

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

5136390/2021/EEMRT-ENE51



FOR EPC CONTRACTS ONLY

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA
 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.
 CONTRACTOR :
 2) Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the PO NO. drawings, the EPC contractors shall be instructed to supply the same in line with CT/PT/CVT/Isolators requirement and compatibility.
 PROJECT :

Drawing approval subject to valid vendor registration

LIST OF DRAWINGS BEING SUBMITTED FOR 245 kV CT (LIVE TANK TYPE OSKF-245)
 CT RATIO: 200/1A (BAR TYPE PRIMARY)

SL	DRAWING NUMBER	DESCRIPTION OF DRAWING
01	Rev:00	GTP
02	411-B-10683 Rev:00	OUTLINE DIAGRAM
03	431-B-6804 Rev:00	RATING & CONNECTION PLATE
04	411-B-10684 Rev:00	SECTIONAL VIEW
05	422-B-5377 Rev:00	DETAIL OF SEC TERMINAL BOX

Note: Drawing Approval subject to valid type test reports to be checked during acceptance tests

Chief Engineer
 Power Systems, Planning & Design
 APTransco

PRPD:
 SANGITH
 24.03.2021

CHKD:
 SANGITH
 24.03.2021

APPRD:
 MAYANK
 24.03.2021

ISO : -----

⚠ CONTENTS OF THE DRAWING SHALL NOT BE MODIFIED WITHOUT PRIOR INTIMATION TO GE. REQUIRED CHANGES, IF ANY, SHALL BE HIGHLIGHTED OR MARKED AND COMMUNICATED TO GE FOR NECESSARY ACTION

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GUARANTEED TECHNICAL PARTICULARS FOR CURRENT TRANSFORMER

245kV CT RATIO - 200/1A



Sr. No.	Description	Technical Parameters
1	Manufacturer	GE T&D INDIA LIMITED, INDIA
2	CT Type	OSKF 245
3	Design	Live Head-type, Oil filled ,Out door & Hermatically sealed
4	Max. Systems Voltage	245 kV
5	Nominal Systems Voltage	220 kV
6	Nominal Frequency	50 Hz
7	Lightning Impulse Withstand Voltage 1.2/50µS	1050 kV
8	Power Frequency Withstand Voltage (1 min)	460 kV
9	Switching Impulse Withstand Voltage - 250/2500µS (Wet)	N/A
10	Insulator	Porcelain
11	Nominal Creepage Distance	6125 mm
12	Color of Insulator	Brown
13	Standard applicable	IEC-61869-1&2
14	Rated Primary Current (contin.)	200A
15	Rated Primary Current (extended)	240A
16	Power Frequency Withstand Voltage between Secondary & Earth	5 kV for 1 min.
17	No. of Cores	1
18	Ratio	200/1 A
19	Core Data (Burden & Accuracy Classes)	
	Core 1	5VA, 0.2S, ISF ≤ 5
	Core 2	-
	Core 3	-
	Core 4	-
20	Rated Short Time Thermal Current	40 kA / 1 sec.
21	Rated Short Time Dynamic Current	100 kAp
22	Radio Interference Voltage at 1.1 Ur/√3 at 1.0 Mhz	≤1000µV
23	Partial discharge level	10pC at Um, 5pC at 1.2 Um/√3 (Max)
24	Oil Standard (EHV Grade)	IEC 60296
25	Oil Quantity	155 Kgs
26	Oil Type	Mineral Oil
27	Dimensional details	
	a) Overall height from mounting plane (mm)	3485±100
	b) Height up to terminals from mounting plane (mm)	3070±90
	c) Mounting dimensions and diameter of mounting holes (mm)	450±10 x 450±10 (Hole to Hole); Mounting hole Ø20 x 4 nos
	d) Terminal pad dimensions (mm)	50mm Diameter; 135mm length
e) Material of primary terminal	Aluminium	
28	Details of Insulator	
	Make	BHEL/IEC/MODERN
	Type	Hollow
	Height (mm)	2270±10
	Inner diameter (mm)	160±5
	Cantilever strength	400kg
29	Seismic accelartion	0.3g
30	Corona Extinction Voltage	156 KVrms
31	Similar equipment type tested within the last 2 years	Yes
32	Transportation postion	Horizontal only
33	Overall general dimension drawing	Refer Outline Drawing
34	Total equipment weight	720kg
35	Tan delta	<0.005, As per IEC 61869-1&2

