



CORRIGENDUM-III

Ref: Tender Enquiry No.: TPCODL/P&S/1000000049/21-22 /Corrigendum/003

Dated: 05.06.21

Corrigendum to open Tender No. TPCODL/P&S/1000000049/21-22 for Rate Contract for 2 years for 33KV, 11kV and 1.1 kV associated works (Construction / Augmentation) all over TPCODL area for releasing new HT & LT connection & other Misc. Distribution Electrical works

Sl. No.	Clause No.	Old Provision	Revised Provision
1	7	Special Terms and Conditions	Additional Terms and Condition are attached as per Annexure-1A
2	Annexure -1	Price Schedule	Revised price schedule is attached as Annexure-1 with additional Line Items
3	1.4	Mandatory Documents Clause No. 1.4.1 to 1.4.9	Mandatory Documents Clause No. 1.4.1 to 1.4.9 shall be valid, except 1.4.3. b, c, d, e, f, g, and 1.4.4. Bidder shall consider this while submitting their bid documents.
4	-	Technical Specification	Additional Specification and Drawings are attached as per Annexure-1B
5		Technical Specification	Approved manufacturer list attached as Annexure-1C
6	-	Price Schedule	Form for Preference of Circle is attached as Annexure-1D

All other terms and conditions of the above tender will remain same.

By Order

Chief - (Procurement & Store), TPCODL

Annexure-1A

Additional Special T&Cs to Tender No. TPCODL/P&S/100000049/21-22

1. As per clause 1.7 (QR) of our Tender Spec, Bidder has to furnish a copy of valid Electrical License of Odisha Govt. within 6 months after award of Contract. Valid Electrical License issued by Delhi Govt. may not be suitable for taking up Electrical Works in Odisha. Hence the bidder has to furnish an undertaking to furnish a copy of Valid HT Electrical License issued by the ELBO, Govt. Of Odisha within 6 months of award of Contract enclosing a copy of such application with copy of challans for payment of required fees to appropriate authority in Odisha. This is a statutory requirement for any Electrical Contractor to work in Odisha.
2. The type tests specified in TPCODL specifications should have been carried out within five years prior to the date of opening of technical bids and test reports are to be submitted along with the bids. If type tests carried out are not within the five years prior to the date of bidding, the bidder will arrange to carry out type tests specified, at his cost. The decision to accept/ reject such bids rests with TPCODL. If there is no design Change the Type test report validity will be 10Years
3. The work shall be executed as per TPCODL Standard T&Cs, Specification, drawing.
4. Permissions from road owning agencies & statutory clearances(Forest/NHAI/BMC/JAL Board/GAS etc.) permission shall be taken by BA, however when required TPCODL will assist to achieve it .
5. There shall be no provision for price escalation after issue the RO even if there is delay in the project due to ROW permission.
6. After commissioning of the complete system and final approval of Electrical Inspector & compliance to punch points observed to the satisfaction of Projects as per statutory requirements, system shall be handed over to TPCODL. In case taking over by TPCODL is delayed because of reasons not attributable to BA, taking over certificate will be issued by TPCODL & Retention money will be released, if any. It would be considered to be deemed taking over by TPCODL after fully compliance by bidder to all applicable successful testing & compliance to Inspections carried out to the satisfaction of TPCODL Projects & further taking over is pending due to reasons attributable to TPCODL beyond one-month time. However, Retention amount shall be cleared after 03 months at the option of bidder after successful Pre commissioning & EI clearance subject to fulfilling of other terms of Tender (i.e. Submission of PBG etc.) & submission of undertaking from bidder to provide fullest support in future at the time of commissioning.
7. For each issued RO the following will be the guidelines of completion period: -
 - a. Within 10 days BA will Survey the site completely and prepare the drawing. BA has to submit the drawing for approval to TPCODL immediately after the survey.
 - b. After approval of drawing, Installation/Refurbishment of complete PMSS/Plinth Mounted SS with any rating of transformer/augmentation of DT, including HT/LT line extension up to five pole till consumer premises. Should be done within 3 nos. of outages, 15 days duration. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.

- c. After approval of drawing, Installation of new 11KV & 33KV overhead line with bare conductor /HT ABC: Up to 500 circuit meters till consumer premises – 15 days. For every 500 circuit meters thereafter - 7 additional days. . If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- d. After approval of drawing, Refurbishment/Re-string of Conductor of old 11KV & 33KV overhead line with bare conductor /HT ABC: Up to 1000 circuit meters with replacement of 5 Poles till consumer premises - 15 days with three outages of 8 Hours of each.In case outage duration is less than 8 hours, numbers of outage will be increase. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- e. After approval of drawing, Laying of HT/LT U/G cable, Feeder pillar installation in trench/ Trenchless duct including making of trench/trenchless duct till consumer premises: Up to 500 circuit meters – 20 days. For every 500 circuit meters thereafter - 7 additional days. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable. IN case site is not clear then time will be start from date of clearance or permission received.
- f. After approval of drawing, Installation of new LT overhead line with bare conductor /LT ABC till consumer premises: Up to 500 circuit meters - 10 days with three outages. For every 500 circuit meters thereafter - 7 additional days. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- g. Refurbishment/Re-string of Conductor of old LT overhead line with bare conductor /LT ABC with: Up to 1000 circuit meters with replacement of 5 Poles - 15 days with three outages. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- h. After approval of drawing, Installation of the 3 /4/5 RMU Indoor/ outdoor including cable connection - Indoor type RMU - 7 days. Outdoor type RMU - 10 days. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- i. After approval of drawing, Augmentation of Power Transformer including HT line extension by O/H or U/G cable up to 150 mtr, Should be done within 3 nos. Of outages, 15 days duration. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable.
- j. After approval of drawing, Installation of Load Break Switch including HT line extension by O/H or U/G cable up to 150 Mtr, Should be done within 3 nos. Of outages, 15 days duration. If TPCODL materials is not available in TPCODL, then time will be start after receiving of TPCODL materials if applicable
- k. In case any RO covers two or more categories of activities mentioned herein-above, the longest completion period amongst all the categories of activities covered thereunder, shall be treated as completion period for the RO.

8. It is however to be noted that in case of any urgency, TPCODL reserves the right to reduce the above mentioned timelines further as per the requirement. The decision of TPCODL in this regard shall be final and binding on the bidder.. Best effort delivery shall be agreed between Bas and TPCODL, However the LD clause shall not be applicable. The Bidder has to purchase the material from TPCODL Approved Manufacturer list as per Annexure-1C, In case bidder want to purchase material from any other make/vendor it is subjected to TPCODL prior approval.
9. TPCODL Team will do the quality inspection of all the BA Supplied Material against the RO. TPCODL Team will reject the material if quality & standard of the material found not satisfactory.
10. Bidder purchasing finished materials from vendor, vendor has to produce all purchased raw material Invoices to TPCODL team during quality Inspection at Manufacturer factory.
11. Bidder has to produce all purchased material Invoices to TPCODL team during quality Inspection at site/BA Store in TPCODL Pan area. TPCODL Team will reject the material if quality & standard of the material found not satisfactory.
12. TPCODL has reserve the rights to do the material Inspection at OEM premises for any purchased material.
 - a. All the materials shall be inspected as per relevant IEC's or IS or equivalent standards at the Business Associate manufacturing/factory works only. They shall give the advance notice in writing about the place of Inspection and or testing at least 10 days before the schedule date on which the materials will be ready for Inspection and or Testing. Materials purchase other than the approved manufacturer is not allowed in the contract.
 - b. Materials procurement other than the approved manufacturer, permission shall be obtained by the BA from TPCODL-Engineering & Quality Group in writing prior to the Release Order. After obtaining the permission in writing from TPCODL-Engineering & Quality Group, the BA is allowed to purchase the materials.
 - c. The BA shall submit all GTP, drawings, documents and type test reports, QAP, Name of Sub vendor, samples (as applicable) etc. for all the Supply of Material to the engineer in charge within 7 days of award of RO/RC for approval. If the drawings & GTP will be as per the technical specifications, the competent authority of TPCODL will return the drawings & documents to the contractor marked with "Approved" stamp.
 - d. Bidder has to perform pre-commissioning Testing on the equipment at Site wherever applicable as per TPCODL Standard without any price Implication.
 - e. BA will deployed the adequate numbers of competent site engineers, Supervisors, and skilled and semi-skilled person to complete the execution of project with Quality, safety and on time.
 - f. BA will deploy Safety In charge in each division to ensure safety, monitoring the safety

environment at site during the execution.

g. If BA will deploy the Subcontractor. Before deployment, BA will submit the details of subcontractor and their team member's to Engineer in charge. Engineer in charge will check competency of team members (Engineers/Supervisor/Skilled person/Semi skilled person and Safety tools). After approval by engineer in charge, subcontractor will be engage in the execution of the work.

h. BA must comply all BA legal cell compliance within 15days of receiving of the PO.

13. Bidder shall quote for each Circle; however, they can submit their preference of Circle in format prescribed as Annexure-1D. While evaluation TPCODL shall consider their preference while finalization of the contract. Decision of TPCODL shall be final while allocation/ issuing the Rate Contracts. If any Bidder fails to start the work, TPCODL reserves the right to forfeiture of EMD, submitted with the Bid Documents.

Sl. No.	Short Text	Long Text	UOM	Cir-1 (Qty)	Cir-2 (Qty)	Cir-3 (Qty)	Cir-4 (Qty)	Cir-5 (Qty)	Unit Rate (Without GST)
1	Installation of WPB 160 X160, 11Mtr pole	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)x1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2,000	2,000	2,000	2,000	2,000	
2	Installation of WPB 160X 160 , 13Mtr pol	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)x2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2,000	2,000	2,000	2,000	2,000	

3	Installation of H Pole ,14Mtr,	Installation/Erection of 14 Mtr.H Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and coupling. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and coupling and earthing as per TPCODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)X2300(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	400	400	400	400	400	
4	Installation of PSC pole , 9Mtr	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPCODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	2,400	2,400	2,400	2,400	2,400	

5	Installation of RS Joist 116 x 100, 9Mtr	Installation/Erection of (GI coated 116X 100mm WPB (9 Mtr long) (23 kg Per meter) (Each 207 kg)) Pole including loading and unloading, transportation from site/tent upto 6 Kms., excavation, fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (Angle installation), refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of 1:1:5:3 cement concrete, and Painting of Pole (In Black & Yellow Strips/Zebra) .As	EA	400	400	400	400	400	
6	Installation of RS Joist 116 x 100, 11Mtr	Installation/Erection of (GI coated 116X 100mm WPB (13 Mtr long) (23 kg Per meter) (Each 253kg)) Pole including loading and unloading, transportation from site/tent upto 6 Kms., excavation, fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (Angle installation), refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of 1:1:5:3 cement concrete, and Painting of Pole (In Black & Yellow Strips/Zebra) .As	EA	400	400	400	400	400	
7	Supply & Inst of Coil Earthing to Pole	Supply and erection of earthing coil (8 SWG wire dia) along with 8 SWG Wire, Nut -bolt & other accessories to earth the pole as per TP Central Orissa Distribution Co. Ltd. Design .Scope of work also includes the excavation of earth upto 1.2 Mtr depth for erection of earthing coil and disposal of extra malba upto 150Mtr as EIC	EA	7,600	7,600	7,600	7,600	7,600	
8	Supply & Inst of V Cross Arm to 11KV Pole along with back clamp & Top	Supply and Installation of GI V cross arm suitable for RS JOIST/WPB POLE with Back clamp,F Clamp/Top Bracket(Top Channel) along with all required other	EA	2,000	2,000	2,000	2,000	2,000	
9	Supply & Inst Top Bracket for 11KV Pole	Supply and Installation of GI Top bracket(120mm length of 100X50X6 mm channel and other suitable size), along	EA	2,000	2,000	2,000	2,000	2,000	
10	Sply & Inst back Clamp for V Cross 11KV	Supply and Installation of GI Back clamp suitable for PSC/RS JOIST/WPB/H POLE along with all required other	EA	2,000	2,000	2,000	2,000	2,000	

11	Sply & Inst V Cross Arm for 33KV Pole	Supply and Installation of GI V cross arm, Back clamp, F Bracket(Top Channel) suitable for RS Joist /WPB pole along with all required other accessories excluding nut-bolt etc. on HT pole for 33kv Line as per Drawing	EA	2,000	2,000	2,000	2,000	2,000	
12	Sply& Inst Top bracket for 33KV Pole	Supply and Installation of Top bracket(120mm length of 100X50X6 mm channel and other suitable size)(along	EA	2,000	2,000	2,000	2,000	2,000	
13	Sply & Inst Back Clamp V cross Arm, 33KV	Supply and Installation of GI Back clamp, along with all required other accessories excluding nut-bolt etc. on HT	EA	2,000	2,000	2,000	2,000	2,000	
14	Sply & Inst 11KV poly Insulator, 5KN	Supply and Installation of 11KV 5KN Polymeric Pin Insulator as per TPCODL Specification-drawing	EA	6,000	6,000	6,000	6,000	6,000	
15	Sply &Inst 11KV disc poly Insulator,70KN	Supply & Installation of 11kv,70KN Polymeric Disc Insulator B&S type upto 125 sq mm ACSR conductor as per TP Central Orissa Distribution Co. Ltd. Specification	EA	1,200	1,200	1,200	1,200	1,200	
16	Sply & Inst 33KV poly Insulator, 10KN	Supply and Installation of 33kv,10KN Polymeric Pin Insulator as per TPCODL specification-drawing	EA	6,000	6,000	6,000	6,000	6,000	
17	Sply &Inst 33KV disc poly Insulator,90KN	Supply & Installation of 33kv,90KN polymeric Disc Insulator for 80,100 148 Sq mm AAAC/ACSR Conductor with nuts and bolts as per TP Central Orissa Distribution Co. Ltd. Specification	EA	1,200	1,200	1,200	1,200	1,200	
18	Sply &Inst 33KV disc poly Insulator,120KN	Supply & Installation of 33kv, 120KN polymeric Disc Insulator for 148/232 Sq mm AAAC/ACSR Conductor with nuts and bolts as per TP Central Orissa Distribution Co. Ltd. Specification	EA	140	140	140	140	140	

19	Sply & Inst of 11KV Complete HT Stay set	Supply and Fixing of HT(11KV) Complete Stay Set(Complete stay set includes supply and erection of Turn Buckle Assembly , Stay Rod , Stay plate, Stay Insulator,Tension screw(GI SIZE 750X20MM) with Stay clamps and excludes Nuts & bolts and stay wire,)as per TP Central Orissa Distribution Co. Ltd. specifications and drawing. The scope of work includes excavation for all type of soils/RCC/Bituminous/ Rocky etc., breaking of asphalt, back filling removal & disposing of extra malba as per instruction of EIC etc. fabrication works required for stay set and providing and laying of cement concrete)with Civil foundation size (500mm x 500mmx800mm) for Stay Set. cement concret foundation 1:2:4 size using 20mm BHG metal with all labour and Civil materials (Cement, Sand, stone,etc). nut-bot etc all consumable items.Note:- Excavation of earth will be done of size	EA	2,300	2,300	2,300	2,300	2,300	
20	Sply & Inst of 33KV Complete HT Stay set	Supply and Fixing of HT(33KV) Complete Stay Set(Complete stay set includes supply and erection of Turn Buckle Assembly , Stay Rod , Stay plate, Stay Insulator,Tension screw(GI SIZE 750X20MM) with Stay clamps and excludes Nuts & bolts and stay wire,)as per TP Central Orissa Distribution Co. Ltd. specifications and drawing. The scope of work includes excavation for all type of soils/RCC/Bituminous/ Rocky etc., breaking of asphalt, back filling removal & disposing of extra malba as per instruction of EIC etc. fabrication works required for stay set and providing and laying of cement concrete)with Civil foundation size(500mm x 500mmx800mm) for Stay Set. cement concret foundation 1:2:4 size using 20mm BHG metal with all labour and Civil materials (Cement, Sand, stone,etc). nut-bot etc all consumable items.Note:- Excavation of earth will be done of size	EA	2,300	2,300	2,300	2,300	2,300	

21	Sply & Inst of Complete LT Stay set	Supply and Fixing of HT(1.1KV) Complete Stay Set(Complete stay set includes supply and erection of Turn Buckle Assembly , Stay Rod , Stay plate, Stay Insulator,Tension screw(GI SIZE 750X20MM) with Stay clamps and excludes Nuts & bolts and stay wire,) as per TP Central Orissa Distribution Co. Ltd. specifications and drawing. The scope of work includes excavation for all type of soils/RCC/Bituminous/ Rocky etc., breaking of asphalt, back filling removal & disposing of extra malba as per instruction of EIC etc. fabrication works required for stay set and providing and laying of cement concrete)with Civil foundation size(500mm x 500mmx800mm) for Stay Set. cement concret foundation 1:2:4 size using 20mm BHG metal with all labour and Civil materials (Cement, Sand, stone,etc). nut-bot etc all consumable items.Note:- Excavation of earth will be done of size	EA	2,200	2,200	2,200	2,200	2,200	
22	Sply &InstGI PIPE Earthing 40 Dia,3Mtr	Supply & Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TP Central Orissa Distribution Co. Ltd. specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Earth Electrode, Salt, Charcoal, Nuts-Bolt ,40mm dia 3 Mtr GI pipe & PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba.	EA	1,200	1,200	1,200	1,200	1,200	
23	Sply & Inst 40x6mm GI Flat for earthing	Supply & Installation of 40x6mm/50X6mm GI flat for earthing. Scope of work also fabrication,modification of GI flat.	KG	4,000	4,000	4,000	4,000	4,000	
24	Supply & Installation of HT Danger Boar	Supply & Installation of HT Danger Board with clamp(GI Flat 25X3 mm), nut & bolt as per TP Central Orissa Distribution Co. Ltd. specification	EA	4,000	4,000	4,000	4,000	4,000	

25	Sply&Inst of GI barbed wire anticlimbing for RSJ Pole	Supply & Installation of Barbed Wire and two set clamp(25x3mm) for fixing the barbed wire at top part and bottom part (to avoid the climbing at pole) for 11Mtr/13 Meter pole as per TP Central Orissa Distribution Co. Ltd. specification and drawing.	EA	12,000	12,000	12,000	12,000	12,000	
26	Sply&Inst of anticlimbing to PSC Pole	Supply & Installation of anticlimbing device (to avoid the climbing at pole) for 9Meter PSC pole as per TP Central Orissa Distribution Co. Ltd. specification and drawing.	EA	12,000	12,000	12,000	12,000	12,000	
27	SITC LT DB 10KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB of make ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS for 11/0.4kV,10kVA Single Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing .LTDB to be procured as per TPCODL	EA	40	40	40	40	40	
28	SITC of LTDB 16KVA TRF	Supply,Installation & Testing of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,16kVA Single/Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured	EA	40	40	40	40	40	
29	SITC of LTDB 25KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,25kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured as per	EA	40	40	40	40	40	

30	SITC of LTDB 63KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,63kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured as per	EA	40	40	40	40	40	
31	SPLY&Inst of LTDB of 100KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,100kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured as per	EA	40	40	40	40	40	
32	SPLY&Inst of LTDB of 250KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,250kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured as per TPCODL Specification.C34	EA	100	100	100	100	100	

