distributed on all TBs.
- * Type of insulation: Class A
- * One minute power frequency withstand voltage b/w secondary terminals & earth: 5kVrms
- * Seismic Acceleration: 0.3 g (Horizontal).

Adopted for NIT-10/PE/BSPTCL/2023

W
21/12/23

BILL OF MATERIAL

S.NO	ITEM	MATE./SPEC.	QTY
1	DOVE SHAPE TOP COVER	M.S.	1NO.
2	OIL FILLING PORT	BRASS	1NO.
3	PRESSURE RELIEF VALVE (SPRING TYPE)	BRASS	1NO.
4	MAIN TANK WITH COVER	M.S./S.S.	1NO.
5	OIL LEVEL INDICATOR (PRISMATIC TYPE)	ALUMINIUM & GLASS	1NO.
6	PRIMARY TERMINAL	TINNED COPPER	2NOS.
7	RATING & CONNECTION DIAGRAM PLATE	AL. ANODISED	1NO.
8	H.T. BUSHING	PORCELAIN WARE - EC / CI / GENESEY APPROVED / REPUTED	1NO.
9	BASE TANK	M.S.	1NO.
10	EARTHING TERMINAL (WITH BOLT SIZE)	M.S., M-12x40	2NOS.
11	SECONDARY TERMINALS	M-6 NICKLED BRASS	AS Requ
12	L.T. GLAND WITH REMOVABLE PLATE	M.S.	1NO.
13	LIFTING LUGS	M.S.	2NOS.
14	MOUNTING HOLE Ø15	M.S.	4NOS.
15	SECONDARY WINDING	COPPER	
16	INSULATION	OIL IMPREGNATED PAPER	
17	PRIMARY CORD	COPPER	

NOTE :-
 1) CREEPAGE DISTANCE OF BUSHING : 900mm (MIN.)
 2) ALL FERROUS PARTS INCLUDING TANK SHALL BE HOT DIP GALVANIZED.