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Sangith.R
24.03.2021

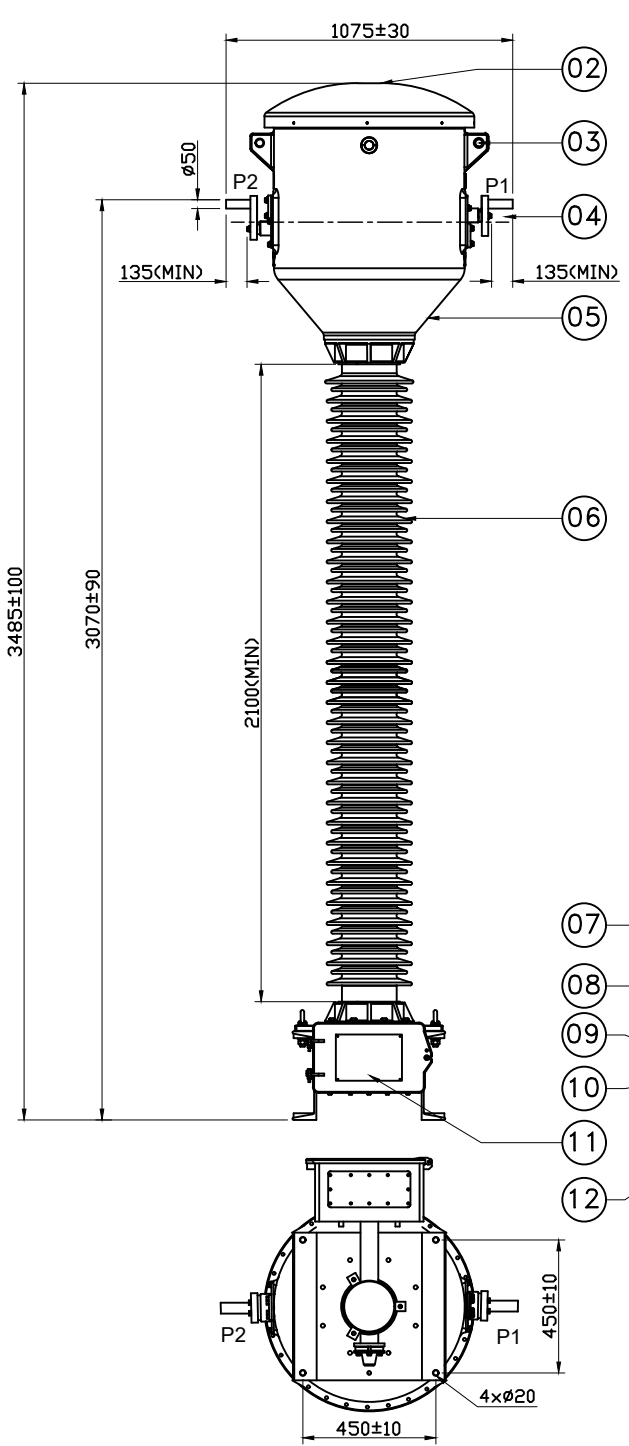
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Mayank
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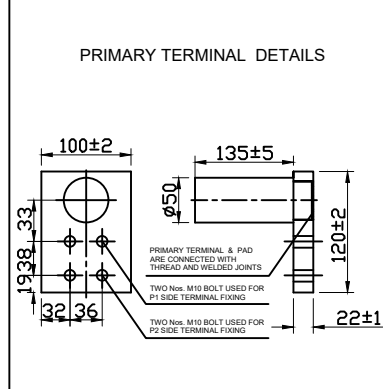
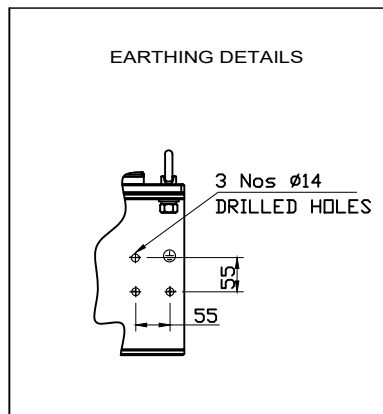
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CAUTION:- WHEN SHIPPED IN THE TILTED POSITION OR HORIZONTALLY, TILT THE TRANSFORMER ONLY IN THE DIRECTION OF ARROW - 'X'