33	SPLY&Inst of LTDB of 500KVA TRF	Supply Installation Testing & Comissioning of Outdoor Type Distribution Box with MCCB ABB/SCHNEIDER/L&T/ETON/HAVELLS/SIEMENS with busbar for 11/0.4kV,500kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. Specification. Fixing of Distribution Box with all necessary Support Ms channel.Cable connection with all Al Lug,vermin proofing,Tightness including civil foundation & earthing.LTDB to be procured as per TPCODL Specification & Approved Make.	EA	40	40	40	40	40	
34	Inst of LT ACB on existing foundation	Installation testing and commissioning of LT ACB 400 Amps with enclosure on existing structure excluding earthing	EA	80	80	80	80	80	
35	Supply & Inst of Dead end clamp along with Back Clamp upto 4CX70sqmm+1X70Sqmm +1x16	Supply & Installation of Dead end clamp all necessary nutbolt for fixing different size of LT ABC Cable Size 4X25+1X25+1X16 upto 4CX70+1X70+1X16.supply to be done as per TPCODL spec & approved Make- Raychem, SICAM,KSE etc	EA	800	800	800	800	800	
36	Sply& Inst Suspension clamp with I-Hook along with Back Clamp upto 4CX70sqmm+1X70Sqmm +1x16	Supply & Installation of suspension clamp with EYE HOOK or Suspension clamp with Bracket with all necessary nutbolt for fixing different size of LT ABC Cable Size 4X25+1X25+1X16 upto 4CX70+1X70+1X16 supply to be done as per TPCODL spec & approved Make-Raychem, SICAM,KSE etc	EA	2,400	2,400	2,400	2,400	2,400	
37	Supply & Inst of Dead end clamp for AB Cable 95Sqmm upto 150sqmm	Supply & Installation of Dead end clamp with all necessary nutbolt for fixing different size of LT ABC Cable Size from 4CX95+1X95+1X16 upto 4CX150+1X150+1X16 .supply to be done as per TPCODL spec & approved Make- Raychem, SICAM,KSE etc	EA	640	640	640	640	640	
38	Sply& Inst Suspension clamp with I-Hook along for AB Cable 95Sqmm upto 150sqmm	Supply & Installation of suspension clamp with EYE HOOK or Suspension Clamp with Bracket with all necessary nutbolt for fixing different size of LT ABC Cable Size 4CX95+1X95+1X16 from upto 4CX150+1X150+1X16.supply to be done as per TPCODL spec & approved Make-Raychem,KSE,SICAM etc	EA	640	640	640	640	640	

39	Sply&Inst Piercing connector Type-A	Supply & Installation of Insulated Piercing Connector Type A suitable for Main -50 to 150 sq mm & Branch 50 to 150Sqmm conductor as per TPCODL specification and drawing, Approved Make	EA	4,000	4,000	4,000	4,000	4,000	
40	Sply&Inst Piercing connector Type-B	Supply & Installation of Insulated Piercing Connector Type B suitable for Main 25 to 150 sq mm & Branch 6 to 35 Sqmm conductor as per TPCODL specification and drawing, Approved Make	EA	2,000	2,000	2,000	2,000	2,000	
41	Sply&Inst Piercing connector Type-C	Supply & Installation of Insulated Piercing Connector Type C suitable for Main 16 to 95 sq mm & Branch 1.5 to 16 Sqmm conductor as per TPCODL specification and drawing, Approved Make	EA	1,000	1,000	1,000	1,000	1,000	
42	Sply&Inst Piercing connector Type-D	Supply & Installation of Insulated Piercing Connector Type D suitable for Main 10 to 50 sq mm & Branch 1.5 to 10 Sqmm conductor as per TPCODL specification and drawing, Approved Make	EA	1,000	1,000	1,000	1,000	1,000	
43	Sply& Inst 8W LTDB for LT ABC	Supply & Installation of 8W LTDB for releasing power supply to consumer from LT ABC as per TPCODL specification and drawing, Approved Make (Sintex, Neelu, Jantoshan)	EA	400	400	400	400	400	
44	Sply& Inst 4W LTDB for LT ABC	Supply & Installation of 4W LTDB for releasing power supply to consumer from LT ABC as per TPCODL specification and drawing, Approved Make (Sintex, Neelu, Jantoshan)	EA	400	400	400	400	400	
45	Sply & Inst 11KV AB Switch 3P 200A	Supply & Installation of 11 kV 3- Phase 200A G.O/ AB Switch with Polymer Insulator on existing structure including alignment correction of all phases. Providing	EA	200	200	200	200	200	
46	Sply & Inst 11KV AB Switch 3P 400A	Supply & Installation of 11 kV 3- Phase 400A G.O/ AB Switch with Polymer Insulator on existing structure including alignment correction of all phases, Providing necessary MS Channel, welding, nutbolt as per TPCODL specification and drawing , Approved Make	EA	200	200	200	200	200	
47	Sply& Inst of 11KV HG Fuse 3P, 200A	Supply & Installation of 11 kV 3- Phase HG Fuse 200A with Polymer Insulator on existing structure including necessary MS Channel, welding, nutbolt as per TPCODL specification and drawing , TPCODL Approved Make.	EA	200	200	200	200	200	

48	Supply and Installation of 11kV D.O. Fuse 1Phase(Price per Phase) including Fuse Link on existing structure as per TP Central Orissa Distribution Co. Ltd. specification and drawing	Supply and Installation of 11kV D.O. Fuse 3 Phase(Price per Set) (Polymer Insulator) including Fuse Link on existing structure as per TP Central Orissa Distribution Co. Ltd. specification and drawing, TPCODL Approved Make	EA	300	300	300	300	300	
49	Sply & Inst BIRD CAP for Surge Arrester	Supply and Installation of Bird Cap for Lightning Arrester as per TPCODL spec & approved Make	EA	2,400	2,400	2,400	2,400	2,400	
50	SITC of L.A. 12KV, 10KA L II	Supply , Installation, Testing & Comissioning of 12KV,10KA,Zinc Metal oxide Lighting arrester Polymer type for Station Class-2.BA will supply all necessary support , MS Channel, nutbolt,earthing connection excluding earthing material.supply to be done as per TPCODL spec & approved Make (Raychem, oblum,	EA	600	600	600	600	600	
51	Sup& Inst GI Nut , Bolt & Washer of different Size	Supply & installation of different size of GI Nut ,bolt & washers	KG	10,000	10,000	10,000	10,000	10,000	
	Inst GI Nut , Bolt & Washer of different Size	Installation of different size of GI Nut ,bolt & washers	KG	2,000	2,000	2,000	2,000	2,000	
52	Supply of Sundries for survey tree cutting, small	Sundries for survey tree cutting, Aluminium Binding wire / PVC tape & Danger Board 4 Nos. etc	EA	200	200	200	200	200	
53	ITC of 10KVA,11/0.250KV DT	Installation, Testing and Commissioning of 11/0.25kV, 10kVA Single phase/ 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including loading, unloading, shifting/transportation from site /tent upto 15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections	EA	40	40	40	40	40	

54	ITC of 16K-25VA, 11/0.250V DT	Installation, Testing and Commissioning of 11/0.25kV, 16kVA Single phase/ 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including loading, unloading, shifting/transportation from site /tent upto 15KM, Testing of Transformer at Site. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	40	40	40	40	40	
55	ITCof 25KVA, 11/0.433KV DT	Installation, Testing and Commissioning of 11/0.4kV, 25kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including loading, unloading, Testing of Transformer at Site.shifting/transportation from site /tent upto15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	40	40	40	40	40	
56	ITC of 63KVA, 11/0.433KV DT	Installation, Testing and Commissioning of 11/0.4kV, 63kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including loading, unloading,Testing of Transformer at Site. shifting/transportation from site /tent upto15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing	EA	40	40	40	40	40	
57	ITC of 100KVA, 11/0.433KV DT	Installation, Testing and Commissioning of 11/0.4kV, 100kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including loading, unloading,Testing of Transformer at Site. shifting/transportation from site /tent. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	40	40	40	40	40	

58	ITC of 250KVA, 11/0.433V DT	Installation, Testing and Commissioning of 11/0.4kV, 250kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including jumpering & earthing connection/connection at HT and LT side,loading, unloading, shifting/transportation from site /tent upto15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	100	100	100	100	100	
59	ITC of 500KVA, 11/0.433V DT	Installation, Testing and Commissioning of 11/0.4kV, 500kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including ,jumpering/connection at HT and LT sideloading, unloading, Testing of Transformer at Site.shifting/transportation from site /tent upto 15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	40	40	40	40	40	
60	ITC 500KVA-1000KVA 11/0.433V DT	Installation, Testing and Commissioning of 11/0.4kV, 500KVA-1000kVA 3-Phase Distribution Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification including, jumpering/connection at HT and LT side loading, unloading, Testing of Transformer at Site.shifting/transportation from site /tent upto 15KM. Scope of work includes jumpering/connection at HT and LT side & Earthing Connections.	EA	2	2	2	2	2	
61	RMU INST SER 11KV 3W/4W,Wth Metering Unit	Installation,Testing & Comissioning of 11KV RMU 3W/4W RMU along with Metering Unit to be installed on the foundation including providing of necessary support, MS Channels, nut bolts and earthing. The scope excludes transport and foundation	EA	10	10	10	10	10	
62	RMU INST SER 33KV 3W/4W,Wth Metering Unit	Installation,Testing, comissioning of 33KV RMU 3w/4w with along with Metering Unit to be installed on the foundation including providing of necessary support, MS Channels, nut bolts and earthing. The scope excludes transport and foundation	EA	10	10	10	10	10	

63	ITC 11KV RMU on exist Foundation	Installation, Testing and Commissioning of 11/33kv 3-way /4-way/5way Ring Main Unit (RMU) on existing structure/foundation as per TPCODL.Specification including grouting & HT Cable Connections,earthing Connections & minor site modifications. Scope of work excludes earthing chamber and construction of	EA	4	4	4	4	4	
64	ITC 33KV RMU on exist Foundation	Installation, Testing and Commissioning of 33kv 3-way / 4-way/5Way Ring Main Unit (RMU) on existing structure/foundation as per TPCODL.Specification including grouting & HT Cable Connections,earthing Connections & minor site modifications. Scope of work excludes earthing chamber and construction of	EA	4	4	4	4	4	
65	ITC of FDP with Foundation	Installation, Testing & comissioning of Feeder Pillar as per TPCODL drawing. Scope of work include construction of foundation using brick work, concreting etc and earthing	EA	10	10	10	10	10	
66	Extension of one LBS in existing 11KV RMU	Extension of one LBS in existing 11KV RMU structure specification including grouting, loading, unloading, shifting/transportation from site/tent. Scope of work includes earthing, jumpering/connection and construction / modification of foundation	EA	2	2	2	2	2	
67	Extension of one LBS in existing 33KV RMU	Extension of one LBS in existing 33KV RMU structure specification including grouting, loading, unloading, shifting/transportation from site/tent. Scope of work includes earthing, jumpering/connection and construction / modification of foundation	EA	2	2	2	2	2	
68	Sply & Inst of Fire Extinguish 5Kg DCP	Supply & Installation of Fire Extinguisher by means of proper hooks clamps etc. as required including providing of grouting material (cement etc.) and painting of hooks/clamps. Scope Including supply of hook/clamp	EA	200	200	200	200	200	
69	Constr of TRF Plinth for 250KVA	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250KVA transformer as per TPCODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	140	140	140	140	140	

70	Const Plinth L.T. DB BOX for 250-500KVA	BA will supply all civil Material, excavation , removal of Malba,refilling, including Manpower,machinery etc as per TPCODL Drawing for Plinth for L.T. Distribution box 6ft hight (below GL2ft)x5ftx5ft	EA	140	140	140	140	140	
71	Const of plinth for LT ACB 400-800A	BA will supply all civil Material along with GI Channel/Angles, excavation , removal of Malba,refilling, including Manpower,machinery etc as per TPCODL Drawing for Plinth for ACB as per TPCODL drawing	EA	100	100	100	100	100	
72	GInd/Term 1.5/2.5 Sqmm hvng 2C/3C/4C	Supply and installation of double Compression Flameproof Type Glanding armored 1.1 kV XLPE AL Cable - 2C/3C/4C of cross-section 1.5/2.5 sqmm, including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells)	EA	200	200	200	200	200	
73	GInd/Term 1.5/2.5 Sqmm hvng 7C/14C	Supply and installation of double Compression Flameproof Type Glanding armored 1.1 kV XLPE AL Cable - 7C/14C of cross-section 1.5/2.5 sqmm, including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
74	GInd/Term 4/6 Sqmm hvng 2C/4C	Supply and installation of double Compression Flameproof Type Glanding armored 1.1 kV XLPE AL Cable - 2C/4C of cross-section 4/6 sqmm, including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
75	GInd/Term 10/16 Sqmm hvng 2C/4C	Supply and installation of double Compression Flameproof Type Glanding armored 1.1 kV XLPE AL Cable - 2C/4C of cross-section 10/16 sqmm, including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
76	SUP/FAB/INST CU FLT BB 25X5 mm	Supply, Fabrication and Installation of Copper Flats.of 25X5 mm Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	

77	SUP/FAB/INST CU FLT BB 40X5 mm	Supply, Fabrication and Installation of Copper Flats 40X5 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
78	SUP/FAB/INST CU FLT BB 40X10 mm	Supply, Fabrication and Installation of Copper Flats 40X10 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
79	SUP/FAB/INST CU FLT BB 50X5 mm	Supply, Fabrication and Installation of Copper Flats 50X5 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
80	SUP/FAB/INST CU FLT BB 50X10 mm	Supply, Fabrication and Installation of Copper Flats 50X10 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
81	SUP/FAB/INST CU FLT BB 60X5 mm	Supply, Fabrication and Installation of Copper Flats 60X5 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
82	SUP/FAB/INST AL FLT BB 40X5 mm	Supply, Fabrication and Installation of AL Flats 40X5 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
83	SUP/FAB/INST AL FLT BB 40X10 mm	Supply, Fabrication and Installation of AL Flats 40X10 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
84	SUP/FAB/INST AL FLT BB 60X10 mm	Supply, Fabrication and Installation of AL Flats 60X10 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
85	SUP/FAB/INST AL FLT BB 80X10 mm	Supply, Fabrication and Installation of AL Flats 80X10 mm. Includes brazing, cutting, bending drilling hole etc. as per site requirements.	M	200	200	200	200	200	
86	SUP/INST 3.5/4C 16-35 SQMM GLND/AL TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 16-35 SQMM including making hole in base plate and dressing of cable along with Vornip proofing properly. supply to be done	EA	200	200	200	200	200	
87	SUP/INST 3.5/4C 50-95 SQMM GLND/AL TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 50-95 SQMM including making hole in base plate and dressing of cable	EA	200	200	200	200	200	

88	SUP/INST 3.5/4C 120-185 SQMM GLND/AL TER	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 120-185 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
89	SUP/INST 3.5/4C 240-300 SQMM GLND/AL TER	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 240-300 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
90	SUP/INST 1C 630/1000 SQMM GLND/AL TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 1C 630/1000 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
91	SUP/INST 3.5/4C 16-35 SQMM GLND/CU TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 16-35 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
92	SUP/INST 3.5/4C 50-95 SQMM GLND/CU TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 50-95 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
93	SUP/INST 3.5/4C 120-185 SQMM GLND/CU TER	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 120-185 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	
94	SUP/INST 3.5/4C 240-300 SQMM GLND/CU TER	Supply and erection of double Compression Flameproof Type Glanding for armored cable 3.5/4C 240-300 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	200	200	200	200	200	

95	SUP/INST 1C 630 SQMM GLND/CU TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 1C 630 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	100	100	100	100	100	
96	SUP/INST 1C 1000 SQMM GLND/CU TERM	Supply and erection of double Compression Flameproof Type Glanding for armored cable 1C 1000 SQMM including making hole in base plate and dressing of cable along with Vermin proofing properly .supply to be done as per TPCODL spec & approved Make Dowells	EA	100	100	100	100	100	
97	S/I JT KT HS 1.1KV/70-120 SQMM XLPE	BA will supply & Install Jointing KIT Heat Shrinkable , Approved Make for Jointing Kit- Raychem or 3M for 1.1KV XLPE Cable 70Sqmm-120 SQMM XLPE 4 core cable .No extra rate will be paid for Jointing services. Strainght through joints	EA	200	200	200	200	200	
98	S/I JT KT HS 1.1KV,>120- 240 SQMM XLPE	BA will supply & Install Jointing KIT Heat Shrinkable , Approved Make for Jointing Kit-Raychem or 3M for 1.1KV XLPE Cable 120Sqmm-240 SQMM XLPE 4 core cable.No extra rate will be paid for Jointing services.Strainght through joints	EA	200	200	200	200	200	
99	S/I JT KT HS 1.1KV,300 SQMM XLPE	BA will supply & Install Jointing KITT Heat Shrinkable , Approved Make for Jointing Kit-Raychem or 3M for 1.1KV XLPE Cable 120Sqmm-240 SQMM XLPE 4 core cable.No extra rate will be paid for Jointing services.Strainght through joints	EA	200	200	200	200	200	
100	FiltrationofTrf Oil per Lit Dist Trf	BA will provide the oil Filtration machine for filtration of Trf Oil. Power Supply arrangement for Filtration Machine will be done by BA.	L	20,000	20,000	20,000	20,000	20,000	
101	SUP/INST Bachelite Sheet 6, 8mm	BA will Supply & Install Bachelite Sheet thickness 6 or 8mm length 1M X 1M. Thickness requirement will be as	M2	400	400	400	400	400	
102	Dist TRF Painting Services upto 160KVA	BA will supply necessary paints, manpower & compressor for painting the Transformer upto 160KVA.The painting has to be done through spray. Power supply shall be in scope of BA.	EA	2,000	2,000	2,000	2,000	2,000	

103	Dist TRF Painting Services upto 500KVA	BA will supply necessary paints, manpower & compressor for painting the Transformer.The painting has to be done through spray.Power supply shall be in scope of TPCODL BA will supply & lay the Control cable 1.1KVGR	EA	2,000	2,000	2,000	2,000	2,000	
104	Sup/lay Cbl Ctrl 1.1KVGR 2Cx2.5Sqmmcu	2Cx2.5Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.Supply will be done as per TPCODL Specification & approved Make	M	1,000	1,000	1,000	1,000	1,000	
105	Sup/lay Cbl Ctrl 1.1KVGR 2Cx6Sqmmcu	BA will supply & lay the Control cable in trench / tray 1.1KVGR 2Cx6Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.Supply will be done as per TPCODL Specification & approved Make.	M	1,000	1,000	1,000	1,000	1,000	
106	Sup/lay Cbl Ctrl 1.1KVGR 4Cx6Sqmmcu	BA will supply & lay the Control cable in trench / Tray 1.1KVGR 4Cx6Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
107	Sup/lay Cbl Ctrl 1.1KVGR2Cx10Sqmmcu	BA will supply & lay the Control cable in trench / Tray 1.1KVGR 2Cx10Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
108	Sup/lay Cbl Ctrl 1.1KVGR4Cx10Sqmmcu	BA will supply & lay the Control cable in trench / Tray 1.1KVGR 4Cx10Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
109	Sup/lay Cbl Ctrl 1.1KVGR4Cx16Sqmmcu	BA will supply & lay the Control cable in trench / Tray 1.1KVGR 4Cx16Sqmm copper cable, Armoured , XLPE.Excavation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
110	Vermin Proofing RMU with material	BA will supply necessary M-Seal , bakelite sheet for Vermin Proofing RMU Cable compartment.	EA	20	20	20	20	20	
111	Vermin Proofing SWGR/TRF with material	BA will supply necessary M-Seal , bakelite sheet for Vermin Proofing switchgear / TRF Cable compartment.	EA	100	100	100	100	100	
112	EXCATON OF CBL TRENCH	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT Cable laying.BA will supply neccessry barricades at the excavation site.	M3	8,000	8,000	8,000	8,000	8,000	

113	Excavtn CBL Trench,Minor crossg	BA will excavate the cable trench 0.6Mtr depth & 0.8Width & 1Mtr length by providing all necessary tool, Manpower, pump etc suitable for LT Cable laying for minor crossing like infront of shop, houses etc.where BA will supply temporary arrangement-ply woods, Gunny bags etc. for crossing for smooth functioning of Traffic. BA	M3	12,000	12,000	12,000	12,000	12,000	
114	SITC CABLE,1.1KV,4CX300Sq XLPE ,AR,FRLS	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,4CX300Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray. Excavation cost will be paid separately	M	2,000	2,000	2,000	2,000	2,000	
115	SITC CABLE1.1KV4C 185 SQMM XLPE AL FRLS	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,4CX185Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
116	SITC CABLE1.1KV 4C 120 SQ MM XLPE AL AR	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable1.1KV,4CX120Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
117	SITC CABLE 1.1KV 4C 95 SQ MM XLPE AL AR	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable1.1KV,4CX95Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately	M	1,000	1,000	1,000	1,000	1,000	
118	SITC CABLE 1.1KV 4C 70 SQ MM XLPE AL AR	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,4CX70Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately	M	1,000	1,000	1,000	1,000	1,000	