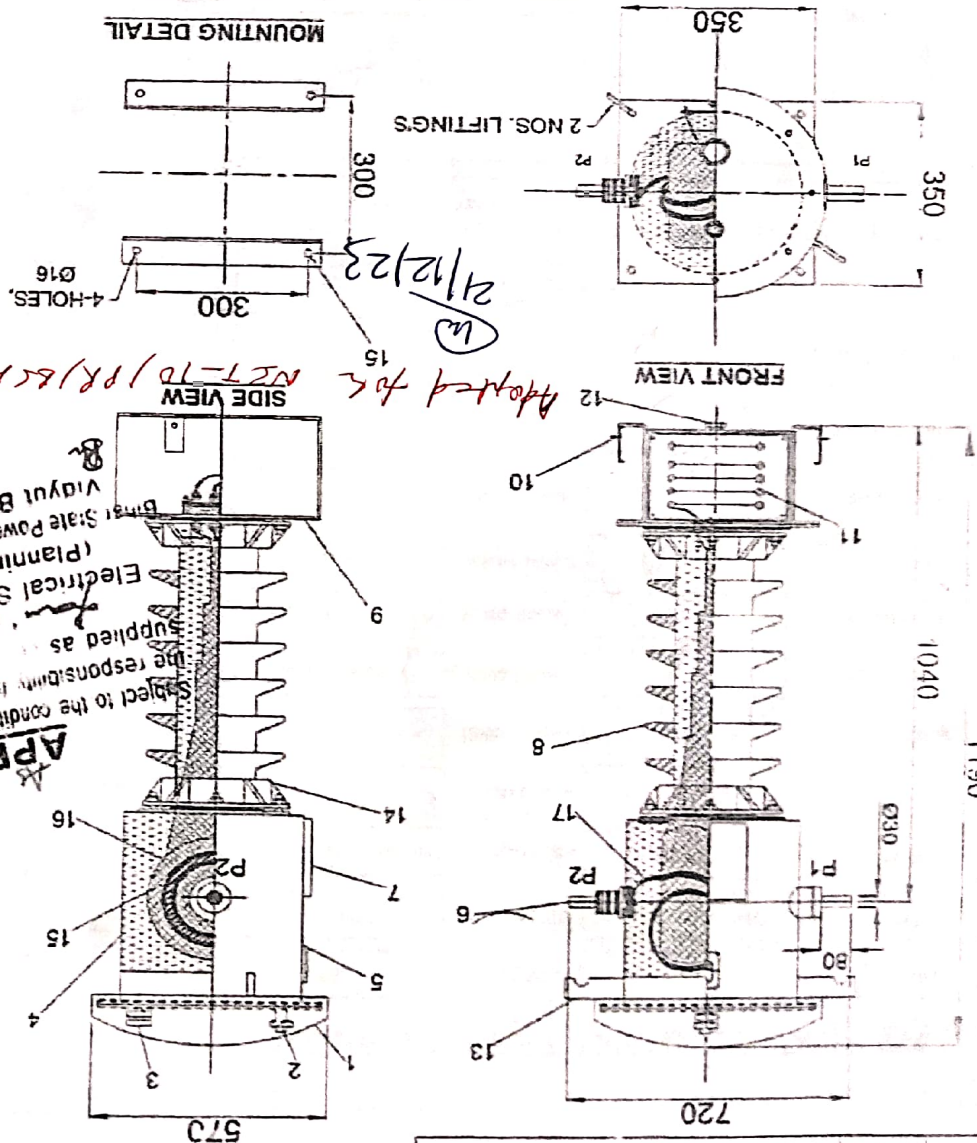
RATIO : 1200-600-300-150/1-1-1-1A

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.		RATHAKI, DELHI ROAD, REERUT UP (INDIA)	
DRN. ANUJ	CHK. ARVIND	APPD. M.P.S.	SCALE N.T.S
DATE 10.06.23	SIGN.	NAME	SEE TABLE

TITLE
 GENERAL ARRANGEMENT DRAWING
 FOR 36KV O/D O/C LT CT

DRAWING NO:- GA-013323-039A
 SHEET NO:-

REV. NO. 00	DESCRIPTION	REV. BY	APPD. BY	DATE
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APPROVED
 Subject to the condition that you are not at all responsible for any correctness or otherwise of the design or drawing supplied as per the order.
 Electrical Superintending Engineer
 Planning and Engineering
 State Power Transmission
 Vijayal Bhawan

11-7-23

DRAWING NO:-NP-013323-039A

REV.

00

36 KV CURRENT TRANSFORMER

S.No.

MADE TO

IS : 2705

RATIO

1200-600-300-150 / 1-1-1-1-1A

BURDEN

-1-1/20/-1-VA

LINE VOLT

36 KV

ACC CLASS

PS / PS / 0.25 / PS / PS

B.L.

36 / 70 / 170 KV

ALF / IS.F.

- / < 5

S.T.C.

25 KA / 3 Sec.

VK.(PS CORE)

> 1200-600-300-150V

CLASS OF INS.

A

Rcl.(PS CORE)

< 160 at 1200/1A

FREQUENCY

50Hz

lex.(PS CORE)

< 25mA at VK at 1200/1A

TYPE

O/D, O/C

TOTAL WEIGHT

170±20 Kg.

No OF CORE

FIVE

YEAR OF MFG.

20..

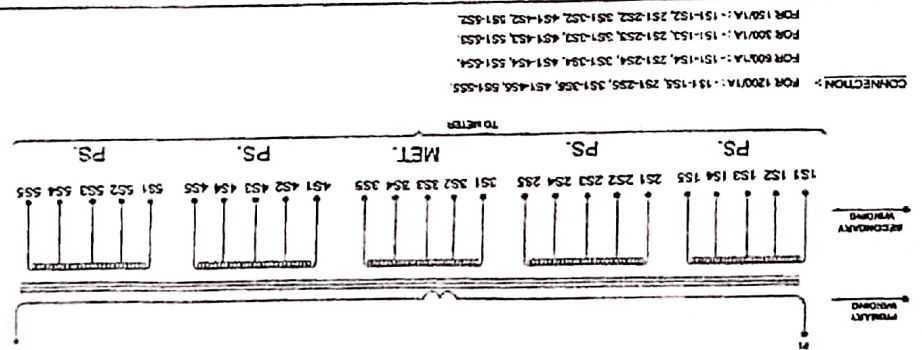
PROPERTY OF

P.O. No.