ATTENTION
 USE EYE BOLT FOR
 TILTING PURPOSE ONLY



IT.No.	DESCRIPTION	MATERIAL	33
1	OIL SIGHT GLASS	POLYCARBONATE	01
2	BELLOW COVER	ALUMINIUM	01
3	TANK LIFTING EYE	ALUMINIUM	02
4	PRIMARY TERMINAL STUD	ALUMINIUM ALLOY	02
5	TANK	ALUMINIUM	01
6	INSULATOR & END CASTING	PORCELAIN & GCI/AI	01
7	EYE BOLTS FOR LIFTING	STAINLESS STEEL	04
8	BASE PLATE	ALUMINIUM	01
9	SEC TERMINAL BOX	MS HDG / AL	01
10	OIL DRAIN DEVICE	BRASS	01
11	RATING & SCHEMATIC PLATE	STAINLESS STEEL	01
12	MOUNTING CHANNEL/EARTHING PAD	MS HDG	02

NOTES :-

- 01. NOMINAL CREEPAGE DISTANCE: 6125 mm.(25mm/kV)
- 02. TOTAL WEIGHT OF C.T : 720 Kgs (Approx.)
- 03. TOTAL SHIPPING WEIGHT: 1000 Kgs (Approx.)
- 04. MAKE OF INSULATOR :- BHEL / IEC / MODERN
- 05. GENERAL TOLERANCE WILL BE APPLICABLE WHERE TOLERANCE IS NOT INDICATED
- 06. MINOR MODIFICATION WITHOUT NOTICE
- 07. ALL FERROUS PARTS SHALL BE HOT DIP GALVANIZED
- 08. OIL COMPLIANCE STANDARD - IS:335 / IEC:60296
- 09. CANTILEVER STRENGTH - 400Kg (Min.)

ELECTRICAL PARAMETERS :-

RATED SYSTEM VOLTAGE	: 220 kV
HIGHEST SYSTEM VOLTAGE	: 245 kV
APPLICABLE STANDARD	: IEC:61869-1&2
RATED PRIMARY CURRENT	: 200A
RATED EXTENDED PRIMARY CURRENT	: 120% OF RATED PRIMARY CURRENT
INSULATION LEVEL	: 245/460/1050 kV (Peak)
SHORT TIME CURRENT	: 40 kA FOR 1 Sec.
DYNAMIC CURRENT	: 100kA (Peak)
RIV at 156 kV	: < 1000 μV

CT RATIO: 200/1A (BAR TYPE PRIMARY)

REVISION	DESCRIPTION	NAME	DATE
DRN.		SANGITH	24.03.2021
CHD.		SANGITH	24.03.2021
APPD.		MAYANK	24.03.2021

Chief Engineer
 Power Systems, Planning & Design
 APTransco

ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.		SCALE : NTS
OUTLINE DIAGRAM		REF: -----
FOR 245 kV CT (LIVE TANK TYPE OSKF-245)		
(120% EXTENDED PRIMARY CURRENT)		
		DRG.No. 411-B-10683
GE T&D India Limited		Rev:00