119	SITC CABLE 1100V 4C X 35 SQMM AL XLPE	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,4CX35Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately	M	1,000	1,000	1,000	1,000	1,000	
120	SITC 1.1KV AR AL 4C 16MM2 XLPE Cable	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,4CX16Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately	M	1,000	1,000	1,000	1,000	1,000	
121	SITC 1.1KV 2C 16 SQ MM XLPE Cable	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 1.1KV,2CX16Sqmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately	M	200	200	200	200	200	
122	SITC of 11KV, 3C, 95Sqmm for XLPE Cab	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable11KV,3CX95qmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
123	SITC of 11KV, 3C, 120Sqmm for XLPE Cabl	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 11KV,3CX120qmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
124	SITC of 11KV, 3C, 185Sqmm for XLPE Cabl	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 11KV,3CX185qmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	500	500	500	500	500	
125	SITC of 11KV, 3C, 300Sqmm for XLPE Cabl	BA will do the supply,Laying,Testing & commissioning of the Cable 11KV,3CX300qmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	500	500	500	500	500	

126	SITC of 11KV, 3C, 400Sqmm for XLPE Cabl	BA will do the supply,Laying,Testing & commissioning of the Cable Test the Cable 11KV,3CX400qmm XLPE ,AR,FRLS as per TPCODL Drawing,specification , GTP and approved make in cable Trench or Tray.Excavation & Transportation cost will be paid separately.	M	1,000	1,000	1,000	1,000	1,000	
127	Supply & Installation of PIPE HDPE 110MM DIA 5.5MM THK PN4	Supply & Laying/Mounting and fixing of HDPE Pipe - 110mm dia (PN-4,Grade PE-80)and sealing of the same for LT/HT Cables. Scope also includes providing and laying all required consumable etc. for collar fixing and sealing of Pipe. (Excavation is excluded)	M	400	400	400	400	400	
128	Supply & Installation of HDPE 160MM DIA 7.7-8.6MM TH PN4	Supply & Laying/Mounting and fixing of HDPE Pipe - 160mm dia (PN-4,Grade PE-80)and sealing of the same for LT/HT Cables. Scope also includes providing and laying all required consumable etc. for collar fixing and sealing of Pipe. (Excavation is excluded)	M	400	400	400	400	400	
129	Supply & Installation of HDPE 200MM DIA. 9.6-10.7MM TH PN4	Supply & Laying of HDPE-200mmdia and sealing of the same for Laying LT/HT Cables. Scope also includes providing and laying all required consumable etc. for collar fixing and sealing of Pipe. (Excavation is excluded)	M	400	400	400	400	400	
130	Sply & jointin11KV 3C 95Sqmm HS Jointing	Supply & Installation of jointing kit of 11kv 3Cx 95 sq mm with Heat Shrink and providing jointing services as per TPCODL Standards, GTP, Drawing and specifications. Approved Make- Raychem & 3M. (straight through).	EA	40	40	40	40	40	
131	Sply&jointing11KV3C 400Sqmm HS Joint KIT	Supply & Installation of jointing kit of 11kv 3Cx 400 sq mm with Heat Shrink and providing jointing services as per TPCODL Standards, GTP, Drawing and specifications. Approved Make- Raychem & 3M. (straight through)	EA	40	40	40	40	40	
132	Sply&jointing11KV3C 300Sqmm HS Joint KIT	Supply & Installation of jointing kit of 11kv 3C x300 sq mm with Heat Shrink and providing jointing services as per TPCODL Standards, GTP, Drawing and specifications. Approved Make- Raychem & 3M.(straight through)	EA	40	40	40	40	40	
133	Sply&jointing11KV3C 120Sqmm HS Joint KIT	Supply of jointing kit of 11kv 3Cx120 sq mm with Heat Shrink and providing jointing services as per TPCODL Standards, GTP, Drawing and specifications. Approved Make- Raychem & 3M. (straight through)	EA	40	40	40	40	40	

134	Spl&Inst 3CX 300Sqmm,11KV IDTerminati	Supply & installation of HS Indoor Termination of 11 kV Armoured XLPE, AL Cable 3CX300 sqmm including consumable.BA has to provide the jointer for preparing Termination kit. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for	EA	10	10	10	10	10	
135	Spl&Inst 3CX 400Sqmm,11KV ID Terminati	Supply & installation of HS Indoor Termination of 11 kV Armoured XLPE, AL Cable 3CX400 sqmm including consumable. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for	EA	10	10	10	10	10	
136	Spl&Inst3CX 120Sqmm,11KV ID Terminati	Supply & installation of HS Indoor Termination of 11 kV Armoured XLPE, AL Cable 3CX120 sqmm including consumable. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for	EA	10	10	10	10	10	
137	Spl&Inst3CX 185Sqmm,11KV ID Terminati	Supply & installation of HS 3CX185 sq mm 11kv indoor termination as per TPCODL Standards, GTP, Drawing and specifications. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for	EA	10	10	10	10	10	
138	Spl&Inst 3CX 95Sqmm,11KV ID Terminatio	Supply and installation of HS Outdoor End Termination Kit of 1CX95 sqmm (Single) for 11kv XLPE insulated AL AB Cable. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	10	10	10	10	10	
139	Spl&Inst 3CX 400Sqmm,11KV OD Terminat	Supply and installation of HS Outdoor Termination of 11 kV Armoured XLPE, AL Cable 3CX400 sqmm including consumable material. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	10	10	10	10	10	

140	Spl&Inst 3CX 300Sqmm,11KV OD Terminat	Supply and installation of HS Outdoor Termination of 11 kV Armoured XLPE, AL Cable 3CX300 sqmm including consumable material. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	10	10	10	10	10	
141	Spl&Inst 3CX 95Sqmm,11KV OD Terminat	Supply and installation of HS Outdoor Termination of 11 kV Armoured XLPE, AL Cable 3CX95 sqmm including consumable materials. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	10	10	10	10	10	
142	Spl&Inst 3CX 185Sqmm,11KV OD Terminat	Supply and installation of HS Outdoor Termination of 11 kV Armoured XLPE, AL Cable 3CX185 sqmm including consumable material. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	10	10	10	10	10	
143	Spl&Inst 3CX 120Sqmm,11KV OD Terminat	Supply and installation of HS Outdoor Termination of 11 kV Armoured XLPE, AL Cable 3CX120 sqmm including consumable material. Approved Make- Raychem & 3M.Scope of work includes the connection & preparation of termination kit.No additional cost will be provided for jointers.	EA	20	20	20	20	20	
144	Fixing of L.T. Stay	Fixing of LT Stay Insulator	EA	500	500	500	500	500	
145	Fixing of LT Stay clamp	Fixing of LT Stay Clamp	EA	500	500	500	500	500	
146	Fixing 7/12 SWG Stay	Fixing of 7/12 Swg Stay wire	KG	4,000	4,000	4,000	4,000	4,000	
147	ITC of 1000KVA, DT	Installation, Testing and Commissioning of 11/0.4kV or 33/0.433KV , 990/1000kVA 3-Phase Distribution Transformer on existing structure as per TPCODL specification including loading, unloading, jumpering/connection at HT and LT	EA	2	2	2	2	2	

	ITC of 2000KVA, DT	Installation, Testing and Commissioning of 11/0.4kV or 33/0.433KV , 1600/2000kVA 3-Phase Distribution Transformer on existing structure as per TPCODL specification including loading, unloading, jumpering/connection at HT and LT sideshifting/transportation from site/tent upto 10 Km.	No's	10	10	10	10	10	
148	Sply&jointing 33KVHSID3C400SQMM XLPE	Supply and installation of the HSID Jointing kit for 33KV cable of 3Cx400SQMM XLPE size. BA will supply all necessary tools, Skilled jointer for the activity excluding excavation as per TPCODLStandards.Approved Make-	EA	40	40	40	40	40	
149	Jointing Service of 33KVHS ID 3C400SQMM	BA will supply all necessary tools, Skilled jointer for 33KV HS ID 3Cx400SQMM activity of excluding excavation & Jointing Kit as per TPCODLStandards. This Line item is only for providing jointer and making joint by using suitable equipments by BA.	EA	40	40	40	40	40	
150	Jointing Service 11KV 3C300Sqmm ID XLPE	BA will supply all necessary tools, Skilled jointer for 11KV 3Cx 300Sqmm ID XLPE the activity excluding excavation & Jointing Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by BA.	EA	40	40	40	40	40	
151	Jointing Service 11KV 3C400Sqmm ID XLPE	BA will supply all necessary tools, Skilled jointer for the activity excluding excavation & Jointing Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by	EA	40	40	40	40	40	
152	Jointing Service 11KV 3C120Sqmm ID XLPE	BA will supply all necessary tools, Skilled jointer for the activity excluding excavation & Jointing Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by	EA	40	40	40	40	40	
153	Jointing Service 11KV 3C95Sqmm ID XLPE	BA will supply all necessary tools, Skilled jointer for the activity excluding excavation & Jointing Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by	EA	40	40	40	40	40	

154	Term 11/33KV 3C XLPE HS/CS/PO ID/OD	BA will supply all necessary tools, Skilled jointer for the activity excluding excavation & Termination Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by	EA	80	80	80	80	80	
155	Term 11/33KV 1C XLPE HS/CS/PO ID/OD	BA will supply all necessary tools, Skilled jointer for the activity excluding excavation & Termination Kit as per TPCODLStandards.This Line item is only for providing jointer and making joint by using suitable equipments by	EA	80	80	80	80	80	
156	ExcavtnTrench hardRockOver&above0.8 X1.2M	BA has to provide all necessary Manpower, Tool, Tackles, Barricades, Dewatering pump, Gunny bags,Compressor for excavation in Hard Surface.The length of excavation will be 1Mtr x Depth 1.2M & Width 0.8Mtr	M3	1,000	1,000	1,000	1,000	1,000	
157	Providing /laying PVC pipes 150mm	BA will supply & lay PVC pipes 150mm dia .BA will provide necessary Tools,Machinery & Manpower for the	M	200	200	200	200	200	
158	Providing /laying PVC pipes 200mm	BA will supply & lay PVC pipes 200mm dia.BA will provide necessary Tools,Machinery & Manpower for the activity.	M	200	200	200	200	200	
159	Provid/laying B class 150mmGI pipe	BA will supply & lay B Class 150mm GI pipe(SAIL/TATA/JINDAL/RANL).BA will provide necessary Tools,Machinery & Manpower for the activity.	M	200	200	200	200	200	
160	Breaking of pavement stones	BA will break of pavement stones using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M2	1,000	1,000	1,000	1,000	1,000	
161	Demolish/removal of debris of PCC	BA will demolish PCC & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	1,000	1,000	1,000	1,000	1,000	
162	BREAKING OF ASPHALT	BA will break Asphalt road & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	1,000	1,000	1,000	1,000	1,000	
163	Excavation excl dewatering up to 2.5M	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	M3	200	200	200	200	200	

164	Backfilling with same earth	BA will Back fill the cable excavation site with same earth.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	200	200	200	200	200	
165	Supply & Installation of Hard Barricading with zebra strip one use	BA will provide hard Barricading with zebra strip one use for cable excavation site for safety of the employees & pedestrians	M	2,000	2,000	2,000	2,000	2,000	
166	Supply & Installation of Warning lights at 10Meter intervals per bulb	Supply and installation of Warning lights at 10 Meter intervals per bulb for excavation site for safety of the employees & pedestrians. Scope of work also includes the dismantling of light after completing the work.	DAY	200	200	200	200	200	
167	Supply & Installation of Fluorescent reflectors / Flashers	BA will supply & Install Fluorescent reflectors / Flashers for excavation site for safety of the employees & pedestrians	DAY	200	200	200	200	200	
168	Dewatering pump bet 5HP / 10 HP shift	BA will provide Dewatering pump bet 5HP / 10 HP shift for cable trenches near Drainage	DAY	100	100	100	100	100	
169	Laying PCC M15	Providing and laying Plain Cement Concrete (PCC) of proportion (1:2:4) in foudations and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	1,000	1,000	1,000	1,000	1,000	

170	Laying PCC M20	Providing and laying Plain Cement Concrete (PCC) of proportion (1:1.5:3) in foundations and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	1,000	1,000	1,000	1,000	1,000	
171	Debris Removal With Transport	Removal & disposal of Debris of other agency (Not applicable where removal and desposal is mentioned in th item rate)	M3	2,000	2,000	2,000	2,000	2,000	
172	Cleaning of ducts across the road	Cleaning of ducts across the road	m	200	200	200	200	200	
173	Provid Water tanker for cleaning	Provid Water tanker for cleaning	EA	200	200	200	200	200	
174	Providing unskilled labor	Providing unskilled labor for Misc activities	DAY	1,000	1,000	1,000	1,000	1,000	
175	Provid Air compressor w/ operator / fuel	Provide Air compressor with operator and fuel for excavation of road where manual excavtion is not permittable, and as per site requirement	DAY	100	100	100	100	100	
176	LAY CBL PWR XLPE 11KV TREN/PIPE	Laying of 11KV 3C Cable (70sqmm to 400 Sqmm) sqmm in Trench// cable Tray as per TPCODCL. specification including testing of cable. Scope of work also includes providing necessary Tools, Machinery, Manpower for laying .	M	2,000	2,000	2,000	2,000	2,000	
177	LAY CBL PWR XLPE 11KV TOW/TRAY/Pole	Laying/Stringing/Mounting of 11KV 3C Cable (70sqmm to 400 Sqmm) at Tower /Pole as per TPCODCL. specification including testing of cable. Scope of work also includes providing necessary Tools, Machinery, Manpower for Laying/Stringing/Mounting	M	400	400	400	400	400	

178	LAY CBL XLPE 33KV TREN/PIPE	BA will provide necessary Tools, Machinery, Manpower for laying of 33KV 3C Cable (70sqmm to 630Sqmm) in Trench or HDPE Pipe/Hum Pipe	M	2,000	2,000	2,000	2,000	2,000	
179	LAY CBL PWR XLPE 33KV TOW/TRAY	BA will provide necessary Tools, Machinery, Manpower for laying of 33KV 3C Cable (70sqmm to 630Sqmm) in Tower or Pole/ Tray .	M	400	400	400	400	400	
180	LAY CBL PVC/XLPE 440V/1.1KV TREN/PIPE	BA will provide necessary Tools, Machinery, Manpower for laying of 1.1KV 4C/1C/2C XLPE Cable (16sqmm to 630Sqmm) in Trench / HDPE Pipe/ Hum pipe .	M	1,000	1,000	1,000	1,000	1,000	
181	LAY CBL PVC/XLPE 440V/1.1KV TOW/TRAY	BA will provide necessary Tools, Machinery, Manpower for laying of 1.1KV 4C/1C/2C XLPE Cable (16sqmm to 630Sqmm) in Trench / HDPE Pipe/ Hum pipe .	M	400	400	400	400	400	
182	LAY CBL PWR 1CXLPE UPTO 33KV ALL SIZES	Laying/ Stringing/Mounting of 33KV 1C Cable upto 630 sqmm cable in Tranche/Cable tray/at Tower/Pipe as per TPCODCL. specification including testing of cable. Scope of work also includes providing necessary Tools, Machinery, Manpower for laying .	M	400	400	400	400	400	
183	LAY CBL PWR 1CXLPE UPTO33KV ALLSIZE TOW	BA will provide necessary Tools, Machinery, Manpower for laying of 33KV 1C Cable (70sqmm to 630Sqmm) in Tower or Pole	M	400	400	400	400	400	
184	LAY CBL PWR1CXLPE UPTO33KV ALLSIZE TRAY	BA will provide necessary Tools, Machinery, Manpower for laying of 33KV 1C Cable (70sqmm to 630Sqmm) in	M	400	400	400	400	400	
185	Laying 1.1KV Cable upto 10sqmm	Laying/ Stringing/Mounting of 1.1KV AL/CU AR XLPE/PVC Control cable upto 10sqmm .Scope of work also includes providing necessary Tools, Machinery, Manpower.	M	1,000	1,000	1,000	1,000	1,000	
186	Laying 1.1kV cable upto 120sqmm	Laying/ Stringing/Mounting of 1.1KV AL/CU AR XLPE/PVC (above 10sqmm to 120 Sqmm) cable .Scope of work also includes providing of necessary Tools, Machinery, Manpower	M	1,000	1,000	1,000	1,000	1,000	
187	Laying 1.1kV cable upto 185 to 400sqmm	Laying/ Stringing/Mounting of 1.1KV AL/CU AR XLPE/PVC (from 185sqmm to 400 Sqmm) cable .Scope of work also includes providing of necessary Tools, Machinery, Manpower.	M	1,000	1,000	1,000	1,000	1,000	

188	Laying 1.1kV 1C cable 630 to 1000sqmm	Laying/ Stringing/Mounting of 1.1KV AL/CU AR XLPE/PVC (from 400 sqmm to 1000 Sqmm) cable .Scope of work also includes providing of necessary Tools, Machinery, Manpower.	M	200	200	200	200	200	
189	Supply & Installation of WPB 160x160mm-11mtr (30.46kg/M)	Supply and Installation/Erection of (160X 160mm WPB (11 Mtr long) (30.46 kg Per meter) (Each 335.06kg)) Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	500	500	500	500	500	
190	Supply & Installation of WPB 160x160mm-13mtr (30.46kg/M)	Supply and Installation/Erection of (160X 160mm WPB (13 Mtr long) (30.46 kg Per meter) (Each 395.98kg)) Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	500	500	500	500	500	

191	Supply & Installation of of H pole 14Mtr-56Kg/Mtr	Supply & Installation/Erection of H pole of 14Mtr-56Kg/Mtr Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and coupling. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and coupling and earthing as per TPCODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)x2300(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow	EA	200	200	200	200	200	
192	Supply & Installation of 9 mtr. long 300 Kg. PSC Pole	Supply & Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPCODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	400	400	400	400	400	

193	Supply & Installation of 9 mtr. long 116X100 RS Joist Pole	Supply & Installation/Erection of 9 Mtr long Pole RS JOIST including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 cement concrete, of size - 500x500X1500 , and ,Cooping 500x500x450mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing .	EA	400	400	400	400	400	
194	Supply & Installation of 11 mtr. long 116X100 RS Joist Pole	Supply & Installation/Erection of 11 mtr 116X100 Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Central Orissa Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	200	200	200	200	200	
195	Installation of 11 KV V cross Arm	Installation of V cross arm on pole along with Nut bolts for 11KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
196	Installation of Top bracket to 11KVpole	Installation of Top bracket on pole along with Nutbolts for 11KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
197	Inst Back clamp to 11 KV V cross Arm	Installation of Back clamp for V Cross arm along with Nutbolts for 11KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
198	Inst of 11KV Polymer PIN Insulator	Installation of 11KV Polymer Insulator along with Nutbolts for 11KV line.Nutbolts will be paid separately.	EA	1,500	1,500	1,500	1,500	1,500	
199	Inst 11KV polymerDisc ins with Hardware	Installation of 11KV Polymer Disc Insulator (45KN- 90KN) along with Hardware fitting for 11KV line.Nutbolts will be paid separately.	EA	300	300	300	300	300	

200	Inst 11KVcomplt stay set with concrete	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.	EA	575	575	575	575	575	
201	Installation of 33 KV V cross Arm	Installation of V cross arm on pole along with Nutbolts for 33KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
202	Installation of Top bracket to 33KVpole	Installation of Top bracket on pole along with Nutbolts for 33KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
203	Inst Back clamp to 33 KV V cross Arm	Installation of Back clamp for V Cross arm along with Nutbolts for 33KV line.Nutbolts will be paid separately.	EA	500	500	500	500	500	
204	Inst of 33KV Polymer PIN Insulator	Installation of 33KV Polymer Pin Insulator 10KN along with Nutbolts for 33KV line.Nutbolts will be paid	EA	1,500	1,500	1,500	1,500	1,500	
205	Inst 33KV polymerDisc ins with Hardware	Installation of 33KV Polymer Disc Insulator (90KN-120KN) along with Hardware fitting for 11KV line.Nutbolts will be paid separately.	EA	300	300	300	300	300	
206	Fixing of 33KV Stay set with Concreting	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	575	575	575	575	575	