MD. BY: VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHAM, DELHI ROAD, MEERUT (INDIA) 250103

CAUTION
SECONDARY TERMINALS MUST BE SHORTED AND
EARTHED BEFORE THE BURDEN IS DISCONNECTED

CONNECTION DIAGRAM



APPROVED

Subject to the condition that you are not absolved of
the responsibility for correctness of the drawings
supplied as

Electrical Superintending Engineer
Planning and Engineering
Bharat Power Transmission Company Limited
Vijaya Ghat, Patna-850021

Accepted for NIT-10/18/180766/2023

VISHAL TRANSFORMERS &
SWITCHGEARS (P) LTD.

RITHAM, DELHI ROAD, MEERUT U.P. (INDIA)

BOM NO.

SCALE

N.T.S

ALUMINIUM

DRG. REF. NO.

DRAWING NO:-
NP-013323-039A

TITLE
RATING & CIRCUIT DIAGRAM PLATE

DIM.TOLERANCE:-

ALL DIMENSIONS ARE IN MM

DESCRIPTION

REV. NO.

WEIGHT:-

REV. BY
APPD. BY
DATE

DRAWING NO. 1
INS-02

DRG REF:

SCALE

SWITCHGEARS (P) LTD.

VISHAL TRANSFORMERS &

DATE _____

PAATTO : 1200-600-300-150 / 1-1-1-1A

APPROVED

NOTE :-

DRAWING NO:-INS-02

REV

61

520

0165

ALL DIMENSIONS ARE IN MM.

DIM. TOLERANCE:-

WEIGHT:-

REV. NO.	DESCRIPTION	REV. BY	APPD. BY	DATE

EMERGENCE OF TERMINALS FOR 36KV CT

SHEET NO:-

DETAIL OF SECONDARY TERMINAL BOX SHOWING
TITLE
DRAWING NO:- S.BOX-013323-039A



N.T.S.

BOM NO.

RITIK, DELHI ROAD, MEERUT U.P. (INDIA)

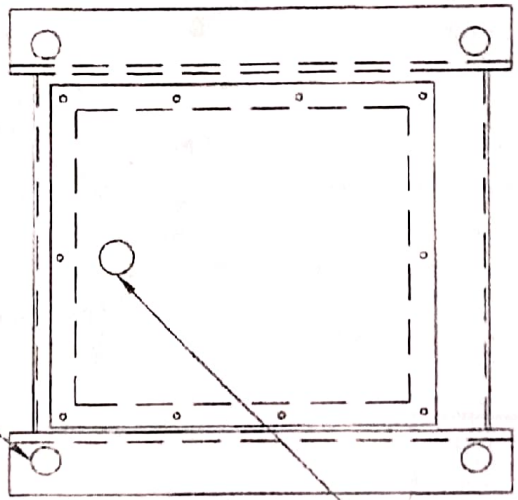
VISHAL SWITCHGEARS (P) LTD.

VISHAL TRANSFORMERS &

DRN.	NAME	SIGN.	DATE
ANUJ			10.06.23
CHK.	ARVIND		
APPD.	M.P.S.		

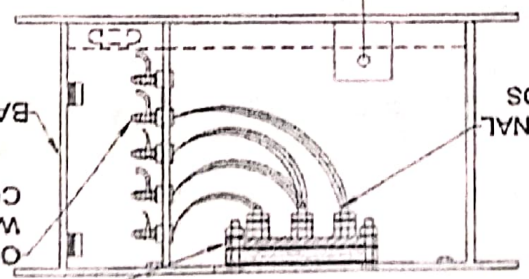
GA-013323-039A
DRG. REF.