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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.
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NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.
 DRAWING OF (MATERIAL : STAINLESS STEEL - 0.5 mm THICK)

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GE T&D INDIA LIMITED
MADE IN INDIA

CURRENT TRANSFORMER
AS PER IEC 61869-1&2

SL.No./YEAR	CUSTOMER	TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA							
RATIO (A/A)	200/1					TYPE	-	OSKF 245	
CORE NUMBER	1	2	3	4	5	6	HSV/NSV	kV	245/220
ACCURACY CLASS	0.2S	-	-	-	-	-	BIL	KV(r.m.s)/kVp	460/1050
ISF/ALF	≤ 5	-	-	-	-	-	FREQUENCY	Hz	50
OUTPUT (VA)	5	-	-	-	-	-	RTD. CONT. CURRENT	A	200
KPV (V)	-	-	-	-	-	-	RTD. EXT. CURRENT	A	240
I _{exc} at V _k (mA)	-	-	-	-	-	-	RTD. THER. CURRENT	A	-
R _{ct} at 75°C (Ohms)	-	-	-	-	-	-	I _{th}	kA/S	40/1
SECONDARY CONNECTION	P1-P2	200/1	1S1-1S2S' (SHORT 1S2 S')	-	-	-	I _{dyn}	kA	100
	-	-	-	-	-	-	OIL WEIGHT	Kg	155
	-	-	-	-	-	-	TOTAL WEIGHT	Kg	720
	-	-	-	-	-	-	INSULATION CLASS	-	CLASS "A"
	-	-	-	-	-	-	NOMINAL CREEPAGE	mm	6125

SCHEMATIC DIAGRAM AND CONNECTION

ATTENTION

- L.V. BUSHING SHOULD ALWAYS BE EARTHED & DISCONNECTED ONLY FOR TAN DELTA MEASUREMENT
- EARTHING LINK TO BE RECONNECTED FIRMLY BEFORE ENERGISING CURRENT TRANSFORMER

NOTES:-

- INSULATION OIL TYPE : MINERAL OIL (IS 335 / IEC 60296)
- TEMPERATURE CATEGORY : -5°C TO 40°C (AS PER IEC 61869-1; CLAUSE-4.2.1)
- STATIC LOAD WITHSTAND : 4000N (AS PER IEC 61869-1; CLAUSE-6.7)
- "C" - CAPACITANCE/TAN DELTA POINT