207	Fixing of LT stay set with Concreting	Fixing of complete LT line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5) Stay clamps with Nuts & bolts BA will do the excavation including excavation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	575	575	575	575	575	
208	Fixing of H.T. Stay Insulator for 11KV	Fixing of HT stay Insulator as per site requirement .BA will provide only services	EA	500	500	500	500	500	
209	Fixing of HT Stay clamp for 11KV	Fixing of HT stay clamp as per site requirement .BA will provide only services	EA	500	500	500	500	500	
210	Fixing of 7/10 SWG Stay Wire	Fixing of HT stay wire as per site requirement .BA will provide only services	KG	60,000	60,000	60,000	60,000	60,000	
211	Fixing of HT Stay clamp for 33KV	Fixing of HT stay clamp as per site requirement .BA will provide only services	EA	500	500	500	500	500	
212	Fixing of H.T. Stay Insulator for 33KV p	Fixing of HT stay Insulator as per site requirement .BA will provide only services	EA	500	500	500	500	500	
213	Fixing of L.T. Stay	Fixing of LT Stay Insulator	EA	500	500	500	500	500	
214	Fixing of LT Stay clamp	Fixing of LT Stay Clamp	EA	500	500	500	500	500	
215	Fixing 7/12 SWG Stay	Fixing of 7/12 Swg Stay wire	KG	4,000	4,000	4,000	4,000	4,000	
216	Inst 4W service LT Dist BOX in Pole	BA will install LTDB box in pole for releasing power supply to LT 1ph & 3ph consumer.Scope includes provide necessary GI clamp arrangement for fixing LTDB to pole.Termination of incoming & outgoing cable in LT Dist	EA	1,000	1,000	1,000	1,000	1,000	
217	Inst 8W service LT Dist BOX in Pole	BA will install LTDB box in pole for releasing power supply to LT 1ph & 3ph consumer.Scope includes provide necessary GI clamp arrangement for fixing LTDB to pole.Termination of incoming & outgoing cable in LT Dist	EA	1,000	1,000	1,000	1,000	1,000	
218	Inst of Strain fittings	Installation of strain fitting for stringing LT ABC Cable.BA will provide necessary tool, manpower, nubolt .	EA	160	160	160	160	160	

219	Inst of Guy grip Dead end for Pole	Installation of Guy Grip Dead end for stringing LT ABC Cable.BA will provide necessary tool, manpower, nubolt.	EA	160	160	160	160	160	
220	Inst of Suspension clamp with I-Hook	Installation of suspension clamp for stringing LT ABC Cable.BA will provide necessary tool, manpower, nubolt.	EA	600	600	600	600	600	
221	Inst of Dead end clamp for Pole	Installation of Dead end clamp for stringing LT ABC Cable.BA will provide necessary tool, manpower, nubolt.	EA	200	200	200	200	200	
222	ITC of 11KV HG Fuse 3 Pole (200 Amp)	Installation ,Testing & comissioning of HG Fuse set in existing structure providing necessary manpower, nutbolt,Terminal connection, earthing connection, site minor modification, welding,Ms channel etc	EA	50	50	50	50	50	
223	ITC of LA12 KV ,10KA/PH	Installation,Testing & comissioning of the Lighting arrester (single phase) in existing structure providing necessary manpower, nutbolt,Terminal connection, earthing connection, site minor modification, welding,Ms	EA	152	152	152	152	152	
224	Inst BIRD CAP FOR 9KV 5KA SURGE ARRESTER	BA will install the Bird cap over the surgearrester	EA	600	600	600	600	600	
225	Inst of DD Fuse for 11KV /ph	BA will install the DD Fuse unit in existing structure providing necessary manpower, nutbolt,Terminal connection, earthing connection, site minor modification, alignment, welding,Ms channel etc	EA	600	600	600	600	600	
226	ITC 11KV AB Switch 3 Pole (200 Amp.	Installation ,Testing & comissioning of at 11KV line Lighting arrester in existing structure providing necessary manpower, nutbolt,Terminal connection, earthing connection, site minor modification, alignment, welding,Ms channel etc	EA	50	50	50	50	50	
227	ITC 11KV AB Switch 3 Pole (400 Amp.)	Installation ,Testing & comissioning of 11 kV 3- Phase (200Amp,400Amp) G.O /AB Switch on existing structure including alignment correction of all phases as per TPCODLspecification and drawing	EA	50	50	50	50	50	
228	Inst FUSE ELEMENT FOR 11KV DD FUSE	BA will install the fuse element on existing DD Fuse unit per phase	EA	600	600	600	600	600	
229	Sup/lay ABCable XLPE 4X150+1X150+1X16SQM	BA will supply & string LT ABC 4X150(P-N)+1X150(M)+1X16SQM (Street Lightas per Approved TPCODL Spec ,GTP,Make,drawing	M	1,000	1,000	1,000	1,000	1,000	

230	SUP/Laying AB Cable(4x50 + 1x50mm ² + 1x16mm ²)	BA will supply & string LT ABC 4C×50 mm ² (P)+1C×50 mm ² (M)+1CX16 mm ² (Street Light) as per Approved TPCODL Spec ,GTP,Make	M	2,000	2,000	2,000	2,000	2,000	
231	SUP/Lay AB Cable 4 x95 + 1x95mm ² +1X16mm ²	BA will supply & string LT ABC 4X95+1X95+1X16SQM as per Approved TPCODL Spec ,GTP,Make,	M	4,000	4,000	4,000	4,000	4,000	
232	SUP/Lay AB Cable 4 x35 + 1x35mm ² +1X16mm ²	BA will supply & string LT ABC 4X35+1X35+1X16SQM as per Approved TPCODL Spec ,GTP,Make,	M	4,000	4,000	4,000	4,000	4,000	
233	Sup/lay AB 2X35 + 1X35mm ² LT XLPE	BA will supply & string LT ABC 2x35 (P-N)+1X35SQM (M) as per Approved TPCODL Spec ,GTP,Make	M	4,000	4,000	4,000	4,000	4,000	
234	String of 1.1kV XLPE AB cable of all size of 5Wire & 6Wire	Stringing of Different size of LT AB Cable A) 6wire from 4 x35 + 1x35mm ² +1X16mm ² upto 4X150+1X150+1X16SQM B) & 5 Wire AB Cable from 3x35+1x25+1x16 mm upto 3X95+1X70+1X16 sqmm .BA will provide necessary	M	80,000	80,000	80,000	80,000	80,000	
235	String of 1.1kV XLPE AB cable size of 3Wire & 4wire	Stringing of Different size of LT AB Cable from 2x35+1x35 upto 3 x50 + 1x35mm ² . BA will provide necessary manpower, tools, machinery etc, ladder etc for stringing activities .Transport cost will be paid separately	Mtr	20,000	20,000	20,000	20,000	20,000	
236	Replacement with new HT 11 kV ID Metering	Replacement with new HT 11 KV indoor Metering cubicle, energy meter and modem include to & fro transportation, commissioning and energisation in all respect (i.e. grouting, masonry work, two earth connections, HT cable ends termination, socket/ thimble crimp, tape, plug cable entry hole, sealing cable end boxes, meter terminal cover, window and chamber door).	EA	4	4	4	4	4	
237	Replacement with new HT 11 KV out door Metering	Replacement with new HT 11 KV out door Metering CTPT unit, energy meter and modem include to & fro transportation, commissioning and energisation in all respect (i.e. reconnection in meter box from CTPT terminal block through control cable, pole mount CTPT unit erected at 30' height. Fix and Bolt CTPT unit, stand pipe flange, two earth connections, HT cable ends termination, socket/ thimble crimp, tape & plug cable entry, sealing CTPT unit terminal block, stand pipe flanges, meter terminal cover, window and chamber	EA	10	10	10	10	10	

238	Painting of Pole in Black & Yellow strip	Painting of Pole in Black & Yellow strips/Zebra as per TPCODL specification and indexing/numbering of Poles as per GIS format, scope also include site survey for GIS indexing and supply of ISI marked good quality paint.	EA	2,000	2,000	2,000	2,000	2,000	
239	Supply & Installation of Signage Board in vinyl	Bidder will supply necessary vinyl board & will do the signage writing as per TPCODL requirement	SQ Ft	500	500	500	500	500	
240	Supply & Installation of Signage Board in poly	Bidder will supply necessary poly vinyl board & will do the signage writing as per TPCODL requirement	SQ Ft	500	500	500	500	500	
241	Supply & Installation of Signage Board in flex	Bidder will supply necessary Flex board & will do the signage writing as per TPCODL requirement	SQ Ft	500	500	500	500	500	
242	Supply & Installation of Signage Board in MS Frame/plate	Signage Board in MS Frame/ plate as per TPCODL requirement with supply of Paint	SQ Ft	500	500	500	500	500	
243	Supply & Installation of Sign writing on leg of 11kV RMU	Sign writing on cable compartment of 11kV RMU as per details mentioned in the scope of work and specification (price per leg) (including Supply of paint)	EA	400	400	400	400	400	
244	Supply & Installation of Sign writing on	Sign writing on Transformer as per details mentioned in the scope of work and specification (including Supply of	EA	1,000	1,000	1,000	1,000	1,000	
245	Sign writing on Pole	Sign writing on Pole as per details mentioned in the scope of work and specification (including Supply of	EA	2,000	2,000	2,000	2,000	2,000	
246	ITC of 11KV OD Metering unit in Existing	Installation, Testing and Commissioning of 11kV Metering Cubicle on existing structure as per TPCODL specification including loading, unloading, shifting/transportation from site/tent upto 10KM. Scope of work excludes earthing, jumpering/connection	EA	20	20	20	20	20	
247	Prov Manpower for shifting Swgr Pan/PwrTRF upto 5T	Providing labour for shifting and installation of Transformer/Switchgear Panel etc. equipped with chain block, tripod, required accessories, safety PPE etc. (price per Transformer/Switchgear panel). Manual Shifting upto 100 mt for 5 Tonnage. The job to be carried out where vehicle approach is not available.	EA	10	10	10	10	10	

248	Providing manpower for shifting Swgr Pan/PwrTRF upto20T	Providing labour for shifting and installation of Transformer/Switchgear Pannel etc. equipped with chain block, tripod, required accessories, safety PPE etc. (price per Transformer/Switchgear panel). Manual Shifting upto 50 mt for 20 Tonnage. The job to be carried out where vehicle approach is not available.	No's	4	4	4	4	4	
249	Installation of Anti-Climbing Device on Pole	Installation of Barbed Wire (to avoid the climbing at pole) for 9Mtr/11Mtr/13 Meter pole/H Pole as per TP Central Orissa Distribution Co. Ltd. specification and drawing.	SET	6,000	6,000	6,000	6,000	6,000	
250	Installation of HT< Danger Board	Installation of HT Danger Board as per TPCODLspecification	EA	6,000	6,000	6,000	6,000	6,000	
251	ITC OD LTDB for 10KVATRF existing str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,10kVA Single Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	10	10	10	10	10	
252	ITC OD LTDB for 16KVATRF existing str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,10kVA single Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	10	10	10	10	10	
253	ITC OD LTDB for 25KVA TRF existing str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,25kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	10	10	10	10	10	
254	ITC OD LTDB for 63KVA TRF existing str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,63kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	10	10	10	10	10	
255	ITC OD LTDB for 100KVA TRF existing st	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,100kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	10	10	10	10	10	
256	ITC OD LTDB for 250KVA TRFexisting str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,250kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	100	100	100	100	100	

257	ITC OD LTDB for 315KVA TRF existin str	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,315kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	20	20	20	20	20	
258	ITC of OD LTDB for 500KVA TRF existing	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB for 11/0.4kV,500kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	50	50	50	50	50	
259	ITC of OD LTDB for 500-1000 kVA TRF exist	Installation, Testing & Comissioning of Outdoor Type LT Distribution Box with MCCB/ACB for 11/0.4kV,500-1000kVA Three Phase Transformer on existing structure as per TP Central Orissa Distribution Co. Ltd. specification	EA	20	20	20	20	20	
260	ITC LT Feeder Pillar excl foundation	Installation, Testing & Comissioning of Feeder Pillar /Minipillar Type as per TPCODLspecification on existing Structure/foundation. Scope of work exclude construction of foundation (brick work, concreting etc)	EA	20	20	20	20	20	
261	Installation of all type of connector	Installation of All type of Connector PG Clamp, T Clamp , connector, palm connector	EA	1,000	1,000	1,000	1,000	1,000	
262	Stringing & Fixing of GI & stay wire All size	Stringing & Fixing of all Type of GI & saty wire SWG including jumpering & earthing connection & making of connection hooks etc. as per TPCODL specification	M	50,000	50,000	50,000	50,000	50,000	
263	Making&FixingofGuard Lace of all type of GI wire	Making & Fixing of Guard Lace of All type of G.I. Wire for HV Line (price per lacing)	M	40,000	40,000	40,000	40,000	40,000	
264	Stringing of Wolf Conductor	Stringing of 148 sq mm AAAC Conductor including jumpering & earthing connection & making of connection etc .	M	4,000	4,000	4,000	4,000	4,000	
265	Stringing of 80-125sqmm Conductor	Stringing of Dog Conductor(80sq.mm to 125 sq.mm AAAC)	M	14,000	14,000	14,000	14,000	14,000	
266	Stringing of Racoon Conductor	Stringing of Racoon(ACSR/AAAC) Conductor including jumpering & earthing connection & making of connection hooks etc.	M	2,000	2,000	2,000	2,000	2,000	
267	Stringing of Rabbit Conductor	Stringing of Rabbit (bare) (ACSR/AAAC) Conductor including jumpering & earthing connection & making of connection hooks etc.	M	1,000	1,000	1,000	1,000	1,000	

268	Stringing of Insulated Rabbit	Stringing of Insulated Rabbit Conductor for Jumpering work of Distribution Transformer & making of connection hooks etc.	M	1,000	1,000	1,000	1,000	1,000	
269	Stringing of Weasel Conductor	Stringing of Weasel (ACSR/AAAC) Conductor including jumpering & earthing connection & making of connection hooks etc.	M	2,000	2,000	2,000	2,000	2,000	
270	Stringing of Squirell Conductor	Stringing of Squirell (ACSR/AAAC) Conductor including jumpering & earthing connection & making of connection hooks etc.	M	2,000	2,000	2,000	2,000	2,000	
271	Supply & Crimping/ Fixing/conn termi AL4sqmm Lug	Supply of AL Lugs suitable for 4 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per voltage requirement.	EA	200	200	200	200	200	
272	Supply & Crimping /Fixing/conn termi AL10SqmmLug	Supply of AL Lugs suitable for 10 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
273	Supply & Crimping/ Fixing/conn termi AL25SqmmLug	Supply of AL Lugs suitable for 25 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
274	Supply & Crimping /Fixing/conn termi AL35SqmmLug	Supply of AL Lugs suitable for 35 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
275	Supply & Crimping /Fixing/conn termi AL50sqmm Lug	Supply of AL Lugs suitable for 50 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification.Scope also include supply and erection of PVC Tape as per voltage	EA	200	200	200	200	200	
276	Supply & Crimping /Fixing/conn termi AL70sqmmLug	Supply of AL Lugs suitable for 70 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	

277	Supply & Crimping /Fixing/conn termi AL95sqmmLug	Supply of AL Lugs suitable for 95 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
278	Supply & Crimping /Fixing/conn termi AL120sqmmLug	Supply of AL Lugs suitable for 120 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
279	Supply & Crimping /Fixing/conn termi AL185sqmmLug	Supply of Aluminium Lugs suitable for 185 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
280	Supply &Crimping /Fixing/conn termi AL300sqmmLug	Supply of Aluminium Lugs suitable for 300 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
281	Supply & Crimping /Fixing/conn termi AL400sqmmLug	Supply of Aluminium Lugs suitable for 400 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification .Scope also include supply and erection of PVC Tape as per	EA	200	200	200	200	200	
282	Supply & Crimping /Fixing/conn termi AL630sqmmLug	Supply of Aluminium Lugs suitable for 630 sq mm cable/conductor, Crimping with cable and Fixing/connecting as per TPCODL Specification.Scope also include supply and erection of PVC Tape as per voltage	EA	200	200	200	200	200	
283	Transport through Trailer upto 70KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Trailer with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, 14 mt Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately. (Full Trailer)	EA	20	20	20	20	20	

284	Transport through Trailer per KM beyond 70 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Trailer per KM beyond 70KM with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, 14 mt Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately. (Full Trailer)	KM	1,000	1,000	1,000	1,000	1,000	
285	Transport through Tractor upto 40KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tractor with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for	EA	200	200	200	200	200	
286	Transport through Tractor per KM beyond 40 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tractor per KM beyond 40 KM with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately.	KM	1,000	1,000	1,000	1,000	1,000	
287	Transport through Truck upto 70KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Full body Truck with labours as required (price per trip). Scope of work also include loading and unloading of materials except heavy items like HT Panel, Transformer, Cable Drum, LT Board where loading, unloading is to be done with crane and will be paid separately (Full Truck)	EA	20	20	20	20	20	

288	Transport through Truck per KM beyond 40 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Full Body Truck per KM beyond 40 KM with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately.	KM	1,000	1,000	1,000	1,000	1,000	
289	Transport thr Tempo upto 70KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tempo (Magic, ACE,etc..) with labours as required (price per trip). Scope of work also include loading and unloading of materials except heavy items like HT Panel, Transformer, Cable Drum, LT Board where loading, unloading is to be done with crane and will be paid	EA	20	20	20	20	20	
290	Transport through Tempo per KM beyond 40 KM	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tempo (Magic, ACE,etc..) per KM beyond 40 KM with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid	KM	1,000	1,000	1,000	1,000	1,000	
291	Transport through 407 upto 70Km	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Tempo 407 with labours as required (price per trip). Scope of work also include loading and unloading of materials except heavy items like HT Panel, Transformer, Cable Drum, LT Board where loading, unloading is to be done with crane and will be paid separately	EA	20	20	20	20	20	

292	Transport through TATA 407 epr KM beyond 70Km	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - TATA 407 per KM beyond 70 KM with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately.	KM	1,000	1,000	1,000	1,000	1,000	
293	ITC 12.5/16MVATRF ,50MtrTransport Manual	Installation ,testing & commissioning including dragging from unloading point to foundation(50 meters) ,of 16/20 MVA, 3 Ph, Transformer with OLTC. There shall be outdoor bushings on HV side which shall be connected with the overhead bus through brass palm conectors, and on LV side outdoor copper bus bars. LV side busbars shall connect to 1CX1000sqmm 2 runs of 11kV Al XLPE cable per phase. It also includes fixing of all loose accessories and parts,pre-commissioning checks and oil-Filtration/dehydration of oil (if required). The Transformer shall be connected with Transformer Monitoring Unit(MR-Tapcon/A-eberly-REGDA) by necessay wiring as per approved drawings.Ladder with anti-climbing device shall be provided between main tank top lid and main tank conservator. Bushing palm connectors shall be provided for HV and LV / LVN bushing. Voltage ratio shall test be done using TTR kit. including jumpering & earthing	EA	4	4	4	4	4	

294	ITC 5/8MVATRF ,50MtrTransport Manual	Installation ,testing & commissioning including dragging from unloading point to foundation(50 meters)of 5/8 MVA,33/11kV, 3 Ph Transformer with OLTC.There shall be outdoor bushings on HV side which shall be connected with the power cable s through external open bus bar arrangement on both sides, and on LV side cable box to be provided. it also includes fixing of a ll loose accessories and parts,pre-commissioning checks and oil-Filtration/de-hydration of oil (if required). The Transformer shall be connected with Transformer Monitoring Unit(MR-Tapcon/A-eberly-REGDA) by necessary wiring as per approved drawings.Ladder with anti-climbing device shall be provided between main tank top lid and main tank conservator. Bushing palm connectors shall be provided for HV and LV / LVN bushing. Voltage ratio shall test be done using TTR kit. including jumpering & earthing	EA	6	6	6	6	6	
295	ITC 1.6/3MVA TRF, 50Mtr Transport Manual	"Installation ,testing & commissioning including dragging from unloading point to foundation(50 meters)of 1.6/3 MVA,33/11kV, 3 Ph , 'Dyn11 ONAN/ ONAF Transformer .There shall be outdoor bushings on HV side which shall be connected with the power cable s through external open bus bar arrangement on both sides, and on LV side cable box to be provided. it also includes fixing of a ll loose accessories and parts,pre-commissioning checks and oil-Filtration/de-hydration of oil (if required). .Ladder with anti-climbing device shall be provided between main tank top lid and main tank conservator. Bushing palm connectors shall be provided for HV and LV / LVN bushing. Voltage ratio shall test be done using TTR kit. including jumpering & earthing connection if any "	EA	6	6	6	6	6	
296	ITC of 11KV Auto reclosure	Installation, Testing and commissioning of 11kV auto reclosure Unit on existing structure as per TPCODL specification including loading, unloading, shifting/transportation from site/tent up to 10KM. Scope of work also includes earthing, jumpering/connection.	EA	20	20	20	20	20	