BOTTOM VIEW



DETACHABLE GLAND PLATE
WITH HOLE FOR CABLE ENTRY

FRONT VIEW



CLAMP (M.S.)
OUTER BRASS TERMINALS
WITH NUTS & WASHERS FOR
CUSTOMER USE
BASE TANK

MOUNTING HOLES

RATIO : 1200-600-300-150 / 1-1-1-1A.

21/12/23

Adopted for NUT-10/PR) BPTLL/2023

APPROVED
Subject to the condition that you are not absolved of
the responsibility of correctness of the materials
supplied at:
Electrical Engineering
Planning and Engineering
Bihar State Power Transmission Company, Ltd.
Vidyal Bhawan, Patna-800001

REV NO.		DESCRIPTION		REV. BY		APPD. BY		DATE	

TITLE		JUNCTION BOX DRAWING		FOR CT	
DRAWING NO:-		J-BOX-0130		SHEET NO:-	
REV.					

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.		RITHMANI, DELHI ROAD, MEERUT U.P. (INDIA)		BOM NO.	
SCALE		N.T.S.		SEE NOTE	
APPD. M.P. S.		CHK. ARVIND		DRG. REF.	
DRN. ANUJ		10.08.23			
NAME		SIGN.		DATE	

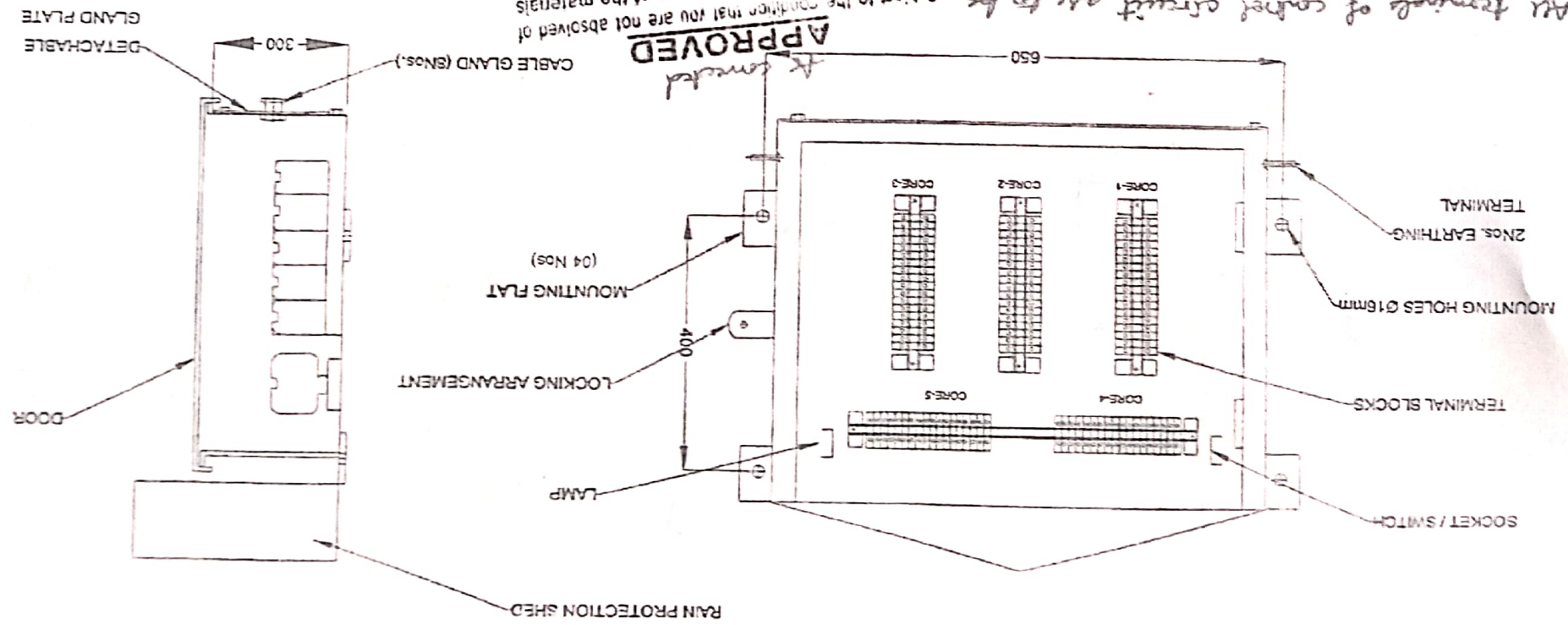
APPROVED

Subject to the condition that you are not absolved of the responsibility of the materials supplied as per drawing.

