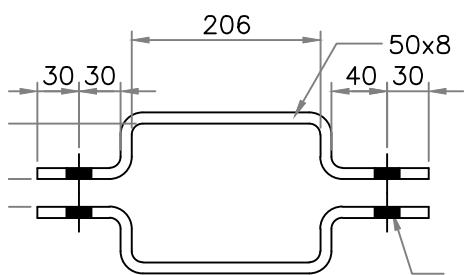
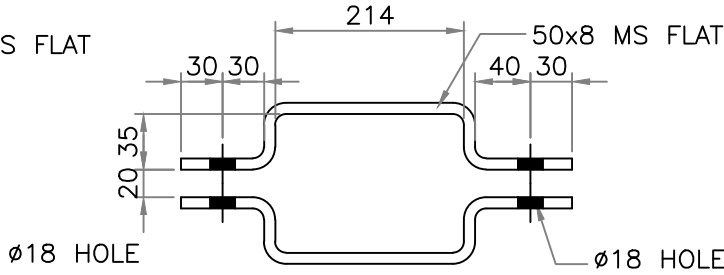


X(MM)	CLAMP NO
1300	901
900	900

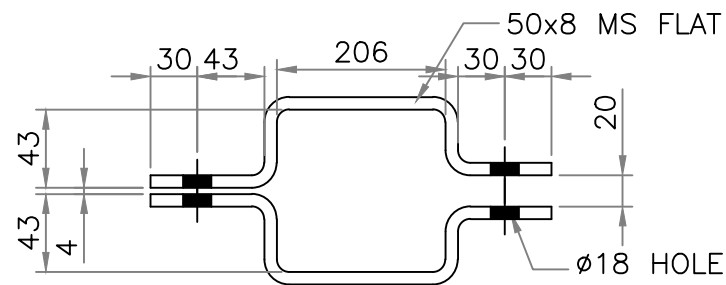
BILL OF MATERIAL							
ITEM NO.	DESCRIPTION	SIZE	MATERIAL	LENGTH MM	KG./mtr.	QTY.	TOTAL Wt. KG.
001	9m/300 KG. PSC POLE					AS REDQ.	
900	CLAMP FOR PSC POLE (11KV SUPPORT)	50x8	MS	406	3.14	2 NOS.	2.549
901	CLAMP FOR PSC POLE (LT LINE)	50x8	MS	414	3.14	2 NOS.	2.599
902	CLAMP FOR STRUT POLE	50x8	MS	425	3.14	2 NOS.	2.669
	NUTS & BOLT	M16		65	0.164	3 NOS.	0.492
	SPRING WASHER	M16		3.5 THK.	0.009	3 NOS.	0.027
	PLAIN WASHER	M16		3 THK.	0.015	3 NOS.	0.045
						TOTAL	8.261