⚡ DANGER:- VOLTAGE RISE WHEN SECONDARY IS OPENED

431-B-6804 Rev:00

210±0.5

220

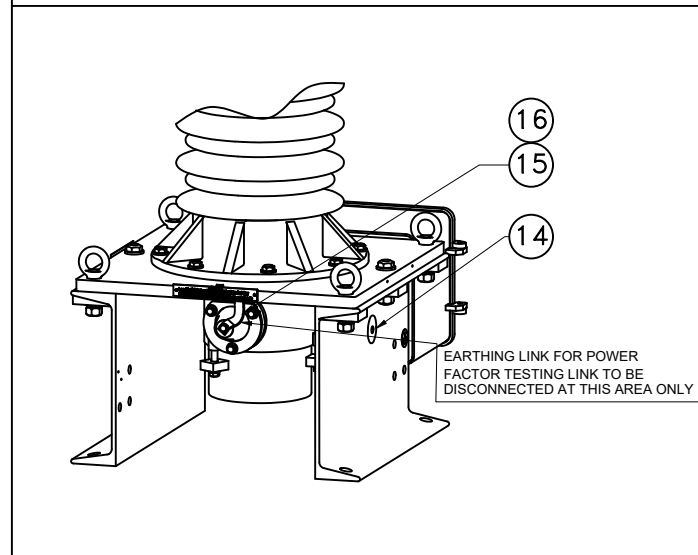
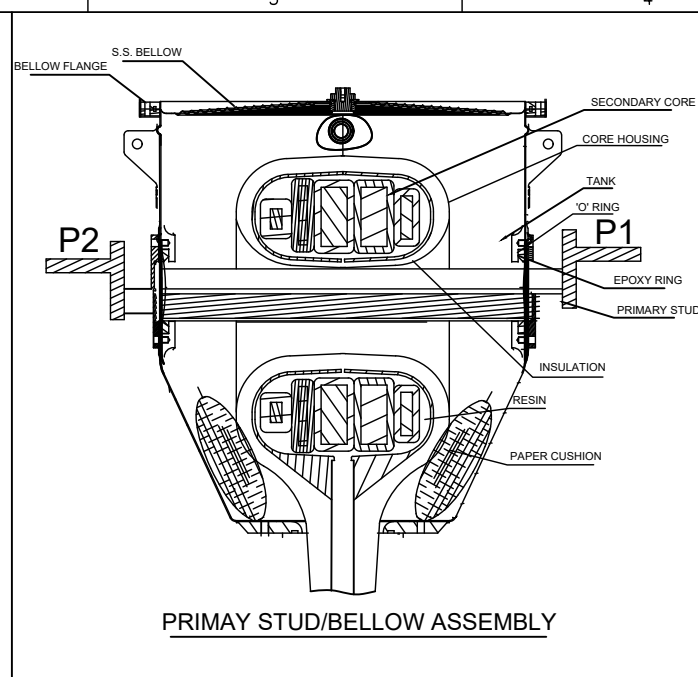
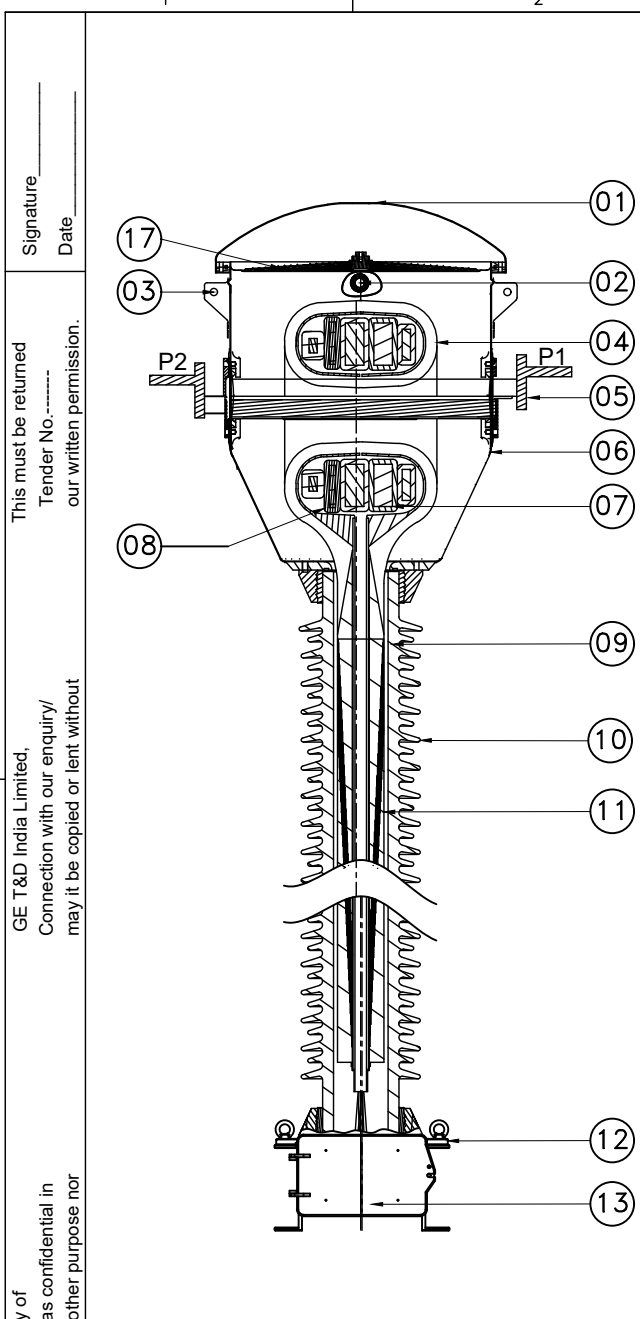
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CT RATIO: 200/1A (BAR TYPE PRIMARY)				
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	24.03.2021	RATING & CONNECTION PLATE FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF:
CHD.	SANGITH	24.03.2021		
APPD.	MAYANK	24.03.2021		
				DRG.No. 431-B-6804
				Rev:00

