

Drawing approval subject to valid vendor registration

LIST OF STANDARD DRAWINGS FOR EPC CONTRACTS ONLY

145 KV INDUCTIVE VOLTAGE TRANSFORMER		$I/V \text{ RATIO} = \frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$				
SR.NO.	TITLE	DRAWING NO.	REV.	RECORD		
				APPLICATION	RETURN	CC
				KIND	DATE	DATE
01	GENERAL ARRANGEMENT DRAWING	145IVT I WDG GA	R0	AA	15.09.2021	
02	SECTIONAL VIEW	145IVT I WDG SV	R0	AA	15.09.2021	
03	RATING & SCHEMATIC DIAGRAM	145IVT I WDG RS	R0	AA	15.09.2021	
04	SECONDARY BOX ASSEMBLY	145IVT I WDG SB	R0	AA	15.09.2021	

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.

AA : Application for Approval
 RA : Reapplication for Approval
 FD : Final Drawing
 RD : Reference Drawing
 AP : Approved
 AC : Approved with Corrections
 RC : Return for Corrections
 CC : Customer Comments

1) Minimum 300mm plinth shall be maintained for CT/PT/CVT/Isolators in the substation during foundation works to ensure safe live to ground clearances as per IE rules.

SURFACE FINISH.....
 FINISH : MS COMPONENT – HOT DIP GALVANISED.

PACKING DIMENSIONS : L-920 x W-680 x H-2725 mm.
 NET WEIGHT : 400 Kg. (Approx.)
 GROSS WEIGHT : 600 Kg. (Approx.)

Customer : APTRANSCO
 Customer Order Ref. :
 QUANTITY :

Chief Engineer
Power Systems, Planning & Design
APTransco

NO	REVISION	SIGN	DATE	NO	REVISION	SIGN	DATE	NO	REVISION	SIGN	DATE	SCALE	N.T.S.	DATE	ALL DIMENSIONS ARE IN mm
R6				R4				R2							
R5				R3				R1							