CLAMP FOR PSC POLE 900



CLAMP FOR PSC POLE LT LINE 901

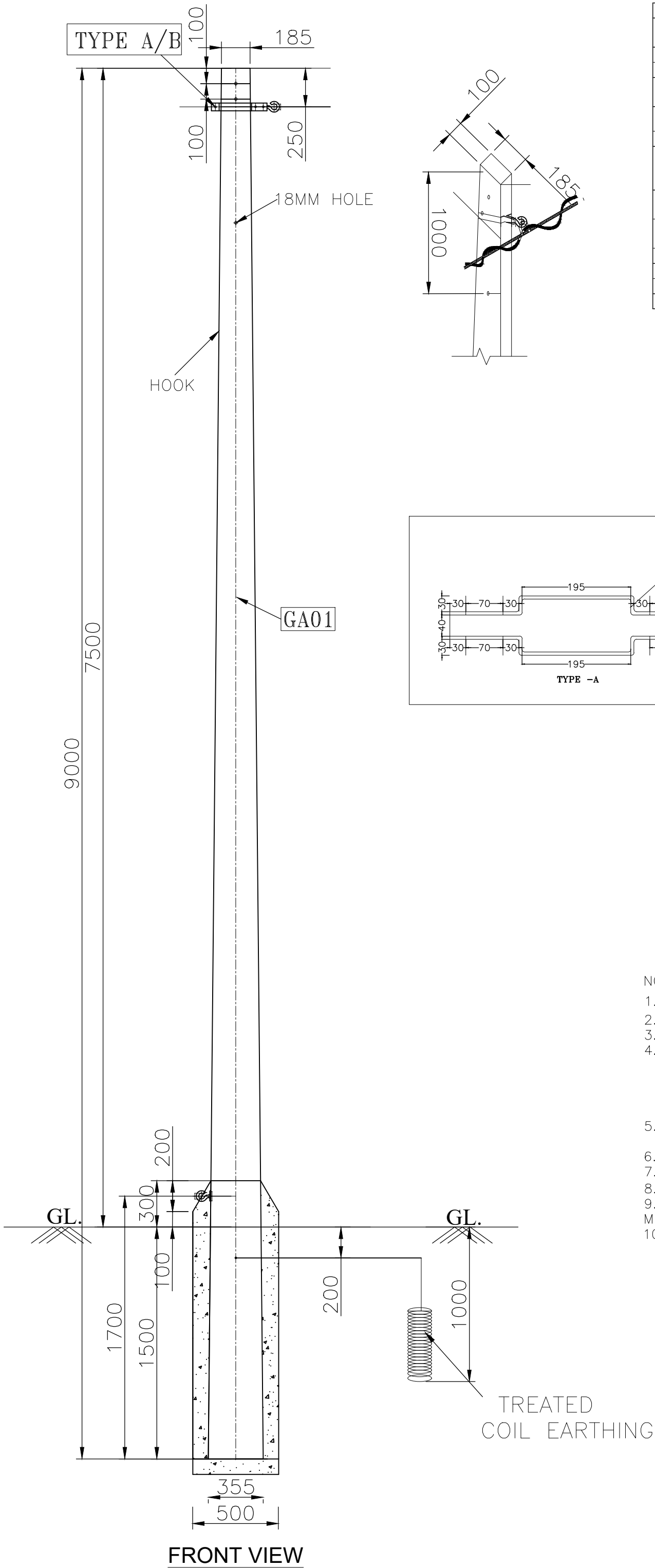


CLAMP FOR STRUT POLE 902

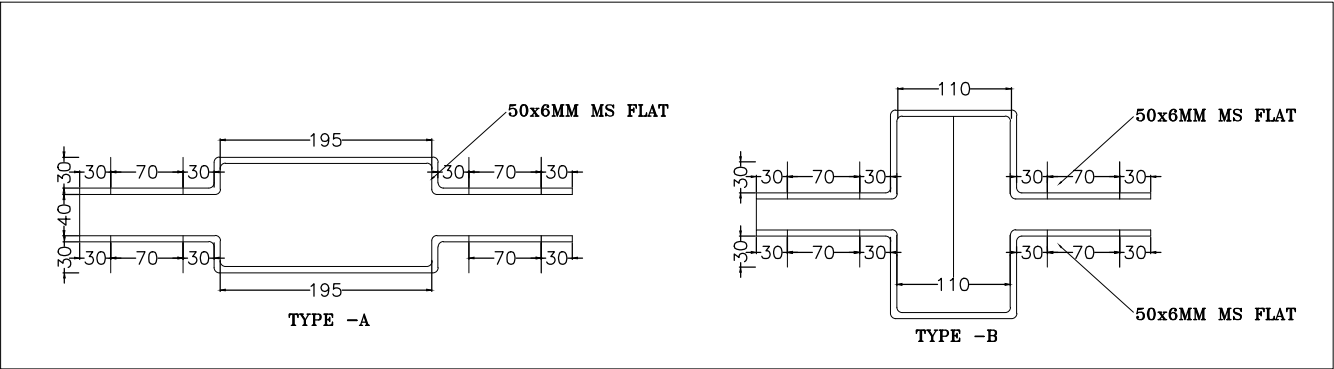
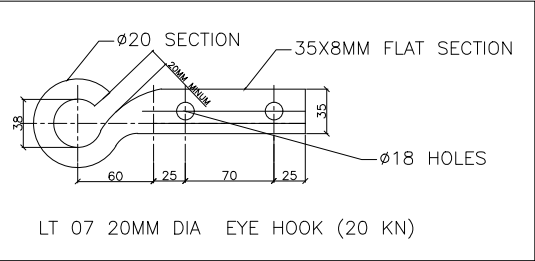
GENERAL NOTES:

- 1) ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED
- 2) MANUFACTURING TOLERANCE.
UPTO 50mm - ± 5%
51 TO 100mm - ± 4%
101 TO 300mm - ± 3%
ABOVE 300mm - ± 2%
- 3) ALL M.S. PARTS SHALL CONFORM TO IS:2062
- 4) ALL M.S. FABRICATED ITEMS SHALL BE HOT DIP GALVANISED AS PER IS:2629 & 4759
- 5) ALL THE ITEMS SHALL BE MARKED WITH ERECTION CODE.
- 6) WEIGHT MENTIONED IS FOR PACKING & FORWARDING PURPOSE ONLY.
- 7) ALL CLAMPS AND ANGLES SHALL CONFORM TO IS:SP6 PART-1.
ALL CHANNELS SHALL BE ISLC CHANNELS.

EPC:-		TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED			
TPCDDL TP CENTRAL ODISHA DISTRIBUTION LIMITED		SURVEY & TESTING AGENCY: IDAX CONSULTING & RESEARCH PVT. LTD Plot No.-5016, Duplex-E, Brundaban Enclave, VSS Nagar, Bhubaneswar - 751007, ODISHA			
PROJECT NAME:		DESIGN, ENGINEERING, SUPPLY, ERECTION AND COMMISSIONING OF 33/11 KV SUB-STATION			
DRAWING TITLE:		STRUT ARRANGEMENT FOR PSC POLE (9 MTR. 300KG)			
DRG. NO	JOB NO			SHEET	1/1
	PREPARED BY	REVIEWED BY	APPROVED BY	DATE	REVISION
	R.R.BEHERA	S. MOHANTY, PONRAJ C A	KHAJAN BHARDWAJ	08.01.25	00