297	Civil cost for making plinth 250KVA upto 1000KVA	Civil cost for making TRF plinth from 250KVA of upto 1000KVA.BA has to provide necessary civil material, manpower, machinery for construction of plinth as per TPCODL Drawing	EA	150	150	150	150	150	
298	ITC of 990KVA Packaged substation	Installation, testing and commissioning of 990 kVA packaged substation. BA will transport, loading & unloading PSS from store to site upto 10KM. Connection of HT & LT Cable,earthing connection, comissioning Testing,fixing of the PSS on the foundation,necessary Ms support as per site requirement & TPCODL Drawing & comissioning checklist. Foundation & crane charges will	EA	2	2	2	2	2	
299	ITC of upto 750KVA Packaged substation	Installation, testing and commissioning of packaged substation (400KVA, 630KVA, 750KVA). BA will transport, loading & unloading PSS from store to site upto 10KM. Connection of HT & LT Cable,earthing connection, comissioning Testing,fixing of the PSS on the foundation,necessary Ms support as per site requirement & TPCODL Drawing & comissioning checklist. Foundation & crane charges will be paid separately	EA	2	2	2	2	2	
300	ITC of Out Door 33KV VCB on exist structure	Installation, testing and commissioning of 33KV Outdoor type VCB on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection as per TPCODL requirement.	EA	2	2	2	2	2	
301	ITCof 33KV Out Door CT on exist structure	Installation, testing and commissioning of 33KV Outdoor type current Transformer on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection, site testing as per TPCODL requirement.	EA	2	2	2	2	2	

302	ITC of 33KV Out Door PT on existing structure	Installation, testing and commissioning of 33KV Outdoor type potential Transformer on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection , site testing as per TPCODL requirement.	EA	2	2	2	2	2	
303	ITC of 11KV Out Door VCB on existing str	Installation, testing and commissioning of 11KV Outdoor type Vaccum circuit breaker on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection, site testing as per TPCODL drawing.	EA	2	2	2	2	2	
304	ITC of CR PANEL Feeder on existing str	Installation, testing and commissioning of 11KV Breaker/ 33KV Breaker control panel on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection , site Testing as per TPCODL requirement.	EA	2	2	2	2	2	
305	ITC CR PANEL Transformer on exist str	Installation, testing and commissioning of Transformer Breaker control panel on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection , site Testing as per TPCODL requirement.	EA	2	2	2	2	2	
306	ITC 33KV Isolator includ ES in exist str	Installation ,testing & commissioning of 33KV , 3 Ph gang operated , Manual Operated, Disconnecter (isolator) solid core post insulator.-With earth switch with gear box arrangement and other accessories including jumpering & earthing connection if any "	EA	2	2	2	2	2	
307	ITC 33KV Isolator w/oEarth switch	"Installation ,testing & commissioning of 33KV , 3 Ph gang operated , Manual Operated, Disconnecter (Isolator) with solid core post insulator.-Without earth switch with gear box arrangement and other accessories including jumpering & earthing connection if any "	EA	2	2	2	2	2	

308	Dismantling of RSJ/ WPB pole(150x150mm/R	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	200	200	200	200	200	
309	Dismantling of RSJ/WPB pole(116x100mm)	Dismantling of 09/11 Mtr. Joist/WPB Pole- 116X100mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	200	200	200	200	200	
310	Dismantling of PSC pole (9mtr)& return	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of	EA	200	200	200	200	200	
311	Dismantling of 11KV 'V' Cross arm & retu	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	200	200	200	200	200	
312	Dismantling of 11KV GI pin with insulato	Dismantling of 11kV Pin Insulator with Pin including loading, transportation, unloading and staking at a proper place in safe position/ site store.	EA	600	600	600	600	600	
313	Dismantling of 11KV Disc insulator with	Dismantling of 11kV Disc Insulator with Hardware including loading, transportation, unloading and staking at a proper place in safe position/ site store.	EA	120	120	120	120	120	
314	Dismantling of MS Channel& Return store	Dismantling / Removal of MS Channel. from Double Pole Structure /pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site store	KG	10,000	10,000	10,000	10,000	10,000	

315	Construction of FRP fencing	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPCODL Drawing, specification & GTP.	MM2	2,000	2,000	2,000	2,000	2,000	
316	Construction of Boundary wall Fencing	BA will provide necessary Manpower,civil material & Ms Material for construction boundary wall fencing as per TPCODL requirement	MM2	2,000	2,000	2,000	2,000	2,000	
317	Supply & Installation of 33KV DPstr excluding Pole	BA will install the Double Pole Structure along with supply of all hardware pin insulator, disc insulator, LA,earthing pipe, Concreting, coupling etc as per TPCODL Drawing & specification.11Mtr/13Mtr/9Mtr Pole will be supplied by TPCODL	EA	100	100	100	100	100	
318	Supply & Installation of 11KV DPstr excluding Pole	BA will install the Double Pole Structure along with supply of all hardware pin insulator, disc insulator, LA,earthing pipe, Concreting, coupling etc as per TPCODL Drawing & specification.11Mtr/13Mtr/9Mtr Pole will be supplied by TPCODL	EA	100	100	100	100	100	
319	ITC of 11KV ID VCB on existing str	Installation, testing and commissioning of 11KV Indoor type Vaccum circuit breaker on the existing structure.The scope includes provision of crane/ farana for lifting VCB at the construction site, Manpower including HT connection, Control circuit connection, site testing as per TPCODL drawing.	EA	10	10	10	10	10	
320	Supply & Installation of 33KV 4pole str excluding pole	BA will install the four pole Structure including supply of MS Channel, concreting, coupling as per TPCODL Drawing. 11Mtr/13Mtr Pole will be supplied by TPCODL. Hardware Fittings, AB Switch, Insulator, LA, earthing etc.. shall be paid separately	EA	10	10	10	10	10	
321	ITC of 11KV Iso upto 630A with all acc	Installation ,testing & commissioning of 12KV , 3 Ph gang operated , Manual Operated, Disconnecter (Isolator) with solid core post insulator.-With earth switch with gear box arrangement and other accessories including jumpering & earthing connection & earthing connection if any ".	EA	4	4	4	4	4	

322	ITC OF 33KV Iso upto 800A with all acce	Installation ,testing & commissioning of 36KV , 3 Ph gang operated , Manual Operated, Disconnecter (Isolator) with solid core pos t insulator.-With earth switch with gear box arrangement and other accessories including jumpering & earthing connection & Earthing connection if any "	EA	4	4	4	4	4	
323	Supply & Installation Cradle Guard Roadcrossing ex pole	BA will install the two no's of Double Pole Structure on both side of road with supply of necessary MS Channel, Concreting, Couping, erection of Pole and MS Channel as per TPCODL Drawing. Hardware, pin insulator, disc insulator, earthing pipe, GI Wire, Lacing, LA, etc shall be paid separately. The pole - 11Mtr/13Mtr/14Mtr shall be	EA	40	40	40	40	40	
324	Dismantling of 16KVA Dist TRF	Dismantling of existing 11/0.4kV, Three Phase Distribution Transformer 16KVA including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	20	20	20	20	20	
325	Dismantling of 25KVA Dist TRF	Dismantling of existing 11/0.4kV, Three Phase Distribution Transformer 25KVA including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	20	20	20	20	20	
326	Dismantling of 63KVA Dist TRF	Dismantling of existing 11/0.4kV, Three Phase Distribution Transformer 63KVA including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	20	20	20	20	20	
327	Dismantling of 100KVA Dist TRF	Dismantling of existing 11/0.4kV, Three Phase Distribution Transformer below 100KVA including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in safe position/site store	EA	20	20	20	20	20	

328	Dismantling of 250KVA Dist TRF	Dismantling of existing 11/0.4kV, 250kVA Three Phase Distribution Transformer including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	20	20	20	20	20	
329	Dismantling of Dist TRF 250KVA- 500KVA	Dismantling of existing 11/0.4kV, 500kVA Three Phase Distribution Transformer including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	20	20	20	20	20	
330	Dismantling of Dist TRF 500-1000KVA	Dismantling of existing 11/0.4kV, 990/1000kVA Three Phase Distribution Transformer including removal of HT/LT leads, earth connections and unloading by crane if required. Scope of work also includes loading, transportation, unloading and staking at a proper place in	EA	4	4	4	4	4	
331	Dismantling of 34/55mm2 AAA Conductor& retu	Dismantling of ACSR/AAAC 34/ 55mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/ site store	M	20,000	20,000	20,000	20,000	20,000	
332	Dismantling of 80/100 mm2 AAA Conductor& retu	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	M	20,000	20,000	20,000	20,000	20,000	
333	Dismantling of 148/232mm2 AAA Conductor& ret	Dismantling of ACSR/AAAC 148/232mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/ site store	M	20,000	20,000	20,000	20,000	20,000	
334	Straightening existing TiltedPole RSJ	Rectification/Straightening of tilted pole in all respect including New Gen Hydra/ Crane as the case may beas per TPCODL Standards, Drawings, GTP and specifications	EA	880	880	880	880	880	
335	Straightening existing TiltedPole PSC	Rectification/Straightening of tilted pole in all respect including New Gen Hydra/ Crane as the case may beas per TPCODL Standards, Drawings, GTP and specifications	EA	880	880	880	880	880	

336	ITC of OD 160A MCCB DB in Exist	Installation ,Testing & comissioning of 1.1kV, 3 Phase ACB/MCCB/ICTP Switch Unit- 100/200 A on existing structure and connecting of cable leads into the MCCB/ACB/ICTP Switch.If aluminium bus bar extension required installation of insulators to support the busbar and providing the provision of cable support including taping. Scope of work also includes cable dressing & cable termination if required as per TPCODL requirement.	EA	400	400	400	400	400	
337	ITC of OD 500A MCCB DB in existing foundation	Installation, testing and commissioning of 1.1kV, 3 PhaseACB/MCCB - 400/630/800/1250/2000 Amps existing structure and connecting of cable leads into the MCCB/ACB/ICTP Switch.If aluminium bus bar extension required installation of insulators to support the busbar and providing the provision of cable support including taping. Scope of work also includes cable dressing & cable termination if required as per TPCODL requirement.	EA	400	400	400	400	400	
338	Supply and Installation of cable Route marker	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPCODL	EA	2,000	2,000	2,000	2,000	2,000	
339	Backfilling with same	BA will Back fill the cable excvation site with same earth	M3	1,000	1,000	1,000	1,000	1,000	
340	Prov. backfill. earth with consolidation	BA will supply all materials required for backfilling and has to carry out the job of backfilling with earth, as per TPCODL standards	M3	1,000	1,000	1,000	1,000	1,000	
341	Backfilling with sand metal 1:1	Backfilling with sand metal 1:1	M3	1,000	1,000	1,000	1,000	1,000	
342	Prov. backfill. sand with consolidation	BA will supply all materials required for backfilling and has to carry out the job of backfilling with sand, as per TPCODL standards	M3	1,000	1,000	1,000	1,000	1,000	
343	Temporary backfilling with gunny bags	Temporary backfilling with gunny bags	M3	1,000	1,000	1,000	1,000	1,000	
344	Provid mats / Shoring up to 2.5M	BA will Provide necessary materials, tools tackles, labour, Shoring up to 2.5M	M2	600	600	600	600	600	
345	Providing walkway facility across trench	Providing walkway facility across trench	EA	200	200	200	200	200	

346	Supply & Installation of FUSE KITKAT TYPE 100A WITH BASE	Supply & Installation of FUSE KITKAT TYPE 100A WITH BASE on the existing/ new feeder pillar as per TPCODL Make- Havells, HPL, L&T, C&S.	EA	600	600	600	600	600	
347	Supply & Installation of FUSE KITKAT TYPE 200A WITH BASE	Supply & Installation of FUSE KITKAT TYPE 200A WITH BASE on the existing/ new feeder pillar as per TPCODL Make- Havells, HPL, L&T, C&S.	EA	600	600	600	600	600	
348	Supply & Installation of FUSE KITKAT TYPE 300A WITH BASE	Supply & Installation of FUSE KITKAT TYPE 300A WITH BASE on the existing/ new feeder pillar as per TPCODL Make- Havells, HPL, L&T, C&S.	EA	600	600	600	600	600	
349	Supply & Installation of FUSE KITKAT TYPE 400A WITH BASE	Supply & Installation of FUSE KITKAT TYPE 400A WITH BASE on the existing/ new feeder pillar as per TPCODL Make- Havells, HPL, L&T, C&S.	EA	600	600	600	600	600	
350	Supply & Installation of FUSE KITKAT TYPE 500A WITH BASE	Supply & Installation of FUSE KITKAT TYPE 500A WITH BASE on the existing/ new feeder pillar as per TPCODL Make- Havells, HPL, L&T, C&S.	EA	600	600	600	600	600	
351	Provision of 7.5Ton crane service loading & unloading	PROVD/OPERT Farana 7.5 Ton for 12Hr for loading & unloading of material.Farana will be used at TPCODL Store/Site & same farana will be used at site for	TRP	100	100	100	100	100	
352	Provision of 15Ton Faran service loading & unloading	PROVD/OPERT Farana 15 Ton for 12Hr for loading & unloading of material.Farana will be used at TPCODL Store/Site & same farana will be used at site for	TRP	200	200	200	200	200	
353	Sup/Inst/Fabr 100 x 50 x 6 mm GI channel	Supply, Installation and Fabrication of 100x50x6 mm GI MS channel on pole , DP structure etc as per TPCODL specifications	KG	40,000	40,000	40,000	40,000	40,000	
354	SUP/Inst/Fabr 75 x 40 x 6 mm GI chan GI	Supply, Installation and Fabrication of 75x50x6 mm GI MS channel on pole , DP structure etc as per TPCODL specifications	KG	20,000	20,000	20,000	20,000	20,000	
355	SUP/Inst/Fabr 50 x 50 x 6 mm GI chan GI	Supply, Installation and Fabrication of 50x50x6 mm GI MS channel on pole , DP structure etc as per TPCODL specifications	KG	20,000	20,000	20,000	20,000	20,000	
356	SITC of F Clamp on PSC pole	Supply and Installation of F-Clamp on PSC pole as per TPCODL Standards, Drawings, GTP and specifications	EA	2,000	2,000	2,000	2,000	2,000	
357	Supply & Erection G.I Fencing with Gate	Supply and Erection of GI Fencing with Gate as per TPCODL specifications	MM2	1,000	1,000	1,000	1,000	1,000	

358	Supply & Installation 3PH5W LT Cross Arm	Supply and Installation of 3-phase, 4-wire LT cross-arm as per TPCODL specifications. Approved Make	EA	300	300	300	300	300	
359	Supply & Installation Back clamp for LT Cross	Supply and Installation of Back clamp for LT cross arm as per TPCODL specifications. approved Make	EA	300	300	300	300	300	
360	Supply & Installation of LT GI PIN	Supply and Installation of LT GI Pin as per TPCODL specifications , Approved make	EA	1,000	1,000	1,000	1,000	1,000	
361	Supply & Installation GI PIN Insulator	Supply and Installation of GI Pin Insulator as per TPCODL Specification , Approved Make.	EA	1,000	1,000	1,000	1,000	1,000	
362	Supply & Installation LT Shackle Insulator	Supply and Installation of LT Shackle insulator as per TPCODL specifications , Approved Make.	EA	640	640	640	640	640	
363	Supply & Installation 45KN 11kV polymer insulator (B&S) with HW Fitting 2-Bolted	Supply and Installation of Hardware fittings 2 - bolted as per TPCODL specifications , approved Make.	EA	120	120	120	120	120	
364	Supply&inst concr slabbaseplate 2ftx2ftPSC pole	Supply and Installation of concrete slab base plate 2ftx2ft forPSC pole as per TPCODL specifications , approved make.	EA	2,400	2,400	2,400	2,400	2,400	
365	Providing Concreting to existing RSJ/WPB Pole	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level as per cc-1.1:5.3 grade & as with 20mm BHG metal per TPCODL Drawing. All necessary materials, excavations, removal of malba, are included in this scope while providing concreting to existing RSJ/WPB Pole.	CCM	2,000	2,000	2,000	2,000	2,000	
366	Providing Couping to existing support	BA has to provide Couping to the existing pole structre using CC-1.1:5.3 ratio with 20mm BHG metal & curing for 5 days as per TPCODL Drawing.Scope of work includes the shuttering and centering.BA wil provide necessary Civil material, Manpower, Tools& Tackle	Cum	2,000	2,000	2,000	2,000	2,000	
367	SITC of 11KV Metering Unit CTR(10-50/5)	Supply,Installation, Testing and Commissioning of 11kV Metering Cubicle on existing structure as per TPCODLspecification including loading, unloading, shifting/transportation from site/tent. Scope of work excludes earthing, jumpering/connection.Supply will be done as per TPCODL Specification & approved Make.	EA	2	2	2	2	2	

368	Dismantling of LT ABC Cable with accesso	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	2,000	2,000	2,000	2,000	2,000	
369	SITC OF 630A LTFeederpillar 8W,	Supply , Installation ,Testing & Commissioning of Feeder Pillar as per TPCODL specification on existing Structure/foundation. Scope of work exclude construction of foundation (brick work, concreting etc) and earthing.Supply will be done as per TPCODL Specification & approved Make.	EA	20	20	20	20	20	
370	SITC of 400A LT Minipillar BOX	Supply , Installation , Testing & Comissioning of Mini Pillar as per TPCODLspecification on existing Structure/foundation. Scope of work exclude construction of foundation (brick work, concreting etc) and earthing.Supply will be done as per TPCODL Specification & approved Make.	EA	20	20	20	20	20	
371	Civil foundation upto 990KVA PSS	Construction of Civil Foundation upto 990 KVA Packaged SubStation .BA will provide necessary civil material, manpower, machinery for construction of PSS Plinth as per TPCODL Drawing	EA	4	4	4	4	4	
372	SITC of 1CX300sqmm LT XLPE Cable	BA will Supply , Lay& Commissioning Testing of 1.1kV XLPE insulated PVC sheathed AL conductor Cable of size 1CX300 sqmm as per TP Central Orissa Distribution Co. Ltd. specification including testing of cable. BA will provide support during joint making by OEM of joint kit, no separate payment will be paid to BA for this support by BA.Supply will be done as per TPCODL Specification &	M	1,000	1,000	1,000	1,000	1,000	
373	SITC 11KV RMU Terminal boot 70 to 400sqm	BA will Supply, Install & Commissioning of 11KV RMU Terminal boot 70 to 400sqm, Only Raychem & 3M Make approved.Supply will be done as per TPCODL	EA	60	60	60	60	60	
374	SITC 33KV RMU Terminal boot 70 to 400sqm	BA will Supply, Install & Commissioning of 33KV RMU Terminal boot 70 to 400sqm.Supply will be done as per TPCODL Specification & approved Make.Raychem & 3M Make	EA	60	60	60	60	60	
375	SITC ACSR RABBIT PVC 61.70SQMM Insulated	BA will Supply , Lay & Commissioning of insulated ACSR RABBIT Conductor PVC 61.70 SQMM	M	4,000	4,000	4,000	4,000	4,000	

376	Construction of RMU foundation O/D	Construction of 3-way/4-way/5way RMU Plinth with Brick, Mortar, 12 mm cement plaster as per drawing.Scope of work includes excavation of earth for foundation and supply of raw material i.e. sand, cement, bricks and removal of extra malba if any as per site requirement including labour required for the same (PCC 1:4:8/ as persite req uirement) .	EA	10	10	10	10	10	
377	Painting of new & existing RS Joist Pole	Painting of RS Joist Pole with fittings 2 coats of Al paint over a coat of red oxide primer including all Tools & Tackle and paints	EA	2,000	2,000	2,000	2,000	2,000	
378	SITC of 30 KV 10KA Lighting arrester	BA will Supply , install & Testing of 30 KV 10KA Zinc Metal oxide Lighting arrester as per TPCODL drawing, GTP & Specification	ea	300	300	300	300	300	
379	SITC of 33KV 400A AB Switch	Supply ,Installation & Testing of 33 KV 3- Phase 400A AB Switch on existing structure including alignment correction of all phases, Providing necessary MS Channel, welding, nutbolt as per TPCODL specification and drawing , Approved Make	EA	100	100	100	100	100	
380	Installation of 30 KV 10KA Lighting arrester	Installation of 30 KV 10KA Lighting arrester.	EA	300	300	300	300	300	
381	ITC of 33KV 400A AB Switch	Installation of 33 kV 3- Phase (400Amp) G.O /AB Switch on existing structure including alignment correction of all phases as per TPCODLspecification and drawing	EA	100	100	100	100	100	
382	ITC of LT ACB 400A	Installation, testing and commissioning of LT ACB 400 Amps with enclosure on existing structure	EA	100	100	100	100	100	
383	ITC of LT ACB 800A	Installation, testing and commissioning of LT ACB 800 Amps with enclosure on existing structure	EA	100	100	100	100	100	
384	ITC of LT ACB 1250A	Installation, testing and commissioning of LT ACB 1250 Amps with enclosure on existing structure	EA	50	50	50	50	50	
385	ITC of LT ACB 2000A	Installation, testing and commissioning of LT ACB 2000 Amps with enclosure on existing structure	EA	10	10	10	10	10	
386	Installation of IP Connector	Installation of Insulated Piercing Connector as per TPCODL specification and drawing	EA	2,000	2,000	2,000	2,000	2,000	