Electrical Supervising Engineer
(Planning and Engineering)
Bihar State Power Transmission Corporation
Vidyalok Bhawan, Patna-800021
BPHPTO: 1200-600-300-150 / 1-1-1-1A.

* All terminals of cable circuit are to be wired from secondary box of CT upto metering box plus 2 of spare terminals evenly distributed on all T&A.

- NOTE:-
1. MATERIAL : 2mm M.S. SHEET
 2. DEGREE OF PROTECTION : IP-55
 3. TOTAL WEIGHT : 24±10%Kgs.
 4. FINISH : GREY PAINT OUTSIDE & INSIDE.
 5. CABLE GLANDS SUITABLE FOR 4CX6mm², STANDARD CU. CABLE SHALL BE PROVIDED.
 6. NEOPRENE GASKET SHALL BE PROVIDED FOR DOORS ON ALL SIDES.
 7. 20% T.B.S SHALL BE PROVIDED IN SPARE.



Adopted dtd. 12.11.23
12/11/23

11/11

DRAWING NO:-PRV-02

REV

S.No.	ITEM	MATE./SPEC.	QTY.
1.	RAIN SHADE CAP	PLASTIC	1No.
2.	"O" RING	NITRILE BUTYL RUBBER	2Nos.
3.	STUD	M.S. ZINC PLATED	1No.
4.	SPRING	S.S / SPRING STEEL	1No.
5.	BODY	BRASS	1No.
6.	MOUNTING THREAD	1/4" B.S.P	—
7.	LOCK NUTS	M.S. ZINC PLATED	2Nos.

BILL OF MATERIAL

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

Electrical Superintending Engineer

(Planning and Engineering)

Binay State Power Transmission Company Limited

Vidyal Bhawan, Patna-800021

Adapted for N.T - 10 / R / 155 PT CL / 2023

RATIO : 1200-600-300-150 / 1-1-1-1-A.

VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.
RITHUAN, DELHI ROAD, NEERUPUR (INDIA)

DRN.	ANUJ	10.06.23
CHK.	ARVIND	
APPD.	M.P.S.	
DRG. REF.		
GA-013323-039A		



SCALE

BOM NO.

SEE TABLE

N.T.S.

TITLE

PRESSURE RELIEF VALVE FOR 36 KV CT

DRAWING NO:-**PRV-02**

REV.