BILL OF MATERIAL						
ERE. MARK	DESCRIPTION	QTY. (in Nos.)	Ref.Drawing No.			
GA01	9m/300 kg PSC Pole	1				
	Suspension clamp	1				
	8 SWG GI Eaeth Wire	1.8/0.1 8KG				
	Foundation	1				
	Coil Earthing	1				
ERE. MARK	DESCRIPTION	SECTION	LENGTH (in mm.)	QTY. (in Nos.)	Unit Wt.	Total Wt. (in Kg.)
TYPE A	LT Pole Clamp for fixing Eye hook		515	2	3.14	3.234
LT 07	LT Eye hook with nut , Spring washer and Flat washers	M16		1		0.956
TOTAL						4.19
1	Bolt & Nuts	M16	65	1		
2	Spring Washers	M16		1		
3	Flat Washers	M16		1		



- NOTE:—
1. All Dimentions are in MM unless otherwise specified.
 - 2.Manufacturing tolerance is as per IS:1852
 - 3.All M.S confirm to IS:2062.
 4. Manufacturing Tolerance as follows
Up to 50mm – ±5%
51 to 100mm– ±4%
101 to 300mm– ±3%
Above 300mm– ±2%
 5. All MS fabricated items shall be hot dip galvanised as per IS:2629
 - 6.All washers shall be electro galvanised .
 - 7.All MS items shall be marked with erection Mark.
 - 8.All MS items shall be of grade E250A (Fe410W).
 - 9.Pole earthing shall be connectedto spike type earthing using M12 bolt.
 10. Pole earthing shall be connected to eye hook at top.

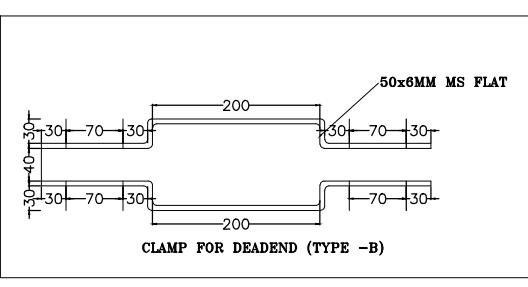
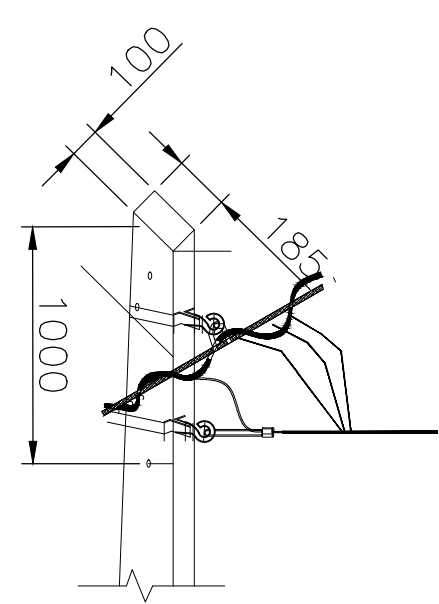
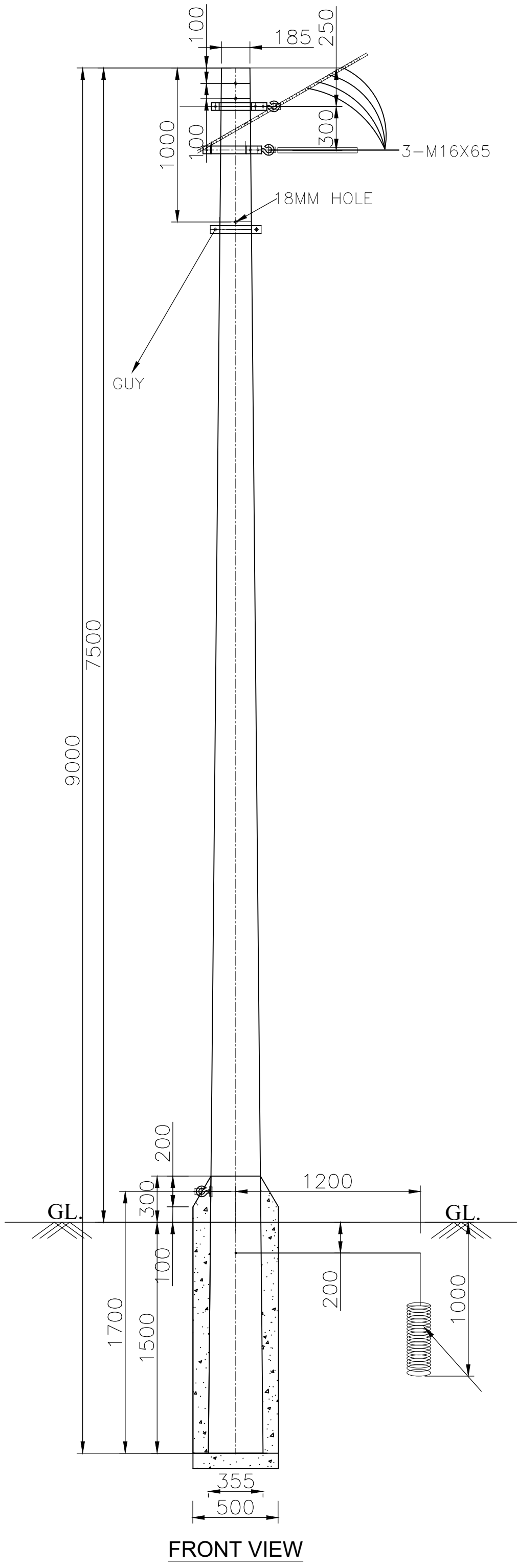
EPC:-