387	Excavation in Rocky soil with laying Hume/PVC Pipe	Excavating trenches of required width and depth for pipe,cables etc including Excavation for sockets including getting out the excavated materials,returning(refillig) the soil as required in layers not exceeding 200 mm depth , including consolidating each deposited layers by ramming ,watering etc, stacking servicable materials for measurements and disposal of unservicable materials as direct by EIC for laying of different size of cable/pipes laying. Scope of work excludes laying of HUME/PVC Pipes as per TPCODL	M3	200	200	200	200	200	
388	Trenchless Duct 200mm dia by HDD Machine PN4	Making Trenchless ducts with 200 mm dia through HDD method by using HDD machine.Scope of work excludes laying of cable .Supply of HDPE pipe will be consider in other line items.	M3	200	200	200	200	200	
389	Trenchless Duct 200mm dia by HDD Machine PN6	Making Trenchless ducts with 200 mm dia including laying of cable & HDPE pipe HDPE pipe casing using HDD machine including supply of pipe of grade PN Grade 6,	M3	200	200	200	200	200	
390	Treated Earthing Pit	Earthing with GI pipe earth electrode with treated earth Pit . With earth enhancement material as per IEEE80:2000,14.5(D)(Earth pit resistance will be measured and recorded)	M	200	200	200	200	200	
391	SITC Bird Guard	Supply and fixing of Bird guard as per TPCODL	M	1,000	1,000	1,000	1,000	1,000	
392	Dismantling of ACSR Conductor & Return Store	Dismantling of ACSR "Panther" conductor (per mtr. per conductor) including stacking at site and transportation of dismantalled material to TPCODL store/ site as per requirement of Engineer- in- charge.	M	2,000	2,000	2,000	2,000	2,000	
393	"Civil Cost for making foundation of feeder Pillar Type ""A""	"Civil Cost for making foundation of feeder Pillar Type ""A"" as per TPCODL Drawing	M	100	100	100	100	100	
394	"Civil Cost for making foundation of feeder Pillar Type ""B""	"Civil Cost for making foundation of feeder Pillar Type ""B""as per TPCODL Drawing	M	100	100	100	100	100	
395	Civil Cost for making foundation of Service	Civil Cost for making foundation of Service Pillar as per TPCODL Drawing	M	100	100	100	100	100	

396	Dismantling of 5-8MVA Power TRF	"Dismantling of 3.15/5MVA 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPCODL scope."	EA	10	10	10	10	10	
397	Dismantling of 8-12MVA Power TRF	"Dismantling of 12.5/8MVA 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPCODL scope."	EA	10	10	10	10	10	
398	Dismantling of faulty Equipmet like CB, CT, PT <(>&<)> Isolator	"Dismantling of faulty Equipmet like CB, CT, PT <(>&<)> Isolator Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPCODL scope."	EA	10	10	10	10	10	
399	SITC of 33KV 3C, 400sqmm XLPE Cable	BA will supply , lay & will carry out precomissioning testing for 33KV, 3CX400Sqmm XLPE Cable as per TPCODL Specification	M	2,000	2,000	2,000	2,000	2,000	
400	PROVD/OPERT MANLIFT 100FT Boom Length	Providing with Operator and MANLIFTER 100FT Boom Length for 8 Hrs	SFT	10	10	10	10	10	
401	REMOVAL OF RMU upto 33KV	Dismantling / Removal of 3way or 4 way RMU from existing foundation including loading, transportation, unloading and staking of dismantled material at a proper place in safe position or TPCODL store(Divisional store/Central Store upto 20Km) . Beyond the 20Km ,extra	EA	4	4	4	4	4	
402	DRY TYPE TRF INST SERVICES	BA has to provide all necessary Material, Tools, Manpower for loading, unloading,HT< Connection, necessary MS Channel, site modification.Earthing of Dry type Transformer upto 1500KVA Rating.4No's of earthing pit to be provided along with connection	EA	4	4	4	4	4	

403	Installation of PSC pole , 8Mtr	Installation/Erection of 8 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPCODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size 500x500x1400 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	No's	400	400	400	400	400	
404	Inst of Coil Earthing to Pole	Erection of earthing coil (8 SWG wire dia) along with 8 SWG Wire, Nut -bolt & other accessories to earth the pole as per TP Central Orissa Distribution Co. Ltd. Design .Scope of work also includes the excavation of earth upto 1.2 Mtr depth for erection of earthing coil and disposal of extra malba up to 150Mtr as EIC instructions.	No's	2,000	2,000	2,000	2,000	2,000	
405	Inst F clamp for PSC POLE 11KV Pole	Installation of GI F CLAMP for of size 50X50X6 mm Angle and other suitable size along with all required other accessories, nut-bolt etc. on HT Joist pole for 11kv Line as per Drawing	No's	100	100	100	100	100	
406	Sply & Inst straight Cross Arm for 33KV H Pole	Supply and Installation of GI straight cross arm(100x50x6 channel, Back clamp, F Bracket(Top Channel) suitable for H pole along with all required other accessories excluding nut-bolt etc. on HT pole for 33kv Line as per Drawing	KG	24,000	24,000	24,000	24,000	24,000	
407	Supply & Installation of Prefabricated RCC Trench (1.3Mtr W X 1.4Mtr D) 150mm Thick (M-30	Supply & Installation of Prefabricated RCC Trench (1.3Mtr W X 1.4Mtr D) 150mm Thick (M-30 Grade)	Cum	100	100	100	100	100	
408	Supply & Installation of Prefabricated RCC Trench (1.3Mtr W X 1.4Mtr D) 175mm Thick (M-30 Grade)-Utype	Supply & Installation of Prefabricated RCC Trench (1.3Mtr W X 1.4Mtr D) 175mm Thick (M-30 Grade)-Utype	Cum	100	100	100	100	100	

409	Supply & Installation of Rod, bending, cutting & binding for any kind of civil work	Supply & Installation of Rod, bending, cutting & binding for any kind of civil work	QINT	20	20	20	20	20	
410	PCC 1:3:6	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	Cum	20	20	20	20	20	
411	Centring and shuttering including strutting , propping etc.and removal of form for Foundations, footings, bases of columns etc. for mass	Centring and shuttering including strutting , propping etc.and removal of form for Foundations, footings, bases of columns etc. for mass concrete	M2	20	20	20	20	20	
412	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPCODL specification. Scope includes supply of all	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPCODL specification. Scope includes supply of all material	M3	20	20	20	20	20	

413	Brick work with bricks of class designation 75 in superstructure above plinth level upto floor five level in cement mortar 1:4 (1 Cement :4 Coarse sand) as per TPCODL specification. Scope includes supply of all	Brick work with bricks of class designation 75 in superstructure above plinth level upto floor five level in cement mortar 1:4 (1 Cement :4 Coarse sand) as per TPCODL specification. Scope includes supply of all material	M3	20	20	20	20	20	
414	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:6 (1 Cement : 6 Coarse sand) as per TPCODL specification. Scope includes supply of all	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:6 (1 Cement : 6 Coarse sand) as per TPCODL specification. Scope includes supply of all material	M3	20	20	20	20	20	
415	Brick work with bricks of class designation 75 in superstructure above plinth level upto floor five level in cement mortar 1:6 (1 Cement :6 Coarse sand) as per TPCODL specification. Scope includes supply of all	Brick work with bricks of class designation 75 in superstructure above plinth level upto floor five level in cement mortar 1:6 (1 Cement :6 Coarse sand) as per TPCODL specification. Scope includes supply of all material	M3	20	20	20	20	20	
416	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete, cold twisted bars/TMT as per TPCODL specification (Scope also include supply of	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete, cold twisted bars/TMT as per TPCODL specification (Scope also include supply of material)	KG	20	20	20	20	20	

417	Structural steel work in single section fixed with or without connecting plate including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (Scope also include	Structural steel work in single section fixed with or without connecting plate including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (Scope also include supply of material)	KG	20	20	20	20	20	
418	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (Scope also include	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (Scope also include supply of material)	KG	20	20	20	20	20	
419	15 mm cement plaster on the rough side of single or half brick wall of mix -1:4 (1 Cement : 4 Fine sand (50 % fine :50% coarse)) as per TPCODL specification. Scope includes supply of all	15 mm cement plaster on the rough side of single or half brick wall of mix -1:4 (1 Cement : 4 Fine sand (50 % fine :50% coarse)) as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
420	15 mm Cement Plaster on the rough side of single or half brick wall of mix-1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per TPCODL specification. Scope includes supply of all	15 mm Cement Plaster on the rough side of single or half brick wall of mix-1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	

421	15 mm Cement Plaster on the rough side of single or half brick wall of mix- 1:4 (1 Cement : 4 Coarse sand) as per TPCODL specification. Scope includes supply of	15 mm Cement Plaster on the rough side of single or half brick wall of mix- 1:4 (1 Cement : 4 Coarse sand) as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
422	15 mm Cement Plaster on the rough side of single or half brick wall of mix- 1:6 (1 Cement : 6 Coarse sand) as per TPCODL specification. Scope includes supply of	15 mm Cement Plaster on the rough side of single or half brick wall of mix- 1:6 (1 Cement : 6 Coarse sand) as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
423	12 mm Cement Plaster of mix - 1:4 (1 Cement : 4 Fine sand (50 % fine :50% coarse)) as per as per TPCODL specification. Scope includes supply of all material.	12 mm Cement Plaster of mix - 1:4 (1 Cement : 4 Fine sand (50 % fine :50% coarse)) as per as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
424	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPCODL specification. Scope includes supply of all material.	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
425	12 mm Cement Plaster of mix - 1:4 (1 Cement : 4 Coarse sand) as per as per TPCODL specification. Scope includes supply of all material.	12 mm Cement Plaster of mix - 1:4 (1 Cement : 4 Coarse sand) as per as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	

426	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Coarse sand) as per as per TPCODL specification. Scope includes supply of all material.	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Coarse sand) as per as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
427	12 mm cement Plaster 1:3 (1 Cement : 3 coarse sand) finished with a floating coat of neat cement. Scope includes supply of all material	12 mm cement Plaster 1:3 (1 Cement : 3 coarse sand) finished with a floating coat of neat cement. Scope includes supply of all material	M2	20	20	20	20	20	
428	6 mm Cement Plaster to ceiling of mix - 1:3 (1 cement : 3 fine sand) as per as per TPCODL specification. Scope includes supply of all material.	6 mm Cement Plaster to ceiling of mix - 1:3 (1 cement : 3 fine sand) as per as per TPCODL specification. Scope includes supply of all material.	M2	20	20	20	20	20	
429	Supply & Installation of pole Clamp for fixing Eyehook.9Mtr PSC	BA has to Supply & Install GI pole Clamp (50X8 flat) for fixing Eyehook.9Mtr PSC as per TPCODL Drawing.Approved Make-Raychem, SICAME	Pair	1,000	1,000	1,000	1,000	1,000	
430	Supply & Installation of Stainless steel Strap-7.5KN (20MM-W	Supply & Installation of Stainless steel Strap-7.5KN (20MM-W X0.7MM-T), Approved Make-Raychem, SICAME	KG	2,000	2,000	2,000	2,000	2,000	
431	Supply& Installation of Stainless steel Buckle for	Supply& Installation of Stainless steel Buckle for SS Strap as AISI304, Approved Make -Raychem, SICAME	No's	2,000	2,000	2,000	2,000	2,000	
432	Installation of Stainless Steel Strap	Installation of Stainless Steel Strap for fixing Suspension & deadend clamp	Mtr	2,000	2,000	2,000	2,000	2,000	
433	Installation of Stainless Steel Buckle	Installation of Stainless Steel Buckle	No's	2,000	2,000	2,000	2,000	2,000	
434	Fixing of Mid Span Compression Joints s	Fixing of Mid Span Compression Joints suitable for AAAC/ACSR Conductor	No's	40	40	40	40	40	

435	Detail Survey of 33 kV lines, profile plotting, pole spotting and preparation of pole	Detail Survey of 33 kV lines, profile plotting, pole spotting and preparation of pole schedule	KM	40	40	40	40	40	
436	Detail Survey of 11kV lines, profile plotting, pole spotting and preparation of pole	Detail Survey of 11 kV lines, profile plotting, pole spotting and preparation of pole schedule	KM	40	40	40	40	40	
437	Erection of NBLs Tower Super Structure including tightening,punching & with transporttation etc.	Erection of NBLs Tower Super Structure including tightening,punching & with transporttation etc.	set	2	2	2	2	2	
438	Erection of PC + 6 Tower Super Structure including tightening,punching & with transporttation etc.	Erection of PC + 6 Tower Super Structure including tightening,punching & with transporttation etc.	set	2	2	2	2	2	
439	Erection of UR + 6 Tower Super Structure including tightening,punching & with transporttation etc.	Erection of UR + 6 Tower Super Structure including tightening,punching & with transporttation etc.	set	2	2	2	2	2	
440	Fixing of Vibration damper suitable for 7/3.15 mm GI Earth wire & 25x500 mm flexible	Fixing of Vibration damper suitable for 7/3.15 mm GI Earth wire & 25x500 mm flexible Cu. Earth bond.	set	10	10	10	10	10	
441	Fixing of Vibration damper	Fixing of Vibration damper suitable to any size AAAC/ACSR conductor.	set	10	10	10	10	10	
442	Laying of 11 Kv XLPE Cable Underground by HDD Method Under Railway Track for 30 Mtrs with Heat sink type cable end termination with HDPE Pipe	Laying of 11 Kv XLPE Cable Underground by HDD Method Under Railway Track for 30 Mtrs with Heat sink type cable end termination with HDPE Pipe	Mtr	6	6	6	6	6	

443	Laying of 11 Kv XLPE Cable Underground by HDD Method Under beyond Railway Track for 56 Mtrs inclusive of bothside of the Rail Track with Heat sink type cable end termination with HDPE Pipe	Laying of 11 Kv XLPE Cable Underground by HDD Method Under beyond Railway Track for 56 Mtrs inclusive of bothside of the Rail Track with Heat sink type cable end termination with HDPE Pipe	Mtr	11	11	11	11	11	
444	Sply & Inst straight Cross Arm for H Pole	Supply and Installation of GI straight cross arm(100x50x6 channel, Back clamp, F Bracket(Top Channel) suitable for H pole along with all required other accessories excluding nut-bolt etc. on HT pole for 33kv Line as per Drawing	Kg	24,000	24,000	24,000	24,000	24,000	
445	Installation of H Cross Arm in H pole	Installation of GI straight cross arm(100x50x6 channel, Back clamp, F Bracket(Top Channel) suitable for H pole along with all required other accessories excluding nut-bolt etc. on HT pole for 33kv Line as per Drawing	No's	1,000	1,000	1,000	1,000	1,000	
446	Supply of Chequerred plate 1000X300X5.6mm thick	BA has to Supply Chequerred plate 1000X300X5.6mm thick	Metric Ton	1	1	1	1	1	
447	Laying of chequerred plate 1000X300X5.6mm	BA will Lay the chequerred plate 1000X300X5.6mm thick with all required manpower & Tools	Metric Ton	1	1	1	1	1	
448	Supply of prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	BA will Supply of prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	QINT	2	2	2	2	2	
449	Supply of prefabricated RCC Slabs (1059x450x100)M30 Grade with supply of all civil material,Rods,bending &	BA will Supply of prefabricated RCC Slabs (1059x450x100)M30 Grade with supply of all civil material,Rods,bending & cutting	QINT	2	2	2	2	2	

450	Supply of 2 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Supply of 2 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
451	Supply of 4 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Supply of 4 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
452	Supply of 6 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Supply of 6 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
453	Supply of clamps service mains	Supply of clamps service mains	No's	400	400	400	400	400	
454	Supply terminal connectors at meter end	Supply terminal connectors for service wire	No's	400	400	400	400	400	
455	Laying of 2 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Laying of 2 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
456	Laying of 4 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Laying of 4 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
457	Laying of 6 inch PVC pipe heavy duty (schedule -80) for service cable laying.	Laying of 6 inch PVC pipe heavy duty (schedule -80) for service cable laying.	km	1	1	1	1	1	
458	Erection of clamps for service mains	Erection of clamps for service mains	No's	400	400	400	400	400	
459	Erection terminal connectors	Erection terminal connectors	No's	400	400	400	400	400	

460	Erection of 4 pole structure with 11mtr pole/13Mtr Pole	Installation/Erection/Construction of four Pole Structure with (13 Mtr/11Mtr /10Mtr long RS JOIST/WPB etc) (30.46 kg Per meter) The scope involves Transporting of Pole including loading and unloading, transportation from site/tent upto 10 Kms. fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (MS Angle installation 100X50X6mm & 75X75X6 etc) as per TP Central Orissa Distribution Co. Ltd. Drawing . .Fixing of Hardware Accessories, Earthing Connection, HT Stay connection, Concreting & Couping, foundation excavation will be paid separately	EA	40	40	40	40	40
461	Erection of Double pole structure with 13Mtr Pole	Installation/Erection/Construction of Double Pole Structure with (13 Mtr/11Mtr /10Mtr long RS JOIST/WPB etc) (30.46 kg Per meter) The scope involves Transporting of Pole including loading and unloading, transportation from site/tent upto 10 Kms. fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (MS Angle installation 100X50X6mm & 75X75X6 etc) as per TP Central Orissa Distribution Co. Ltd. Drawing . .Fixing of Hardware Accessories, Earthing Connection, HT Stay connection, Concreting & Couping, foundation excavation will be paid separately	EA	40	40	40	40	40
462	Erection of Double pole structure with 11Mtr Pole	Installation/Erection/Construction of Double Pole Structure with 11Mtr long RS JOIST/WPB etc.(30.46 kg Per meter) The scope involves Transporting of Pole including loading and unloading, transportation from site/tent upto 10 Kms. fixing of base plate, fixing of clamps, iron fittings, steel fabricated work , different size of MS Angle installation 100X50X6mm & 75X75X6 etc as per TP Central Orissa Distribution Co. Ltd. Drawing . .Fixing of Hardware Accessories, Earthing Connection, HT Stay connection, Concreting & Couping, foundation excavation will be paid separately	EA	40	40	40	40	40

463	Erection of Double pole structure with H- Pole	Erection of DP Structure with 14 Mtr/13Mtr Long DP Structure Using GI- H-Pole (by using 2 Nos 200 x 75 x 7.5 mm Channel) with GI Channel, GI Angle for Bracing, etc (Total Wt of DP Structure - 2.0104 MT) .Installation/Erection/Construction of Double Pole Structure with Hpole (13 Mtr/14Mtr etc) (56 kg Per meter) The scope involves Transporting of Pole including loading and unloading, transportation from site/tent upto 10 Kms. fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (MS Angle installation 100X50X6mm & 75X75X6 etc) as per TP Central Orissa Distribution Co. Ltd. Drawing Fixing of Hardware Accessories, Earthing Connection, HT Stay connection, Concreting & Couping, foundation excavation will be paid	No's	40	40	40	40	40	
464	Excavation of Earth for GI RS Joist/H Pole/PSC Pole	BA has to excavate the earth for fixing RSJoist/WPB/PSC pole by providing necessary Manpower & Tools & Tackles	cum	400	400	400	400	400	
465	Laying of GI Flat	BA will lay Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) or 40x6 GI Flat for Raiser from the burial earth mat to equipment, structure etc)	KM	2	2	2	2	2	
466	Installation& Fabrication of GI Channel	BA has to do the installation,welding & fabrication work of different size GI Channel(100x50x6mm, 75x75x6mm, 50x50x6mm,75X40X4.6mm etc) as per size requirement	Kg	10,000	10,000	10,000	10,000	10,000	
467	Installation of LT Shackle Insulator	Installation of LT shackle Insulator .BA has to provide all necessary Manpower , Tools & Tackles	No's	2,000	2,000	2,000	2,000	2,000	
468	Installation of LT Pin Insulator	Installation of LT pin Insulator with GI Pin .BA has to provide all necessary Manpower , Tools & Tackles	No's	2,000	2,000	2,000	2,000	2,000	
469	Installation of LT Cross Arm	Installation of LT Cross arm with Back clamp .BA has to provide all necessary Manpower , Tools & Tackles	No's	2,000	2,000	2,000	2,000	2,000	
470	Supply of PG Clamp for 148sqmm AAAC/ACSR	BA will supply of PG Clamp for 148sqmm AAAC as per IS	No's	200	200	200	200	200	
471	Supply of PG Clamp for 100sqmm AAAC/ACSR	BA will supply of PG Clamp for 100sqmm AAAC as per IS	No's	200	200	200	200	200	
472	Supply of PG Clamp for 232sqmm AAAC/ACSR	BA will supply of PG Clamp for 232sqmm AAAC as per IS	No's	200	200	200	200	200	