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Power Systems, Planning & Design
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IT.No.	DESCRIPTION	MATERIAL	35
01	BELLOW COVER	ALUMINIUM ALLOY	513
02	OIL SIGHT GLASS	POLYCARBONATE	
03	TANK LIFTING EYE	ALUMINIUM ALLOY	
04	HEAD INSULATION	PAPER	
05	PRIMARY TERMINAL	ALUMINIUM ALLOY	
06	TANK	ALUMINIUM ALLOY	
07	SECONDARY CORES	CRGO/SPL ALLOY	
08	SECONDARY WINDING	COPPER	
09	OIL	MINERAL OIL	
10	INSULATOR	PORCELAIN	
11	ACTIVE PART	PAPER	
12	BASE PLATE	ALUMINIUM	
13	SECONDARY TERMINAL BOX	MS HDG WITH AL. COVER	
14	OIL DRAIN VALVE	BRASS	
15	LV BUSHING FOR TAN DELTA & CAPACITANCE MEASUREMENT	ELECTROLYTIC COPPER	
16	EARTHING LINK FOR LV BUSHING	BRASS	
17	BELLOW	STAINLESS STEEL	

PRIMARY WINDING DETAILS :-

NO. OF PRIMARY TURN : TWO
 PRIMARY CONDUCTOR MATERIAL : ALUMINIUM ALLOY
 PRIMARY TERMINAL MATERIAL : ALUMINIUM ALLOY
 CROSS SECTIONAL AREA : 1963 Sq.mm

SECONDARY WINDING DETAILS :-

NO. OF SECONDARY TURNS : 400
 SEC. CONDUCTOR MATERIAL : SUPER ENAMELLED COPPER WIRE
 CROSS SECTIONAL AREA : 19 SWG - 14 SWG

CT RATIO: 200/1A (BAR TYPE PRIMARY)				
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	24.03.2021	SECTIONAL VIEW FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF: -----
CHD.	SANGITH	24.03.2021		
APPD.	MAYANK	24.03.2021		

REVISION	DESCRIPTION	
It.		

Chief Engineer
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DRG.No.
411-B-10684
Rev:00