LIST OF DRAWINGS
 145 KV INDUCTIVE VOLTAGE TRANSFORMER
 TYPE-VB01:145/650/50

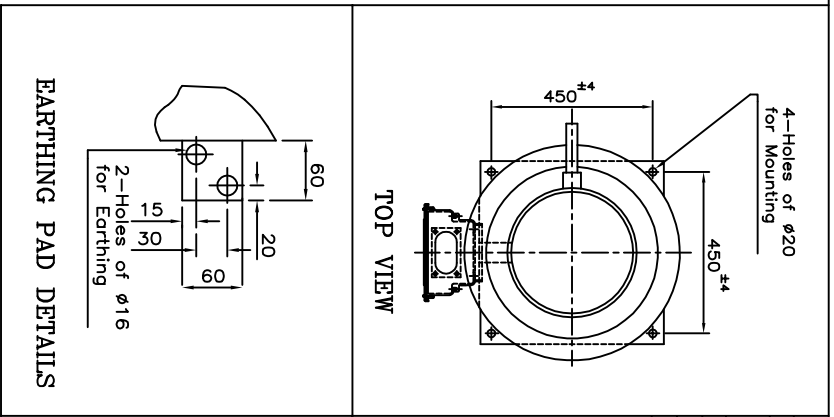
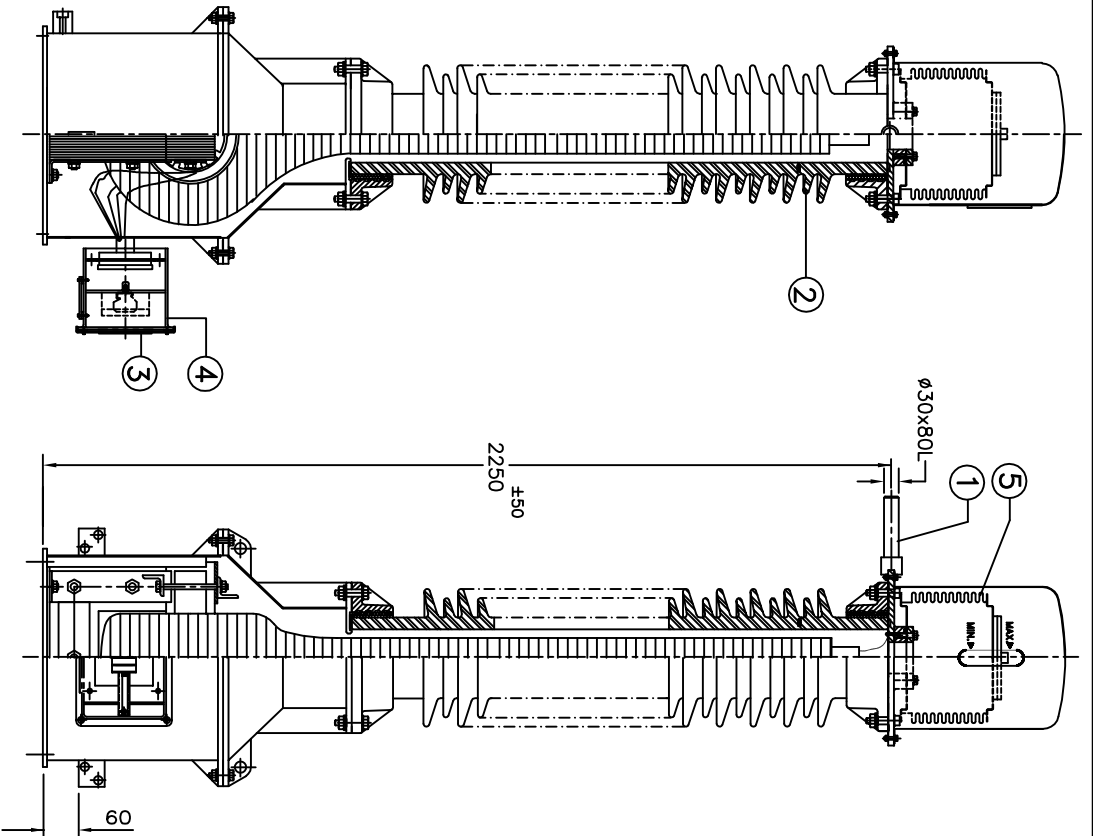


GEC Power and Industrial Solutions Limited, Bangalore
 DRG-NO--145IVT I WDG ID/R0

IF IN DOUBT ASK

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IF IN DOUBT ASK



NO.	QTY.	DESCRIPTION	MATERIAL
1	1	PRIMARY TERMINAL (ø30x80L) Min.	COPPER
2	1	PORCELAIN INSULATOR (BROWN COLOUR)	PORCELAIN
3	1	RATING & SCHEMATIC DIAGRAM	145VT WDG RS
4	1	SECONDARY TERMINAL BOX	145VT WDG SB
5	1	BELLOWS	STAINLESS STEEL

NOTE : PLEASE REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION OF VT.