TPC^{ODL}

TP CENTRAL ODISHA DISTRIBUTION LIMITED

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DISTRIBUTION LIMITED



BILL OF MATERIAL						
ERE. MARK	DESCRIPTION	QTY. (in Nos.)	Ref.Drawing No.			
GA01	9m/300 kg PSC Pole	1				
	Suspension clamp	1				
	8 SWG GI Eaeth Wire	1.8/0.1 8KG				
	Foundation	1				
	Coil Earthing	1				
ERE. MARK	DESCRIPTION	SECTION	LENGTH (in mm.)	QTY. (in Nos.)	Unit Wt.	Total Wt. (in Kg.)
TYPE A	LT Pole Clamp for fixing Eye hook		515	2	3.14	3.234
TYPE B	LT Pole Clamp for fixing dead end		520	2	3.14	3.265
LT 07	LT Eye hook with nut , Spring washer and Flat washbers	M16		1		0.956
TOTAL						7.455
1	Bolt & Nuts	M16	65	2		
2	Spring Washers	M16		2		

- NOTE:—
1. All Dimentions are in MM unless otherwise specified.
 - 2.Manufacturing tolerance is as per IS:1852
 - 3.All M.S confirm to IS:2062.
 4. Manufacturing Tolerance as follows
Up to 50mm – ±5%
51 to 100mm– ±4%
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 5. All MS fabricated items shall be hot dip galvanised as per IS:2629
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 - 7.All MS items shall be marked with erection Mark.
 - 8.All MS items shall be of grade E250A (Fe410W).
 - 9.Pole earthing shall be connectedto spike type earthing using M12 bolt.
 10. Pole earthing shall be connected to eye hook at top.