473	Supply of T Clamp for 100sqmm AAAC/ACSR	BA will supply of T Clamp for 100sqmm AAAC as per IS	No's	100	100	100	100	100	
474	Supply of T Clamp for 232sqmm AAAC/ACSR	BA will supply of T Clamp for 232sqmm AAAC as per IS	No's	100	100	100	100	100	

Annexure-1C
Manufacturer Details for Global RC

Sl. No	Description of Material/ Equipment	Manufacture Name
1	PSC Pole	Konark / Metro poles/ Baba Akhandalmanni / Balaji PSCC-Khurda/Sai Saran - Anugul/ Gautam Cements , Jharsuguda
2	WPB / RSJ Pole	Dharam INDUSTRIES/ K L Steel / Vijay Transmission /Supreme
3	SMC Distribution Box	1) M/s Sanskriti composites PVT. Ltd., Hoogly 2) Plastotech 3) Neelu Packaging 4) M/s Sintex Industries Ltd., Kalal, Gujrat / 5) M/s Macedon, Howrah
4	LTDB	M/s Bose engineering (India) PVT. Ltd., Kolkata M/s S R Automation PVT. Ltd., Kolkata M/s J.D Electrical products PVT. Ltd., Howrah
5	Earthing Coil	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, Industrial Forging, Howrah
6	GI wire , Stay wire , Barbed wire	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, Industrial Forging, Howrah
7	Hardware fittings	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, Industrial Forging, Howrah KSE electrical
8	LT AB cable	M/s Gupta power Infrastructure, Khurda M/s Luminous Cable. , Howrah M/s Havells India M/s Raychem RPG M/s Paramount
9	SUPPLY OF HT/ LT ABC HARDWARE	KSE ELECTRICAL RAYCHEM RPG SICAME INDIA 3M ELECTRO & COMMUNICATION
10	HT & LT stay set, V cross arm & clamp	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, Industrial Forging, Howrah
11	PVC wire	M/s Gupta power (Rhino), Khurda M/s Havell M/s Polycab
12	GI Pin	M/s Supreme , Howrah, Shakti enterprises Pvt.Ltd. M/s KSE

13	HT Cable (11KV & 33KV)	M/s Gupta power, M/s KEI M/S GEMSCAB M/S Sterlite M/s Torrento
14	12KV, 10KA Polymeric Lighting ARRESTOR	CGL/OBLUM/LAMCO/SCHNEIDER/ELPRO International/ Electrolites power pvt. Ltd / Raychem / Rashtriya Chemical / Hindustan Chemical/Industrial Forging / compact International Pvt Ltd
15	AB SWITCH/ HG Fuse	Pramoda Engineering works/Ultima Switchgears/ Rahul electrical/High Tension Electricals, Howrah/ Hindustan Electrical Equipment Pvt Ltd, Howrah
16	PVC Insulated Power and control cables	NICCO/GLOSTER/CCI/KEI/CRYSTAL/ POLYCAB/ GPIL/ FINOLEX / Universal/ Havels India Ltd. / KEC International Ltd. / Daksha Industries / V guard/ Scoot innovation/ GEMSCAB/ Mohta Electro system/ Paramaount communication ltd./ Radiant Cables/ Rabin Cables/ Sterlite technologies ltd.
17	HT XLPE Cable (11KV & 33KV)	Polycab wires pvt. Ltd./ Gupta power infrastructure ltd./ KEI industries ltd./ Sterlite technologies ltd./ APAR/ Universal cables/ Finolex cables ltd./ KEC international ltd. / Torrent Cables Ltd.
18	Cable jointing Kit	RPG Raychem /3M /
19	STEEL structure	TATA/ SAIL/RINL/ Jindal steel & Power
20	11KV Polymer Pin INSULATOR	Rashtriya Chemical/ Hindustan Chemical / Scenario/Hub International/Adinath Industries/ Prime Insulator/ Imperial proclein Pvt Ltd
21	11KV Polymer Disc INSULATOR	Rashtriya Chemical/ Hindustan Chemical / Scenario/Hub International/Adinath Industries/ Prime Insulator/ Imperial proclein Pvt Ltd
22	Pole CLAMP / CONNECTORS	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, M/s Industrial Forging,Howrah
23	GI Bolts & Nuts	NEXO/ GKW / ASP / Maheswari (P) Fasterns & Bright Pvt. Ltd./ Agarwal Fastners/ Techman India / Millenium structurals (India) Ltd. / Strelling Bolts Pvt. Ltd. / Pankaj International/ Ravi Engineers / Precission fasterns ltd / Deepak Fasners Ltd/ Fit Right Nut and Bolts Pvt Ltd./ Bharat Industries/ Karamtara Fastners Pvt Ltd./ Bolt Master (india) / JC fastners / DFL international / Bharati Overseas / Remax India/ Forex Fastners / Sudhir Automative industries / Av forgings / Anshika Fastners / Durafast Automatives/ HR steel industries / LPS Bossard / Paramhari engineers / Turbo Industries/ Roshan Impex/ Istiva Fastners / Garg & Fastners
24	GI PIPE	TATA/JINDAI

25	GI Earth Wire	Aaarti Steels Ltd. Manohar Lal Hira Lal Ltd/ Ramswarup Industrial Corporation/ Usha Martin Industries/ Tate Iron & Steel Ltd/ Ratlam Wires Pvt Ltd/ Bharat Wire Ropes Ltd/ Kataria Wires Pvt Ltd/ Bajrang Wires Products Pvt Ltd/ RK Wire Product Ltd / Balaji Wires Pvt Ltd/ GK wires/ GPIL / UIC Udyog Limited / Kartika Wires (P) Ltd.
26	MCB	L & T / ABB / SIEMENS/ MDS/ HAVELLS / INDOASIAN / Standard Electrical / Schneider / Legrand / Indo kopp / CGL / M&G / MERLIN GERIN / C&S Electric
27	ACB/MCCB	L & T / SIEMENS/ MERLIN GERIN / GE Power Control/ ABB/ CGL / M&G /KM/ C&S Electric / BCH Electric/ ERA Electricals / HPL India / Soaceaae Switchaeears / Schneider Electric
28	PVC WIRES	L & T / FINOLEX / ANCHOR / HAVELLS
29	SWITCHES	ANCHOR/ ABB/ CONA / HAVELLS / INDOASIAN / Schneider
30	FIRE FIGHTING EQUIPMENT	MINIMAX / CEASE FIRE /Kanadia Fyr Fyter Pvt. Ltd/ Aska Equipment Ltd / NITIN / LIGHTEX / Safex Services Ltd / Zenith
31	CONDUCTOR	APAR / GPIL / Lumino / Cabcon/ Polycab wires
32	V Cross Arm	M/s Hightension Electrical equipment pvt. Ltd. , Howrah M/s Rahul electrical, Howrah, M/s Industrial Forging,Howrah
33	Power cable/Control cable	Cabcon India Pvt Ltd., Howrah / Premier Cable / Vikas cable / RTS Power Corporation, Kolkata
34	Insulated Piercing connector	Sicame India connector / KSE/ Raychem
35	1.1kV Power Cables & LT Power Cables	KEC International
		Universal Cables Limited
		Finolex
		Nicco Corporation Limited
		Polycab
		Ravin Cables
		Gemscab Industries
		KEI
		KEI
CCI		
	Control Cables	KEC International
		Universal Cables Limited
		Finolex
		Torrent
		Nicco Corporation Limited
		Ravin Cables
		Reliance Engineers
		Thermo Cables
		Cords Cable Industries Ltd

36		Gemscab Industries
37	HT & LT Cable termination & Jointing kit	3M RAYCHEM
38	SUPPLY OF BIRD CAP	PLASTOCHEM RAYCHEM RPG
39	SUPPLY OF BIRD GUARD	ASIAN LOTO CORPORATION DHARAM INDUSTRIES HUGHES & HUGHES CHEM MANGAL ENTERPRISES NAMDHARI INDUSTRIAL TRADERS RAHUL POWERTECH YOGYATA ELECTRIC
40	SUPPLY OF CABLE TIE	MANGAL ENTERPRISES NOVOFLEX MARKETING RIPKON TRADEWINGS

Annexure-1D

Preference of Circle to Work for Tender No. TPCODL/P&S/1000000049/21-22

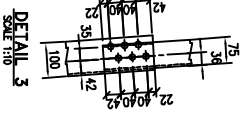
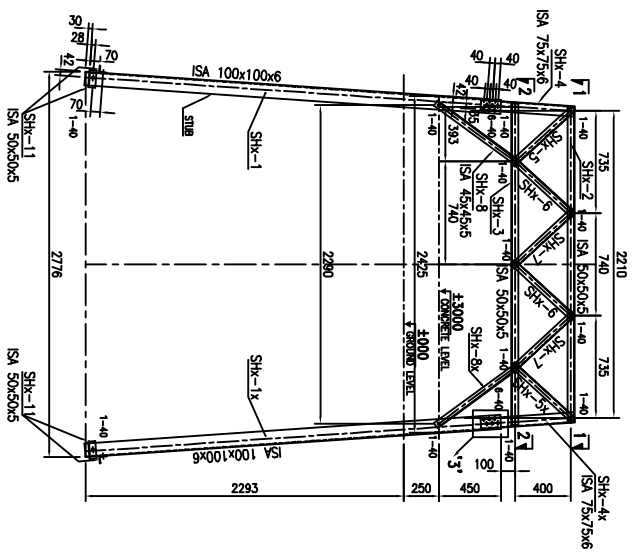
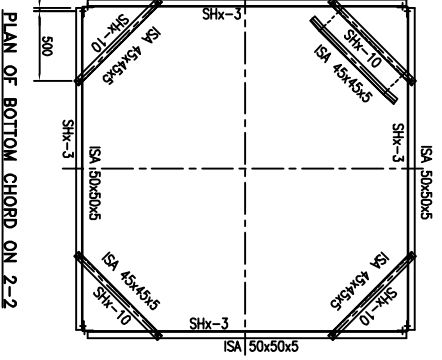
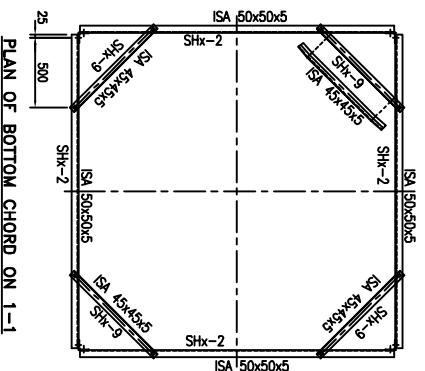
Name of Bidder:

Even though we have submitted our offer for all the 5 separate lots provided for each of 5 Circles of TPCODL, our preference of choosing any Particular Circle is as follows:

Sl. No.	Circle Name	Preference to work (Rank 1 to 5)
1		
2		
3		
4		
5		

Note: It is mandatory to fill all the details from Sl. No. 1 to 5. Rank 1 is more preferred to Rank 2 and so on.

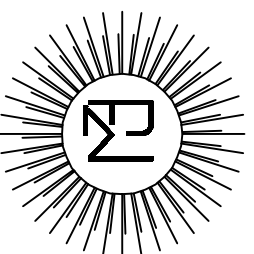
Signature of the Bidder with Office Seal



ITEM NO.	DESCRIPTION	LENGTH	QTY.	UNIT W/T	IN KG.	TOTAL WT.
SHK-1	ISA 100x100x6	3000	2	9.2	27.6	55.20
SHK-1x	ISA 100x100x6	3000	2	9.2	27.6	55.20
SHK-2	ISA 50x50x5	2260	4	3.8	18.6	34.56
SHK-3	ISA 50x50x5	2315	4	3.8	18.6	36.19
SHK-4	ISA 75x75x6	678	2	6.8	4.6	9.15
SHK-4x	ISA 75x75x6	678	2	6.8	4.6	9.15
SHK-5	ISA 45x45x5	592	4	3.4	7.0	8.05
SHK-5x	ISA 45x45x5	592	4	3.4	7.0	8.05
SHK-6	ISA 45x45x5	592	0	3.4	7.0	14.72
SHK-6x	ISA 45x45x5	592	0	3.4	7.0	14.72
SHK-7	ISA 45x45x5	592	0	3.4	7.0	14.72
SHK-7x	ISA 45x45x5	592	0	3.4	7.0	14.72
SHK-8	ISA 45x45x5	732	4	3.4	2.9	9.96
SHK-8x	ISA 45x45x5	732	4	3.4	2.9	9.96
SHK-9	ISA 45x45x5	846	4	3.4	7.9	11.51
SHK-10	ISA 45x45x5	846	4	3.4	7.9	11.51
SHK-11	ISA 50x50x5	128	8	3.8	0.5	3.80
TOTAL						292.98

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
2. ALL STRUCTURAL MEMBERS SHALL CONFORM TO IS:2062 (LATEST)
3. ALL MEMBERS TO BE HOT DEEP GALVANISED AFTER FABRICATION.
4. ALL HOLE SHALL BE 17.5% UNLESS OTHERWISE NOTED.
5. ALL BOLT SHALL BE M16 UNLESS OTHERWISE NOTED.

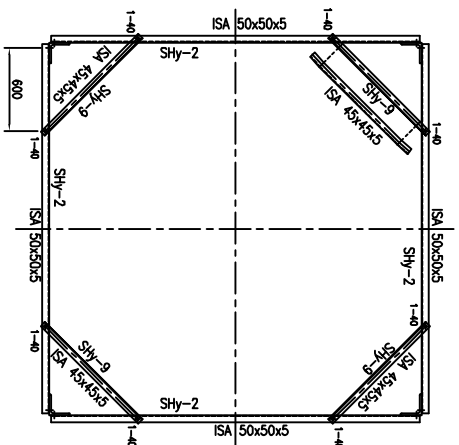


TITLE : Tem plate Assembly Drawing of 33 KV D/C 60° Angle Hr Type Tower

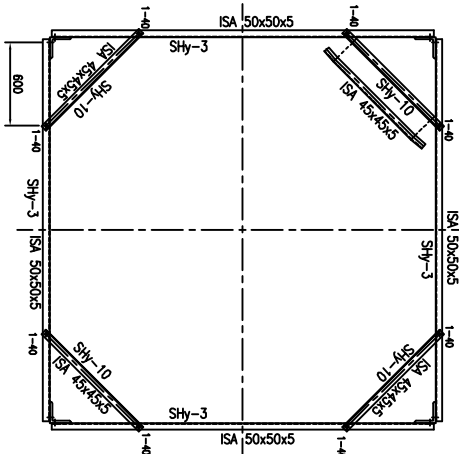
Drawing No. : PEW/T/01 **REV :** 0 **SCALE :** 1:25
Drawn By : T. Roy **Date :** 01.03.16 **SHEET :** 1 of 1

BOLT NUT & WASHERS		
LENGTH	QTY.	
A = M16x40 lg	100	
HEX NUT M16	100	
WASER FOR M16 BOLT	100	

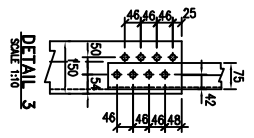
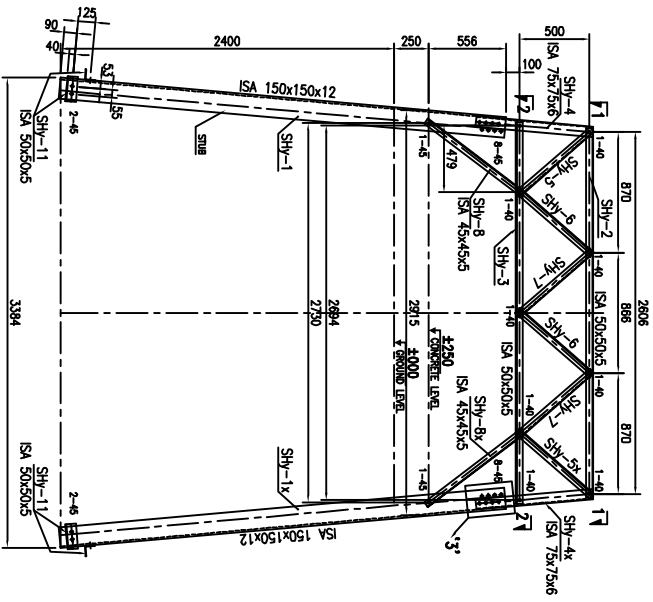
PROJECT : BBSR Project, CBSU
CONTRACTOR : AKHANDALAMANT ELECTRICALS & CONSTRUCTION,
 MAHABADI VIHAR, CUTTACK-4, ODISHA
MANUFACTURED BY : Prakash Engineering Works



PLAN OF BOTTOM CHORD ON 1-1



PLAN OF BOTTOM CHORD ON 2-2

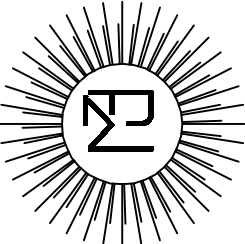


BOLT NUT & WASHER	
LENGTH	QTY.
A = M16x5 lg.	88
B = M16x10 lg.	52
HEX NUT M16	140
WASHER FOR M16 BOLT	140

ITEM NO.	DESCRIPTION	LENGTH	QTY.	UNIT WGT.	IN.KG.	TOTAL P.WT.
SHY-1	ISA 150x150x12	3218	2	27.3	87.8	175.70
SHY-2	ISA 50x50x5	3218	2	27.3	87.8	175.70
SHY-3	ISA 50x50x5	2055	4	3.8	10.1	40.37
SHY-4	ISA 50x50x5	2744	2	6.8	10.4	41.78
SHY-5	ISA 75x75x8	848	2	6.8	5.7	11.48
SHY-6	ISA 75x75x8	848	2	6.8	5.7	11.48
SHY-7	ISA 45x45x5	713	4	3.4	2.4	9.70
SHY-8	ISA 45x45x5	713	4	3.4	2.4	9.70
SHY-9	ISA 45x45x5	713	8	3.4	2.4	19.38
SHY-10	ISA 45x45x5	713	8	3.4	2.4	19.38
SHY-11	ISA 45x45x5	870	4	3.4	3.0	11.83
SHY-12	ISA 45x45x5	870	4	3.4	3.0	11.83
SHY-13	ISA 45x45x5	990	4	3.4	3.4	13.48
SHY-14	ISA 45x45x5	990	4	3.4	3.4	13.48
SHY-15	ISA 50x50x5	180	8	3.8	0.7	5.47
TOTAL						570.61

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
2. ALL STRUCTURAL MEMBERS SHALL CONFORM TO IS:2062 (LATEST)
3. ALL MEMBERS TO BE HOT DEEP GALVANIZED AFTER FABRICATION.
4. ALL HOLE SHALL BE 17.5% UNLESS OTHERWISE NOTED.
5. ALL BOLT SHALL BE M16 UNLESS OTHERWISE NOTED.