SIDE VIEW

FRONT VIEW

TOP VIEW

EARTHING PAD DETAILS

Chief Engineer
Power Systems, Planning & Design
APTtransco

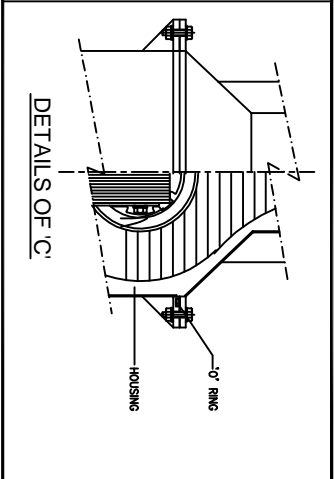
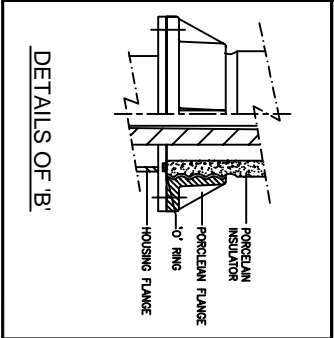
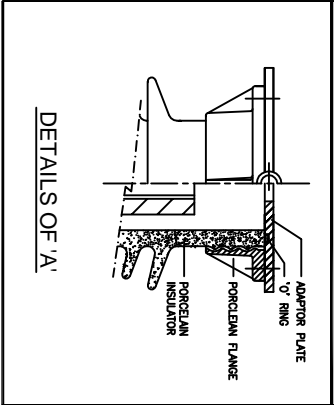
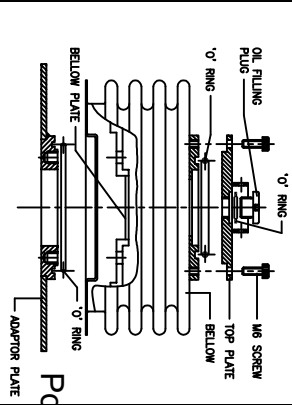
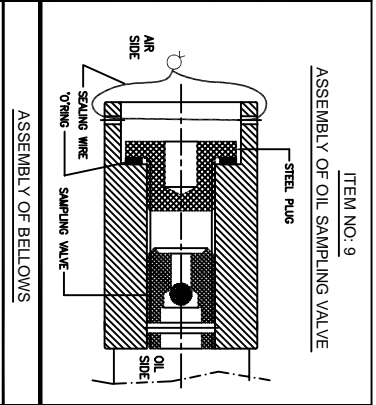
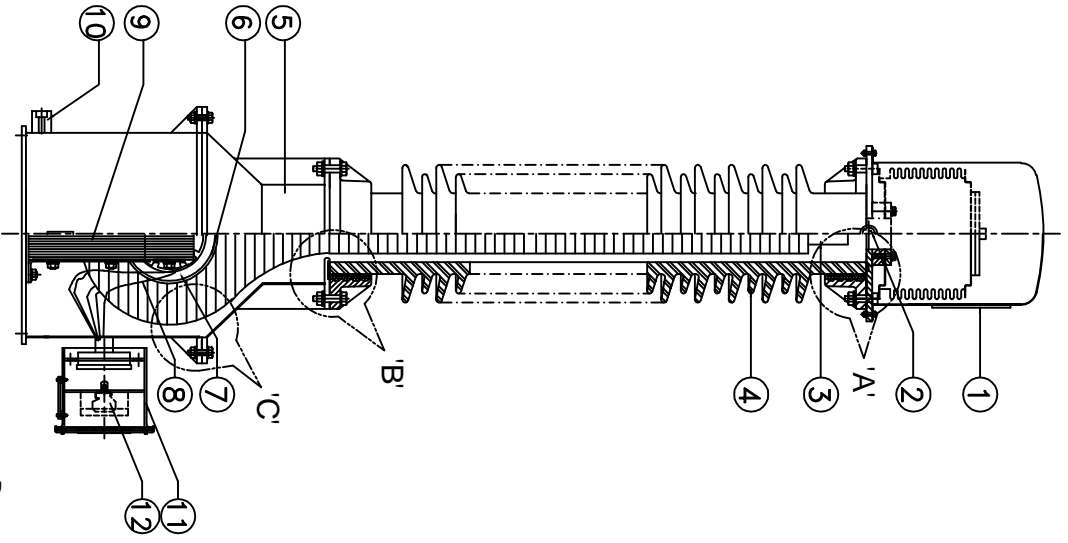
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R6				R4				R2				R1							
R5				R3															

GENERAL ARRANGEMENT DRAWING
FOR 145 VT INDUCTION METER TRANSFORMER
TYPE-VB01:45/650/50



CG Power and Industrial Solutions Limited Aurgabad
DRG.NO.-145VT | WDG GA/RO

IF IN DOUBT ASK



ITEM	QTY.	DESCRIPTION
1	1	OIL LEVEL INDICATOR
2	1	PRIMARY TERMINAL (ø30x80mm, Long Min)
3	1	COND. BUSHING
4	1	PORCELAIN INSULATOR
5	1	HOUSING
6	1	SHIELD
7	1	PRIMARY WINDING
8	1	SECONDARY WINDING
9	1	CRGO-CORE
10	1	OIL SAMPLING VALVE
11	1	SECONDARY TERMINAL BOX
12	4	SECONDARY TERMINALS