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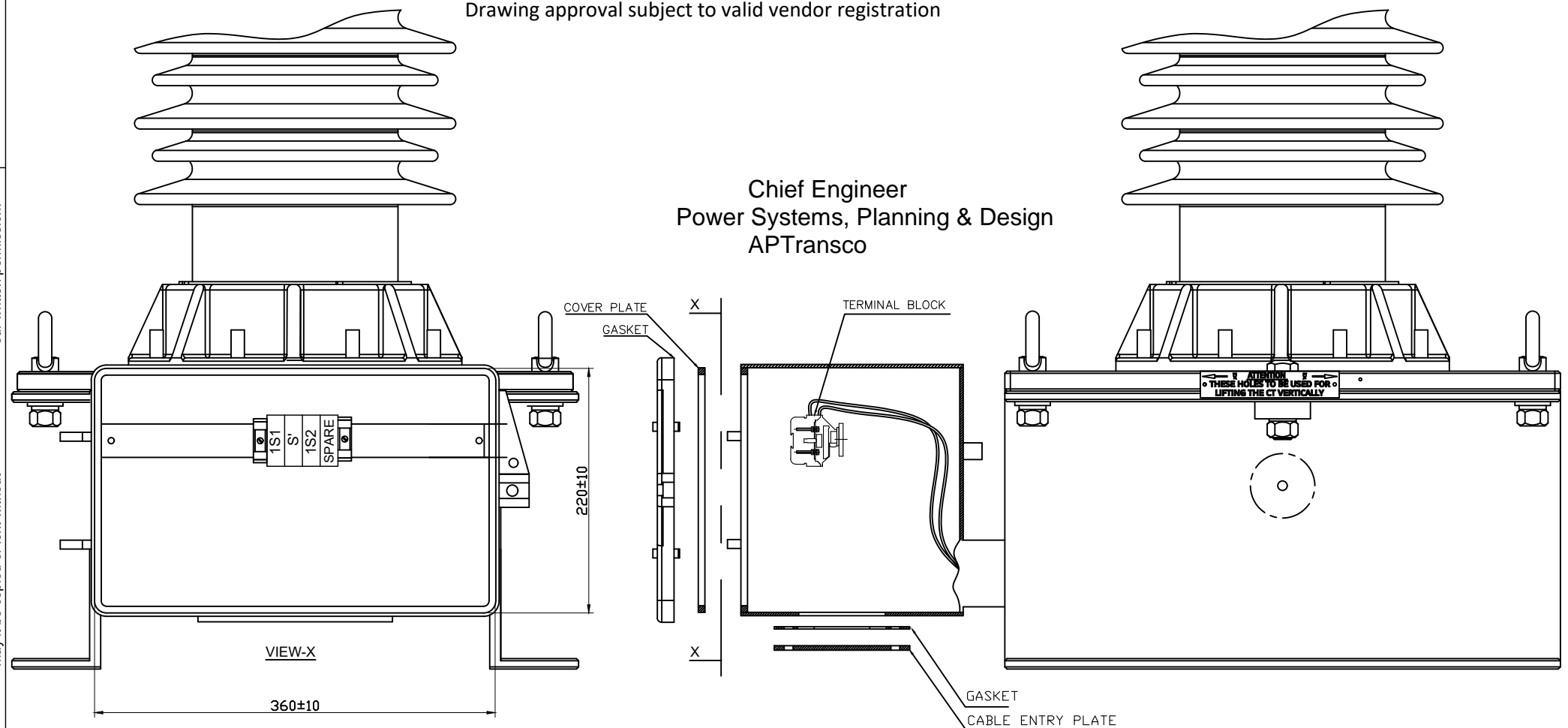
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

LEGEND

1. M6 STUD TYPE SECONDARY TERMINAL OF 750V GRADE SUITABLE FOR 4 - 6SQ.MM CABLE SIZE WITH NECESSARY SHORTING LINK
MAKE : ELMEX / CONNECTWELL
2. GASKET. (TYPE : NEOPRENE / EPDM)
3. CABLE ENTRY ALUMINIUM PLATE (278 x 122 x 4)

NOTES:

1. TERMINAL BOX CONFORMS TO IP:55 DEGREE PROTECTION AS PER IS/IEC60947-1:2004
2. 1 No.3/4" DOUBLE COMPRESSION CABLE GLANDS IN THE SCOPE OF GE SUPPLY.

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CT RATIO: 200/1A (BAR TYPE PRIMARY)			
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.
DRN.	SANGITH	24.03.2021	DETAIL VIEW OF SEC. TERMINAL BOX FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)
CHD.	SANGITH	24.03.2021	
APPD.	MAYANK	24.03.2021	
			SCALE : NTS
			REF: -----
			 
			DRG.No. 422-B-5377
			Rev:00



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