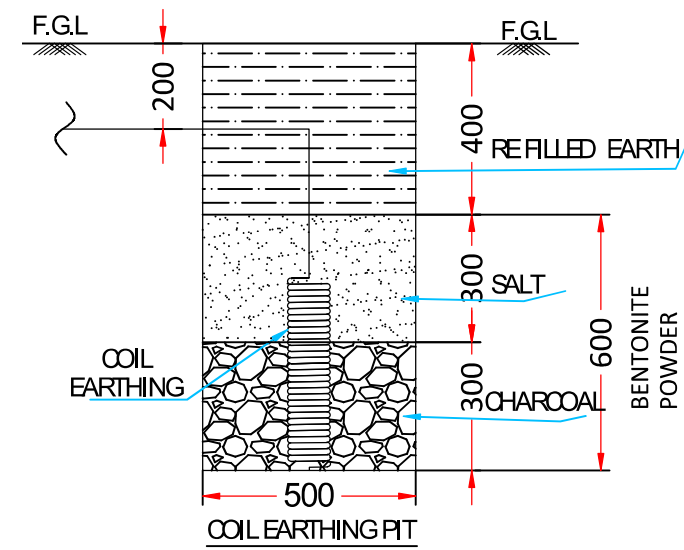
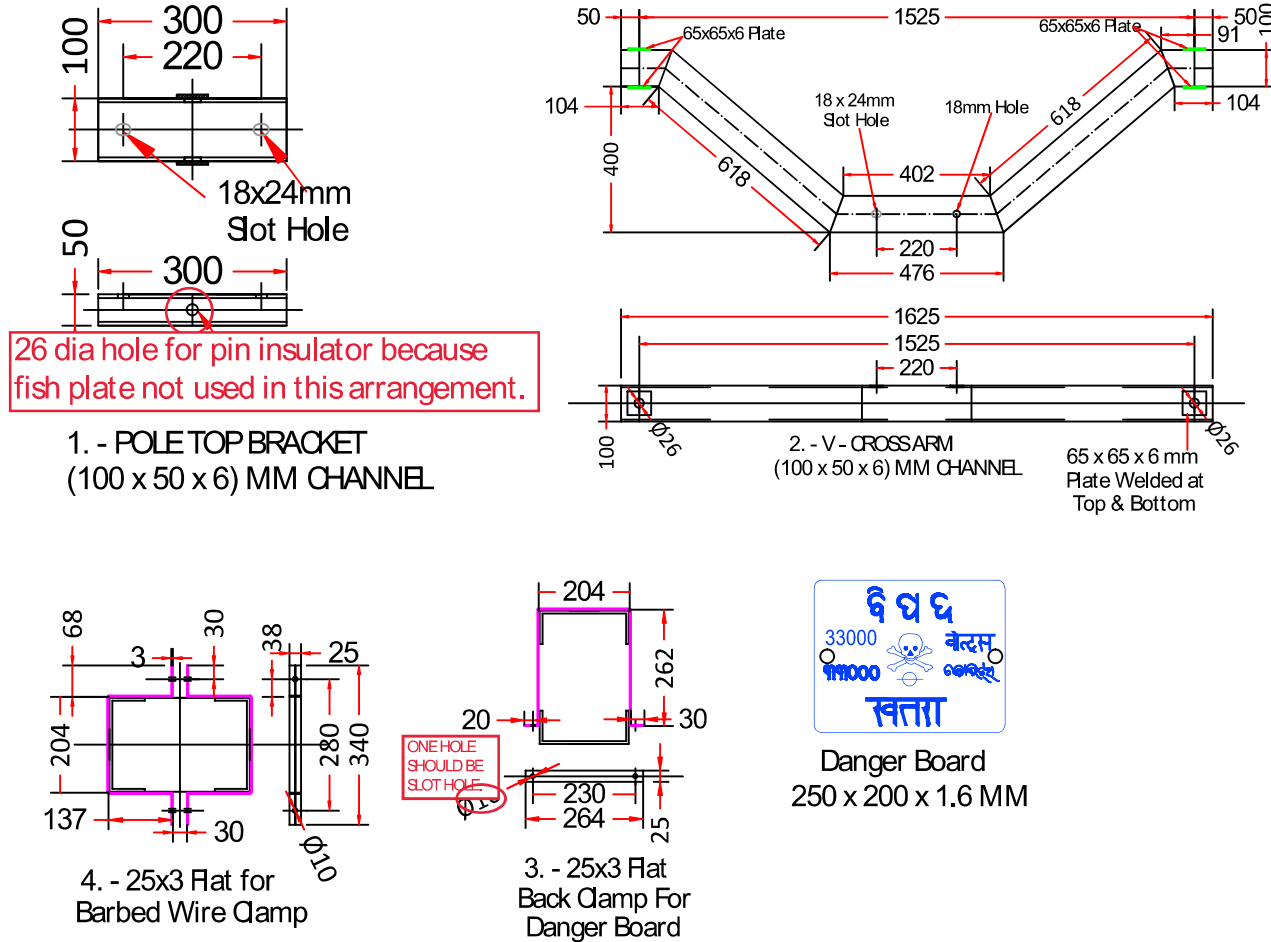
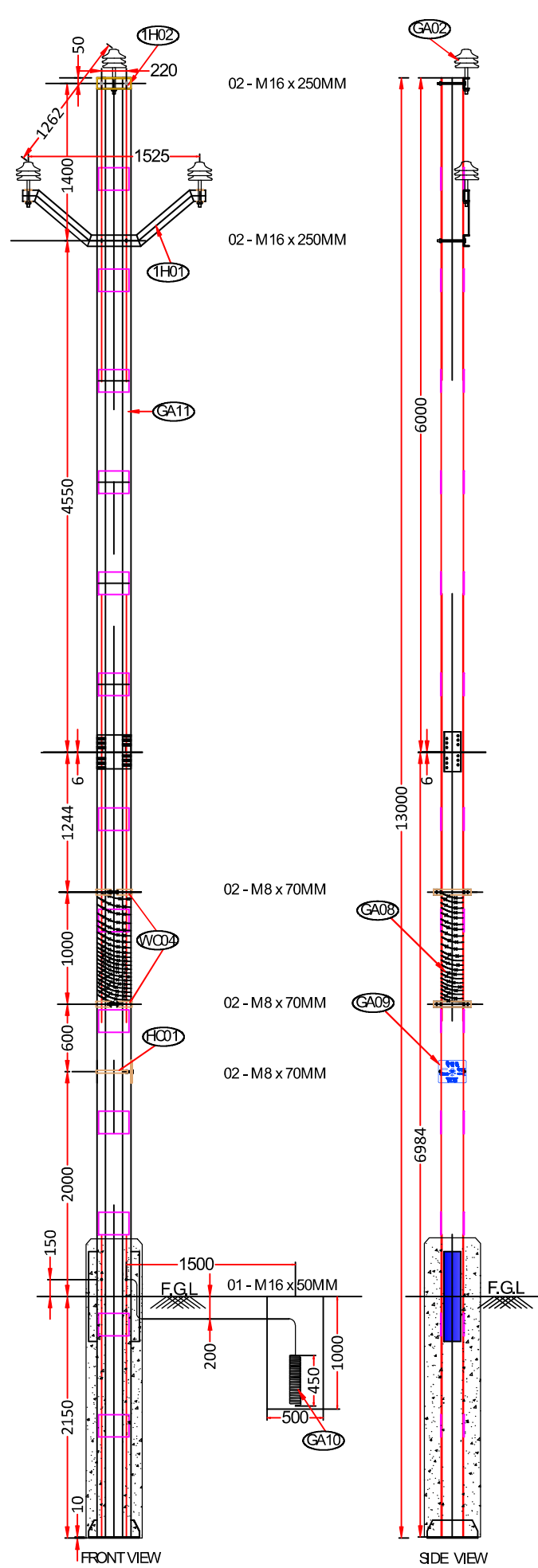
EPC:-

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BOM OF 33KV 13M HPOLE WITH V-CROSSARM									
SN	ERECTION CODE	DESCRIPTION	SECTION	MATERIAL	LENGTH	QTY. In Nos.	WT KG/ MTR	WT / ITEM IN KG	TOTAL WT. IN KG
1	1H02	POLE TOP BRACKET	100 X 50 X 6	CHANNEL	300	1	9.56	2.868	2.868
2	1H01	V- CROSS ARM	100 X 50 X 6	CHANNEL	1920	1	9.56	18.355	18.355
		WELDED PLATE FOR V-CROSS ARM	65 X 6	FLAT	65	4	3.06	0.199	0.796
3	HC01	BACK CLAMP FOR DANGER BOARD	25 x 3	FLAT	794	1	0.59	0.468	0.468
4	WC04	CLAMP FOR BARBED WIRE	25 x 3	FLAT	620	4	0.59	0.365	1.46
TOTAL WEIGHT IN KGS									23.947