Chief Engineer
Power Systems, Planning & Design
APTransco

Drawing approval subject to valid vendor registration

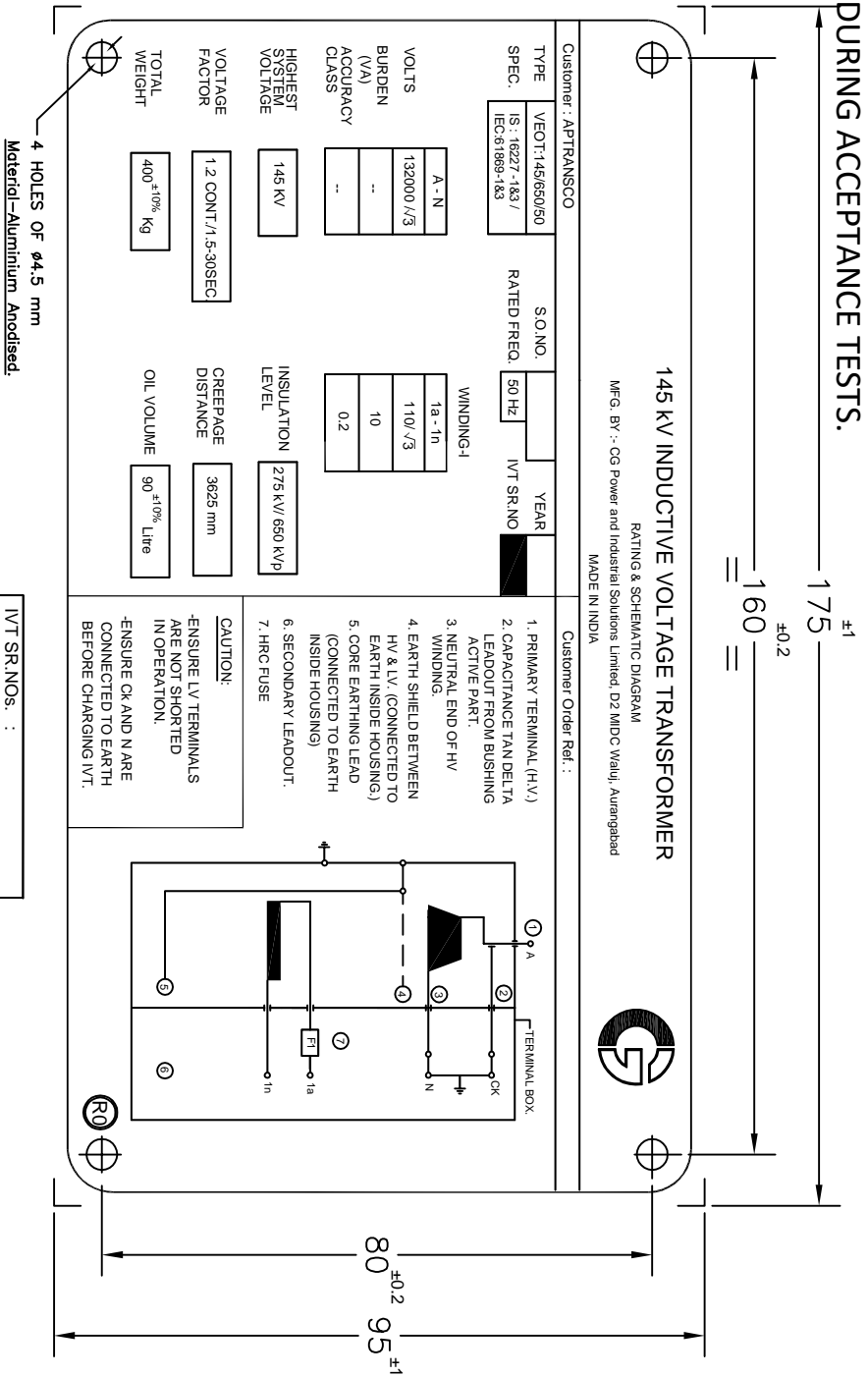
R6			R4		R2															
R5			R3		R1															
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SECTIONAL VIEW DRAWING
DR 16 AT INDICATE VALVE POSITION
TYPE - VERT. 145 / 50



CIG Power and Industrial Solutions Limited, Bangalore
DRG.NO.-145VT | WDG SV/RO

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.