SHEET NO:-

00

WORKING / OPERATING PRESSURE: 0.6 - 0.8 Kg/cm²

DIM.TOLERANCE:-

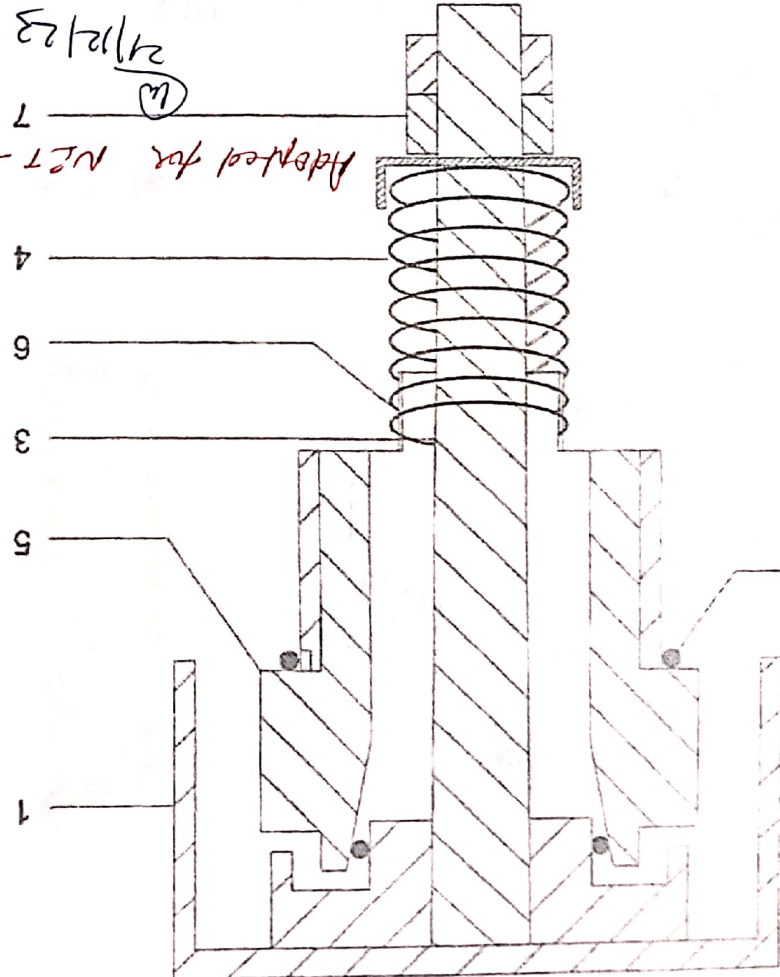
ALL DIMENSIONS ARE IN MM.

DESCRIPTION

REV NO.

WEIGHT:-

REV. BY
APPD. BY
DATE



7

4

6

3

5

1

2

1

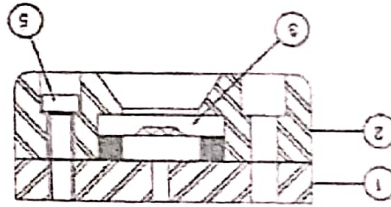
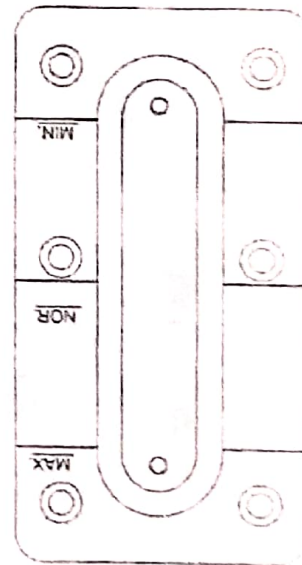
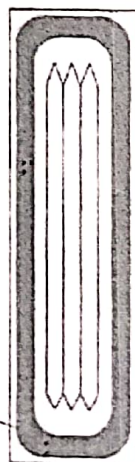
BILL OF MATERIAL

S.No.	ITEM	MATE./SPEC.	QTY.
1.	BASE PLATE	M.S.	1No.
2.	COVER	ALUMINIUM	1No.
3.	SHEET	CLASS	1No.
4.	GASKET	NITRILE BUTYL RUBBER	1No.
5.	ALLEN KEY BOLT	S.S.	5Nos.

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per drawing.

APPROVED

Electrical Engineering Engineer
Bharat Power Transmission Company Limited
Bharat Bhawan, Patna-8.