BILL OF MATERIAL				
SN	ERECTION CODE	DESCRIPTION	SECTION	QTY.
1	GA11	H-POLE-13M , 200 x 75,55.6 KG/ MTR		1 NO.
2	GA02	33KV PIN INSULATOR WITH H/W FITTINGS		3 NOS
3	GA08	BARBED WIRE		3 KG/POLE
4	GA09	DANGER BOARD		1 NO.
5	GA10	COIL EARTHING		1 NO.

REQUIRED NUT & BOLTS										
SN	NUT & BOLTS	LENGTH (MM)	V - CROSS ARM	POLE TOP BRACKET	DANGER BOARD & BARBED WIRE	JOINTING PLATE	COIL EARTHING	TOTAL IN (NOS)	UNIT WT/ KG	TOTAL WT. IN KG
1	M 16	250	2	2				4	0.424	1.696
2	M 16	50					1	1	0.134	0.134
3	M 8	70			6			6	0.033	0.198
4	M 16	FLAT WASHER						10	0.014	0.14
5	M 16	SPRING WASHER						10	0.009	0.09
6	M 8	FLAT WASHER						12	0.005	0.060
7	M 8	SPRING WASHER						12	0.002	0.024
								TOTAL WEIGHT IN KGS		2.342

- NOTES**
- ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE SPECIFIED
 - ALL HOLES ARE 18MM DIA UNLESS OTHERWISE SPECIFIED.
 - ALL SLOTTED HOLES ARE 24MM LONG 18MM WIDTH UNLESS OTHERWISE SPECIFIED.
 - MANUFACTURING TOLERANCE IS AS PER IS 1852.
 - ALL MS PARTS SHALL CONFIRM TO IIS 2062.
 - ALL MS FABRICATED ITEM SHALL BE HOT DIP GALVANISED AS PER IS 4759.
 - WEIGHT MENTIONED IN BOM ARE BEFORE PUNCHING HOLES
 - ALL NUT/ BOLTS SHALL BE CONFORMING TO CLASS 5.6 OF IS 1367.
 - PLAIN WASHER SHALL BE AS PER IS 2016 & SPRING WASHER SHALL BE AS PER IS 3063

TPCDDL
TP CENTRAL ODISHA DISTRIBUTION LIMITED

TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.

PROJECT: Engineering, supply, erection and commissioning of Associated 33 kV & 11 kV Lines of 33/11 kV Primary Sub-Stations and 33kV Independent Lines under Phase-IV of Odisha Distribution System Strengthening Project (ODSSP) Scheme on turnkey contract basis (Package-B)

REF PO NO: RC-4600001345 Date:11.09.2023 (PKG.A) & RC-4600001346 Date:11.09.2023 (PKG.B)

TITLE:	33KV LINE SINGLE POLE WITH V- CROSS ARM (H POLE ,13M, 200 x 75, 55.62KG/ MTR)
SCALE	DRAWING NO.
	PD-1346-TPCDDL- COM_LINE_8002

SHT. NO.
1 OF 1

12 11 10 9 8 7 6 5 4 3 2 1

13000

11000

1500

180 HOLE FOR COIL EARTHING

COIL EARTHING

RCC 1:1.5:3 CONCRETE 500x500

75(PADDING)

33KV LINE WITH WPB SINGLE POLE STRUCTURE

1725

1500

180 HOLE FOR COIL EARTHING

COIL EARTHING

RCC 1:1.5:3 CONCRETE 500x500

75(PADDING)

11KV LINE WITH WPB SINGLE POLE STRUCTURE

BOM OF GI ITEMS OF 33KV ROAD CROSSING ON DOUBLE POLE								
ITEM NO	DESCRIPTION(mm)	SECTION	MATERIAL	LENGTH(m m)	QTY (nos)	WT (KG/MTR)	WT/ITEM (KG)	TOTAL WT (KG)
1	COIL EARTHING		GI	450	1	0	0	0

GL

200

400

RE FILLED EARTH

300

SALT

300

CHARCOAL

500

COIL EARTHING PIT

OR

GL

200

400

RE FILLED EARTH

600

BENTONITE POWDER

500

COIL EARTHING PIT

CONTRACTOR

TPCODL
TP CENTRAL ODISHA DISTRIBUTION LIMITED

TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.