Customer : APTRANSCO		S.O.NO.		YEAR		Customer Order Ref. :	
TYPE VECT:145/650/50		RATED FREQ. 50 Hz		IVT SR. NO.			
SPEC. IS : 16227-183 / IEC:61989-183							
VOLTS A - N		WINDING-1					
BURDEN 132000 K/3		1a - 1n					
V(A) --		110 V/3					
ACCURACY CLASS --		10					
HIGHEST SYSTEM VOLTAGE 145 KV		INSULATION LEVEL 275 KV/ 650 KVP					
VOLTAGE FACTOR 1.2 CONT./1.5-30SECC		CREEPAGE DISTANCE 3625 mm					
TOTAL WEIGHT 400 ±10% Kg		OIL VOLUME 90 ±10% Litre					
4 HOLES OF Ø4.5 mm		Material- Aluminium Anodised.					
IVT SR. NOS. :							

NO	REVISION	SIGN	DATE	SCALE	DATE
R6		R4			
R5		R3			
R4		R2			
R3		R1			

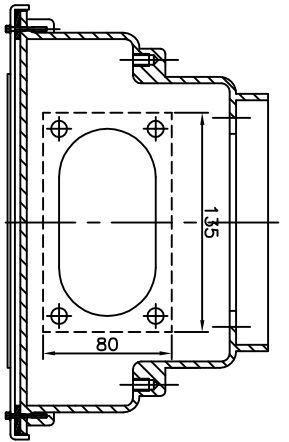
DRN	CHD	APPD	SCALE	DATE
SSM	SSM	SSM	1:1	15.09.2021

NAME	POSITION
Chief Engineer	Power Systems, Planning & Design
APTranSCO	

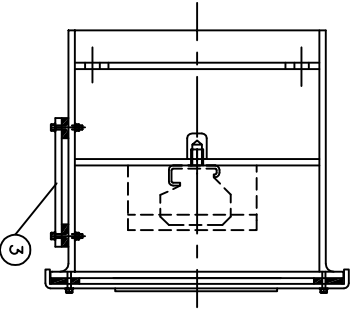
IF IN DOUBT ASK



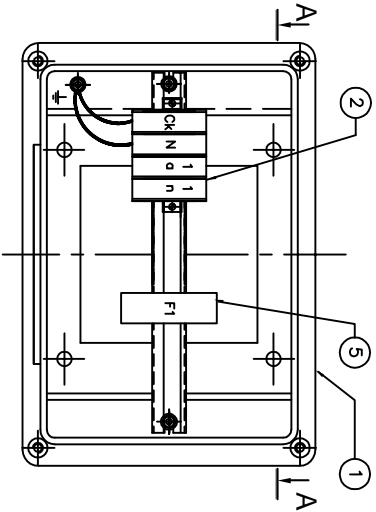
S.L.NO.	QTY	ITEM	MATERIAL	RM SIZE/SPECIFICATION
1	1	SECONDARY BOX ASSEMBLY	ALUMINIUM	DRG.NO.-480684
2	4	SEC:TERMINAL BLOCK WITH MARKER	MELAMINE	MAKE: ELMEX KBT M5-15
3	1	GLAND PLATE	ALUMINIUM	135x80 mm.
4	1	RATING & SCHEMATIC DIAGRAM	ALUMINIUM ANOD.	--
5	1	HRC FUSE	RATING-6AMP., REPUTED MAKE	



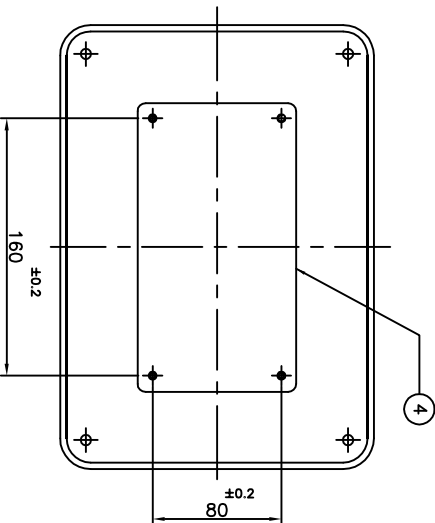
TOP VIEW (SECTION A-A)



SIDE VIEW



ELEVATION



COVER

IF IN DOUBT ASK

- NOTES :
 1) SECONDARY BOX ASSEMBLY TO CONFORM IP55 AS PER IS:13947
 2) CK:TERMINAL FOR CAPACITANCE & TAN DELTA MEASUREMENT ONLY. SHOULD BE KEPT EARTHED WHEN NOT IN USE.