Adopted for N2T-10 (P2) & N2T-10 (P1)
2/12/23

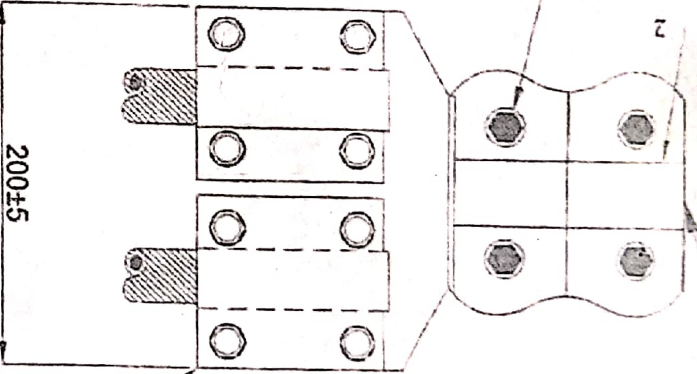
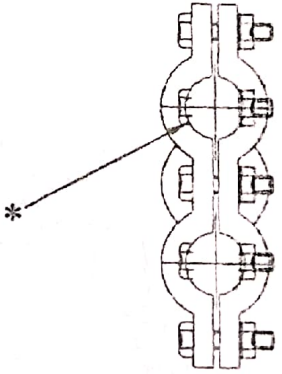
ALL DIMENSIONS ARE IN MM.		DIM. TOLERANCE %		WEIGHT:-																			
REV NO.	DESCRIPTION	REV. BY	APPD. BY	DATE																			
<table border="1"> <tr> <td colspan="2">TITLE</td> <td colspan="2">36KV O/D O/C LT CT</td> <td colspan="2">SHEET NO.:-</td> </tr> <tr> <td colspan="2">DRAWING NO.:-</td> <td colspan="2">OLI-0135</td> <td colspan="2">REV</td> </tr> <tr> <td colspan="2">DRG. REF.</td> <td colspan="2">GA-013323-039A</td> <td colspan="2">CO</td> </tr> </table>						TITLE		36KV O/D O/C LT CT		SHEET NO.:-		DRAWING NO.:-		OLI-0135		REV		DRG. REF.		GA-013323-039A		CO	
TITLE		36KV O/D O/C LT CT		SHEET NO.:-																			
DRAWING NO.:-		OLI-0135		REV																			
DRG. REF.		GA-013323-039A		CO																			
BOM NO.		SCALE		N.T.S.																			
SEE TABLE		N.T.S.		N.T.S.																			
VISHAL TRANSFORMERS & SWITCHGEARS (P) LTD.		ATTN: DELHI ROAD, MEERUT UP (INDIA)																					
DRN.	ANUJ	CHK.	ARVIND	APPD.	M.P. S.																		
DATE	10.06.23	SIGN.		DATE																			

all

BILL OF MATERIAL

S.No.	ITEM	MATE./SPEC.	QTY.
1.	MAIN BODY OF CONNECTOR	AL ALLOY (TH. 12mm MIN.)	1 No.
2.	BI-METALLIC SLEEVE	AL / Cu (Co. or TH.)	1 No.
3.	NUT, BOLT, PLAIN & SPRING WASHER	M.S. (ZINC PLATED/HDG)	12 NOS.

☒	MOOSE	Ø31.77	ACSR
☒	TAKANTULA	Ø36.61	ACSR
☐	C.B. CONDUCTOR	DIM.	TYPE



HOLE SIZE AS PER PRIMARY TERMINAL

APPROVED
 Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per drawing.

Adopted by NTP-10/PR/BS
21/2/23
 Bihari State Power Transmission Company Limited
 (Planning and Engineering)
 Bihari State Power Transmission Company Limited
 Vinay Bhawan, Patna-800004

RATIO : 1200-600-300-150 / 1-1-1-1A

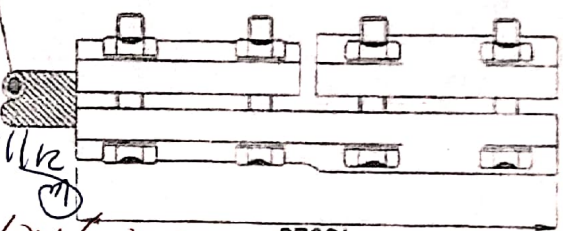
VISAL TRANSFORMERS & SWITCHGEARS (P) LTD.
 RITHAM, DELHI ROAD, MEERUT U.P. (INDIA)

DRN. ANUJ	CHK. ARVIND	APD. M.P.S.
DATE 10.08.23		

TITLE
 BI-METALLIC TERMINAL CONNECTOR FOR CT

REV. NO.	DESCRIPTION	REV. BY	APD. BY	DATE

CONDUCTOR



ALL DIMENSIONS ARE IN MM.

DIM. TOLERANCE:- As Per Dwg

WEIGHT:-

DRAWING NO.- **M-06**

SHEET NO.-

CO