PROJECT: SITC of 33/11 kV Primary Sub-Stations and Associated 33kV & 11kV Lines in Odisha State

REF PO NO:

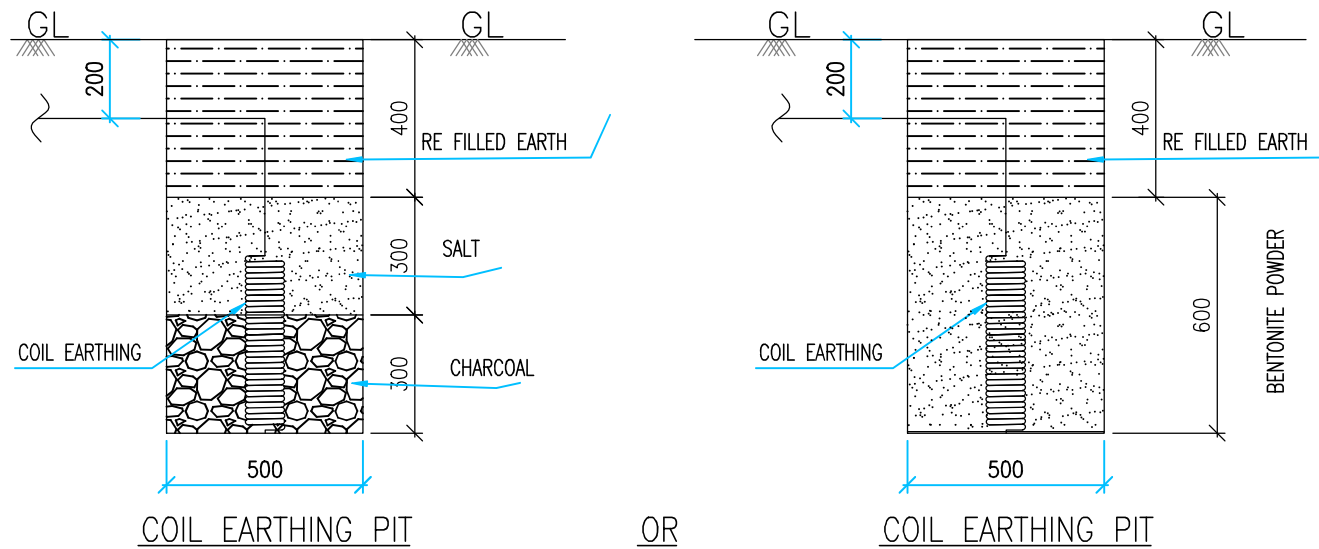
TITLE: COIL EARTHING FOR (WPB 160X160-13M & 11M 30.44KG/MTR)

DATE	SCALE	DRG. NO.	REV. NO.
17-11-23	NTS	PD-1346-TPCODL-COM-LINE-8023	00
	A3		1 OF 1

REV.NO.	DATE	DESCRIPTION	DRAWN	DESIGN	CHKD.	CLEARED BY	APPD	DATE
00	17-11-23	FOR APPROVAL						

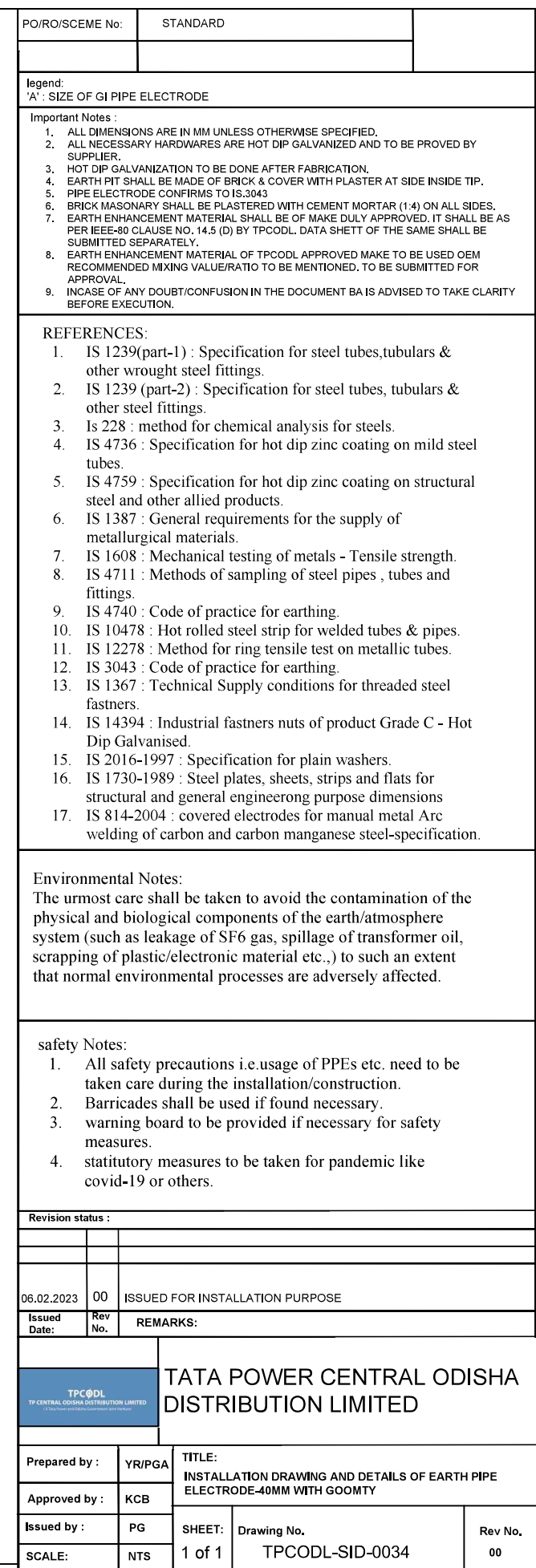
12 11 10 9 8 7 6 5 4 3 2 1


BOM OF GI ITEMS OF 33KV ROAD CROSSING ON DOUBLE POLE								
ITEM NO	DESCRIPTION(mm)	SECTION	MATERIAL	LENGTH(m m)	QTY (nos)	WT (KG/MTR)	WT/ITEM (KG)	TOTAL WT (KG)
1	COIL EARTHING		GI	450	1	0	0	0