Chief Engineer
 Power Systems, Planning & Design
 APTransco

NO	REVISION	SIGNATURE NO	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO
R6			R4				R2							
R5			R3			R1								
ND														

SIGN	NAME	SECONDARY BOX ASSEMBLY	RM SIZE/SPECIFICATION
DRN	STJ	FOR 14KV INDUCTIVE VOLTAGE TRANSFORMER	DRG.NO.-480684
CHD	SSM		MAKE: ELMEX
APPD	SDS		KBT M5-15
			135x80 mm.
			--
			RATING-6AMP., REPUTED MAKE

DATE: 15.09.2021
 ALL DIMENSIONS ARE IN mm
 DRG.NO: 1451V1 I VDG SB/90



CG Power and Industrial Solutions Limited, Aurangabad

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**GUARANTEED TECHNICAL PARTICULARS FOR
 ELECTROMAGNETIC (INDUCTIVE) VOLTAGE TRANSFORMERS**

REF.	145 KV IVT	132000/√3 /110/√3 V , Normal Creepage.			Revision No.	R0
Sr#	Particulars	Unit	Values			
1	Type/ Installation					
2	Manufacturer's Name and Country of Manufacture		CG Power and Industrial Solutions Limited Aurangabad, India			
3	Manufacturers Type designation		VEOT:145/650/50			
4	Highest System Voltage (Ph. to ph.)	kV	145			
5	Type of insulation used		Class A (Oil Impregnated Paper)			
6	Rated Frequency	Hz	50			
7	Suitable for Altitude (Max)	Meters	1000			
8	Conforming to Standard		IS: 16227-1&3 / IEC: 61869-1&3			
9	Rated System Voltage	kV	132/√3			
10	No. of Secondary Windings		One			
11	Secondary Winding Details		I			
12	Rated Primary voltage	Volts	132000/√3			
13	Rated Secondary Voltage	Volts	110/√3			
14	Rated Secondary Burden	VA	10			
15	Accuracy Class		0.2			
16	Rated Voltage Factor		1.2 Continuous, 1.5 for 30 secs.			
17	Simultaneous Burden		NA			
18	One minute Power Frequency (Wet & Dry) withstand Voltage on Primary Winding	kV rms	275			
19	1.2/50 micro sec. Lightning Impulse withstand Voltage	kV peak	650			
20	One minute Power Frequency withstand Voltage on Secondary Winding	kV rms	3			
21	Total Creepage distance	mm (mm/kV)	3625 (25 mm/kV)			
22	Primary Terminal material & details		Copper, φ30 x 80 mm long			
23	Surface Finish of MS components exposed to atmosphere		Hot Dip Galvanized			
24	Secondary Terminal Box arrangement		Single Door Box.			
25	Volume of Oil	Litres	90 +/-10%			
26	Total weight of equipment	kg	400 +/-10%			
27	Mounting details	mm	4 holes of φ20 at 450 x 450 mm			
28	Dielectric Dissipation Factor (Tan-Delta)		< 0.005			
29	Measurement of Partial Discharge @ 1.2 UM/ √3	pC	< 5			
30	Measurement of Partial Discharge @ UM	pC	< 10			

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.

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 Corporate Identity Number: L99999MH1937PLC002641

1) Minimum 300mm plinth shall be maintained for CT/PT/CVT/Isolators in the substation during foundation works to ensure safe live to ground clearances as per IE rules.

2) Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/PT/CVT/Isolators requirement and compatibility.

Chief Engineer
 Power Systems, Planning & Design
 APTransco