00	17-11-23	FOR APPROVAL											
REV.NO.	DATE	D E S C R I P T I O N	DRAWN	DESIGN	CHKD.	C L E A R E D B Y				APPD	DATE		

CONTRACTOR			
<div>TPCODL</div> <div>TP CENTRAL ODISHA DISTRIBUTION LIMITED</div>		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
PROJECT: SITC of 33/11 kV Primary Sub-Station and Associated 33kV & 11kV Lines in Odisha State			
REF PO NO:			
TITLE: COIL EARTHING FOR (WPB 160X160-13M & 11M 30.44KG/MTR)			
DATE	SCALE	DRG. NO.	REV. NO.
17-11-23	NTS	PD-1346-TPCODL-COM-LINE-8023	00
	SIZE A3		SHT. NO. 1 OF 1



PO/RO/SCHEME No.:		STANDARD	
legend: A' : SIZE OF GI PIPE ELECTRODE			
Important Notes : <ol style="list-style-type: none"> ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. ALL NECESSARY HARDWARES ARE HOT DIP GALVANIZED AND TO BE PROVED BY SUPPLIER. HOT DIP GALVANIZATION TO BE DONE AFTER FABRICATION. EARTH PIT SHALL BE MADE OF BRICK & COVER WITH PLASTER AT SIDE INSIDE TIP. PIPE ELECTRODE CONFIRMS TO IS:3043 BRICK MASONARY SHALL BE PLASTERED WITH CEMENT MORTAR (1:4) ON ALL SIDES. EARTH ENHANCEMENT MATERIAL SHALL BE OF MAKE DULY APPROVED. IT SHALL BE AS PER IEEE-80 CLAUSE NO. 14.5 (D) BY TPCODL. DATA SHEET OF THE SAME SHALL BE SUBMITTED SEPARATELY. EARTH ENHANCEMENT MATERIAL OF TPCODL APPROVED MAKE TO BE USED OEM RECOMMENDED MIXING VALUE/RATIO TO BE MENTIONED, TO BE SUBMITTED FOR APPROVAL. IN CASE OF ANY DOUBT/CONFUSION IN THE DOCUMENT BA IS ADVISED TO TAKE CLARITY BEFORE EXECUTION. 			
REFERENCES: <ol style="list-style-type: none"> IS 1239(part-1) : Specification for steel tubes,tubulars & other wrought steel fittings. IS 1239 (part-2) : Specification for steel tubes, tubulars & other steel fittings. Is 228 : method for chemical analysis for steels. IS 4736 : Specification for hot dip zinc coating on mild steel tubes. IS 4759 : Specification for hot dip zinc coating on structural steel and other allied products. IS 1387 : General requirements for the supply of metallurgical materials. IS 1608 : Mechanical testing of metals - Tensile strength. IS 4711 : Methods of sampling of steel pipes , tubes and fittings. IS 4740 : Code of practice for earthing. IS 10478 : Hot rolled steel strip for welded tubes & pipes. IS 12278 : Method for ring tensile test on metallic tubes. IS 3043 : Code of practice for earthing. IS 1367 : Technical Supply conditions for threaded steel fastners. IS 14394 : Industrial fastners nuts of product Grade C - Hot Dip Galvanized. IS 2016-1997 : Specification for plain washers. IS 1730-1989 : Steel plates, sheets, strips and flats for structural and general engineering purpose dimensions IS 814-2004 : covered electrodes for manual metal Arc welding of carbon and carbon manganese steel-specification. 			
Environmental Notes: The utmost care shall be taken to avoid the contamination of the physical and biological components of the earth/atmosphere system (such as leakage of SF6 gas, spillage of transformer oil, scrapping of plastic/electronic material etc.) to such an extent that normal environmental processes are adversely affected.			
safety Notes: <ol style="list-style-type: none"> All safety precautions i.e.usage of PPEs etc. need to be taken care during the installation/construction. Barricades shall be used if found necessary. warning board to be provided if necessary for safety measures. statitutory measures to be taken for pandemic like covid-19 or others. 			
Revision status :			
06.02.2023	00	ISSUED FOR INSTALLATION PURPOSE	
Issued Date:	Rev No.	REMARKS:	
 TPC ODL <small>TP CENTRAL ODISHA DISTRIBUTION LIMITED</small> <small>(A COMPANY INCORPORATED IN INDIA)</small>		TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED	
Prepared by :	YR/PGA	TITLE:	
Approved by :	KCB	INSTALLATION DRAWING AND DETAILS OF EARTH PIPE ELECTRODE-40MM WITH GOOMTY	
Issued by :	PG	SHEET:	Rev No.
SCALE:	NTS	1 of 1	TPCODL-SID-0034
			00