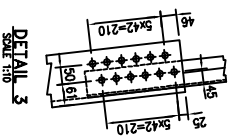
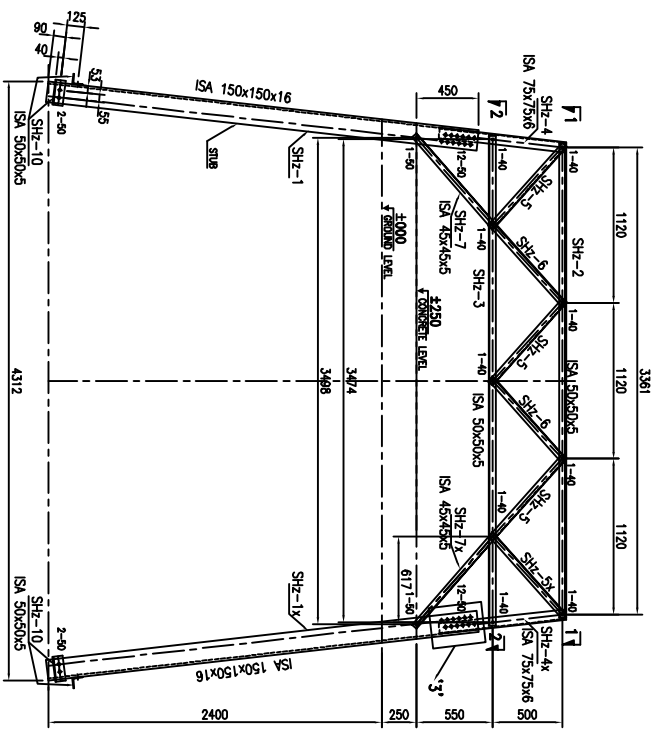
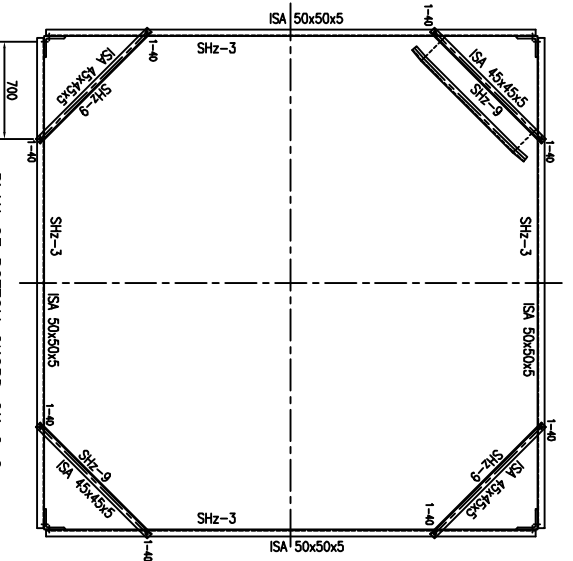
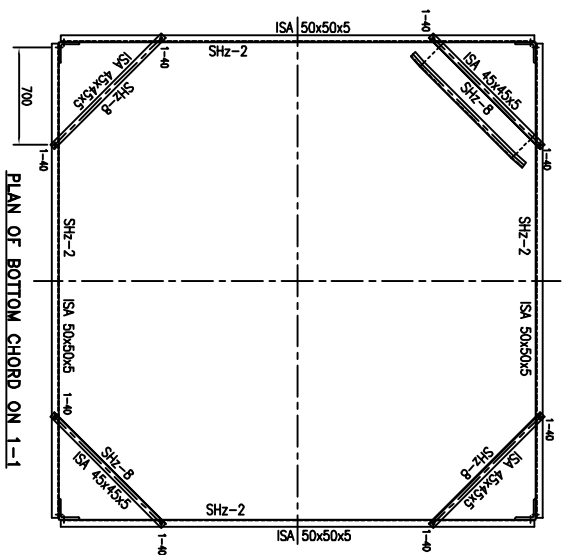
TITLE : Tem plate Assembly Drawing of 33 Kv D/C 60° Angle Hy Type Tower

Drawing No. : PEW/T/01 **REV :** 0 **SCALE :** 1:25
Drawn By : T. Roy **Date :** 01.03.16 **SHEET :** 1 of 1

PROJECT : BSR Project, CESU

CONTRACTOR : ARIYANDAMANT ELECTRICALS & CONSTRUCTION,
 MAHAVADI VIHAR, CUTTACK-4, ODISHA

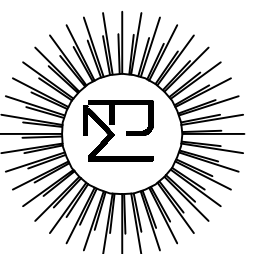
MANUFACTURED BY : Prakash Engineering Works



ITEM NO.	DESCRIPTION	LENGTH	QTY.	UNIT WT.	IN KG.	TOTAL WT.
SHz-1	ISA 150x150x16	3178	2	35.8	111.7	223.32
SHz-1x	ISA 150x150x16	3179	2	35.9	111.7	223.32
SHz-2	ISA 50x50x5	3411	4	3.8	13.0	51.85
SHz-3	ISA 50x50x5	3524	4	3.8	13.4	53.56
SHz-4	ISA 75x75x6	917	2	6.8	6.2	12.47
SHz-4x	ISA 75x75x6	917	2	6.8	6.2	12.47
SHz-5	ISA 45x45x5	801	12	3.4	2.7	32.68
SHz-5x	ISA 45x45x5	801	4	3.4	2.7	12.04
SHz-6	ISA 45x45x5	801	8	3.4	2.7	21.79
SHz-7	ISA 45x45x5	885	4	3.4	3.0	12.04
SHz-7x	ISA 45x45x5	885	4	3.4	3.0	12.04
SHz-8	ISA 45x45x5	1131	4	3.4	3.8	15.38
SHz-9	ISA 45x45x5	1131	4	3.4	3.8	15.38
SHz-10	ISA 50x50x5	180	8	3.8	0.7	5.47
TOTAL						702.66

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
2. ALL STRUCTURAL MEMBERS SHALL CONFORM TO IS:2092 (LATEST)
3. ALL MEMBERS TO BE HOT DEEP GALVANISED AFTER FABRICATION.
4. ALL HOLE SHALL BE 17.5φ UNLESS OTHERWISE NOTED.
5. ALL BOLT SHALL BE M16 UNLESS OTHERWISE NOTED.



TITLE : Tem plate Assembly Drawing of
33 Kv D/C 60° Angle Hz Type Tower

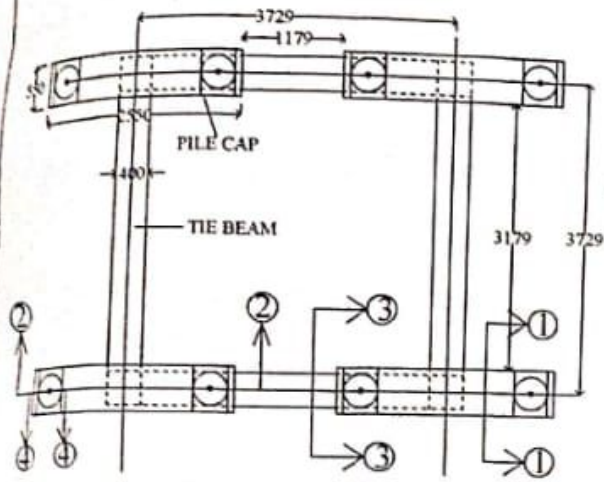
Drawing No. : PEW/T/01 **REV :** 0 **SCALE :** 1:25
Drawn By : T. Roy **Date :** 01.03.16 **SHEET :** 1 of 1

PROJECT : BSR Project, CESU

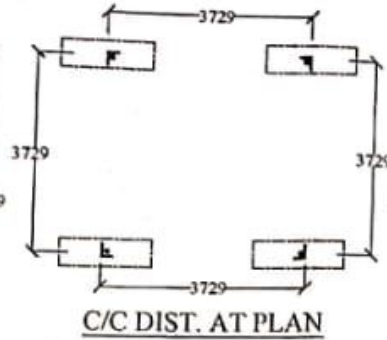
CONTRACTOR : AKHANDALAMANT ELECTRICALS & CONSTRUCTION,
MAHARAJI VIHAR, CUTTACK-4, ODISHA

MANUFACTURED BY : Prakash Engineering Works

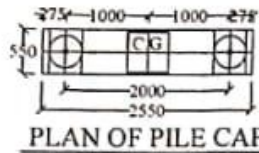
BOLT NUT & WASHERS		
LENGTH	QTY.	
A = M16x40 lg	120	
B = M16x40 lg	52	
HEX NUT M16	172	
WASER FOR M16 BOLT	172	



VIEW OF TIE BEAM FROM TOP

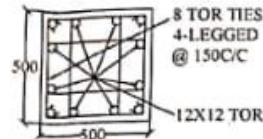
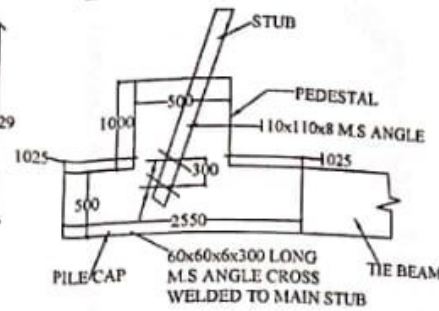


C/C DIST. AT PLAN



PLAN OF PILE CAP

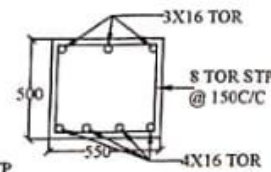
DETAILS OF STUB



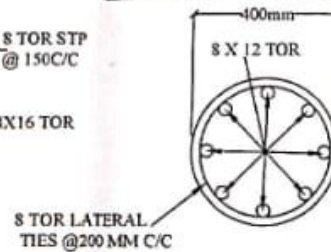
SECTION AT B-B

- NOTES:-
1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES.
 2. CONCRETE GRADE SHALL BE M20 AS PER IS:456-2000.
 3. REINFORCEMENT SHALL BE Fe:500 GRADE ACCORDING TO IS:1786-1985.
 4. CLEARCOVER TO ALL REINFORCEMENT:-
 - a. PILE ON ALL SIDES = 50 MM
 - b. PILE CAP AT ALL SIDES = 50 MM
 - c. TIE BEAM AT ALL SIDES = 50 MM
 5. MINIMUM LAP LENGTH SHOULD BE 50 TIMES DIA. OF BAR UNLESS OTHERWISE MENTIONED AND SHALL BE STAGGERED, WHERE WELDING IS REQUIRED, MINIMUM LAP LENGTH = 10D
 6. FOLLOWING CODES HAVE BEEN REFERRED FOR DESIGN PURPOSE.
 - i) IS - 2011(part - 1/SEC - 2) - 1979
 - ii) IS - 456-2000.
 - iii) IS - 2911 (Part - III-1980)
 - iv) IS - 2911(Part - IV-1985)
 - v) SP - 16, DESIGN AIDS
 7. CENTRE TO CENTRE DISTANCE OF STUB AT CONCRETE LEVEL MAY BE ASCERTAINED FROM TOWER MANUFACTURER BEFORE LAY-OUT OF PILE.

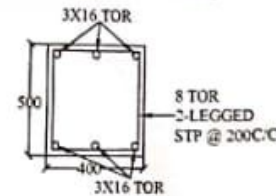
C.S.OF PILE CAP (1-1)
SIZE = (550 X 500)MM



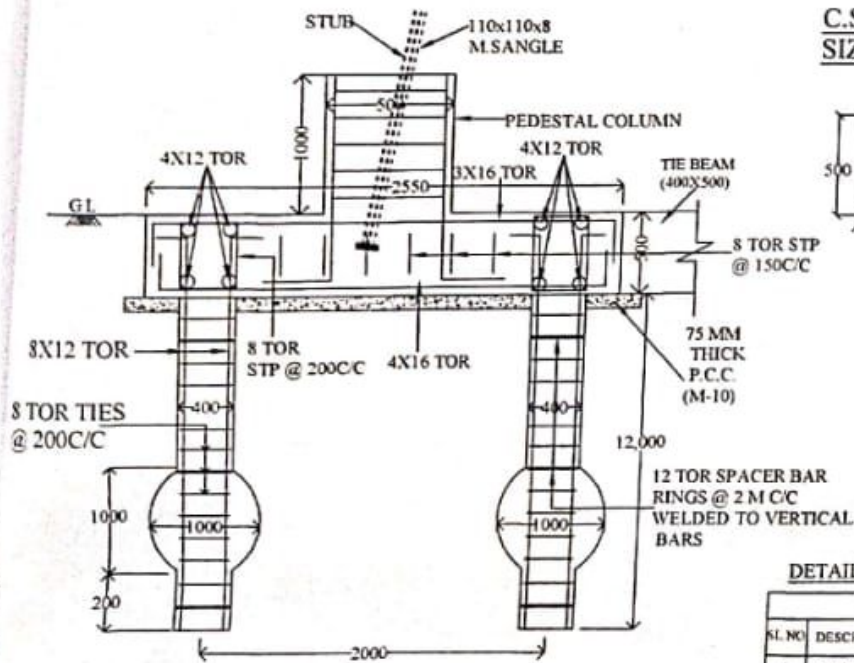
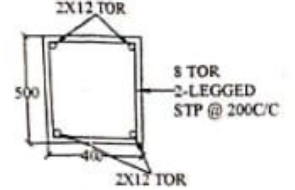
CROSS SECTION OF PILE



C.S.OF TIE BEAM (3-3)
SIZE = (400 X 500)MM



C.S.OF CROSS BEAM(4-4)
SIZE = (400 X 500)MM



L.S.OF PILE CAP (2-2)

DETAILS OF DESIGN LOADS OF TOWER (HZ+3)

HZ+3- TYPE TOWER			
Sl. No.	DESCRIPTION OF LOADING PATTERN	NORMAL CONDITION	BROKEN WIRE CONDITION
1	MAXIMUM DOWNWARD THRUST	10.0 TON	11.0 TON
2	MAXIMUM UPLIFT	9.0 TON	10.0 TON
3	MAXIMUM SIDE THRUST	1.0 TON	1.50 TON
4	FACTOR OF SAFETY	2.2	1.5

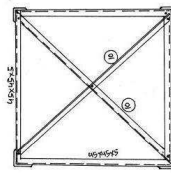
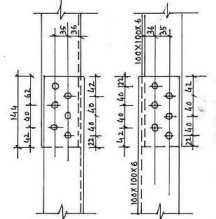
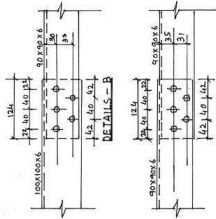
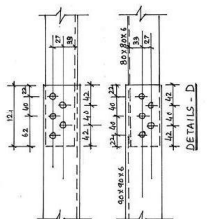
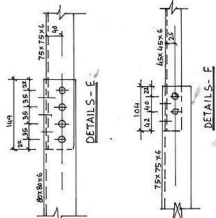
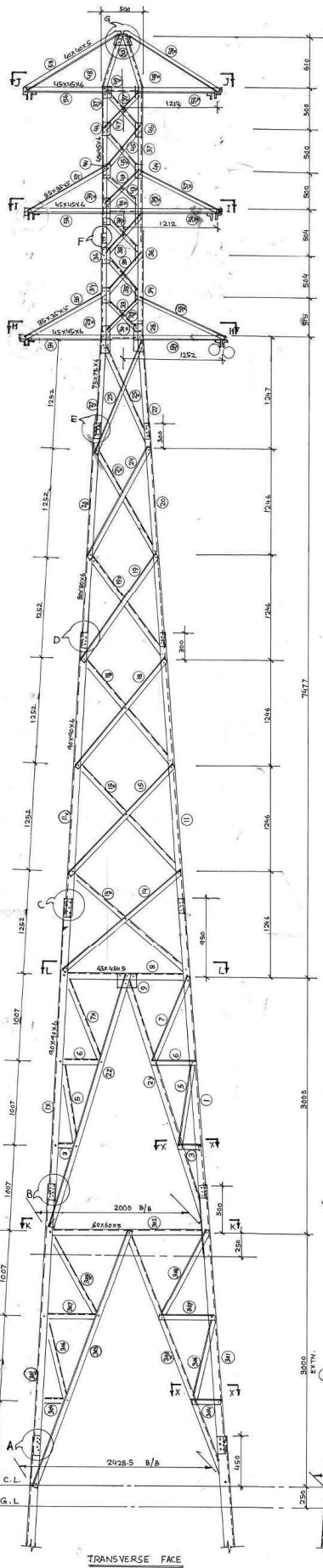
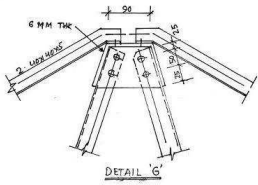
PROJECT:-
DESIGN OF PILE FOUNDATION, PILE CAP, TIE BEAM FOR 33KV HZ+3 TYPE NBLs TOWER FOR DIVERTING THE 33KV SISUBHAWAN & BADAMBADI FEEDER CDD-1, CUTTACK
(LOCATION NO.-02)

SUBMITTED TO:- CHIEF GENERAL MANAGER
CESU, BHUBANESWAR

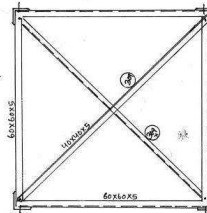
AGENCY:- AKHANDALAMANI ELECTRICAL & CONSTRUCTION
PLOT NO -1566, MAHANADI VIHAR,
NAYABAZAR, CUTTACK.

R & ASSOCIATES
491/2, Sahas
Bhubaneswar

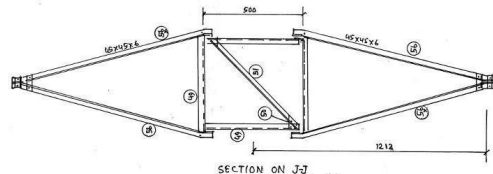
CONSULTANT:-
R&P ASSOCIATES
491/2, SAHIDNAGAR
BHUBANESWAR



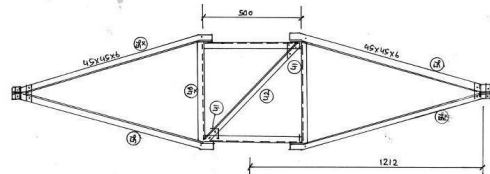
SECTION ON I-I



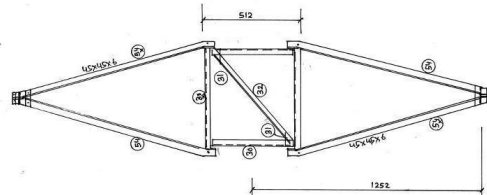
SECTION ON K-K



SECTION ON J-J



SECTION ON L-L



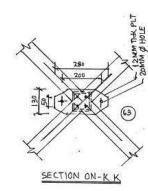
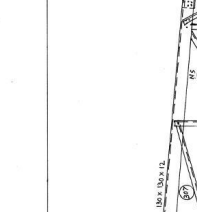
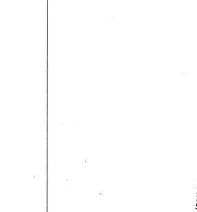
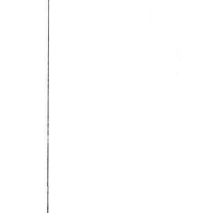
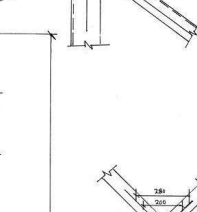
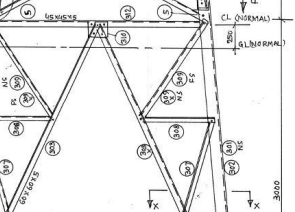
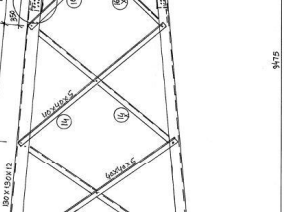
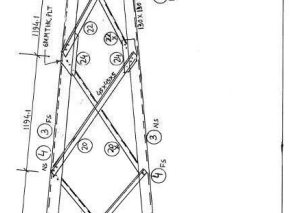
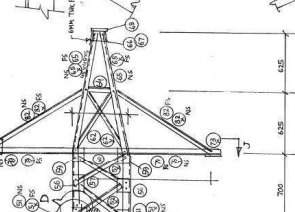
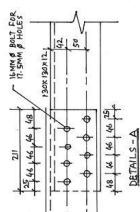
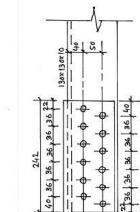
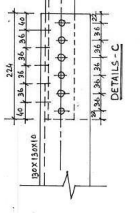
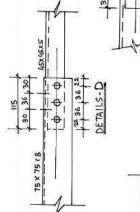
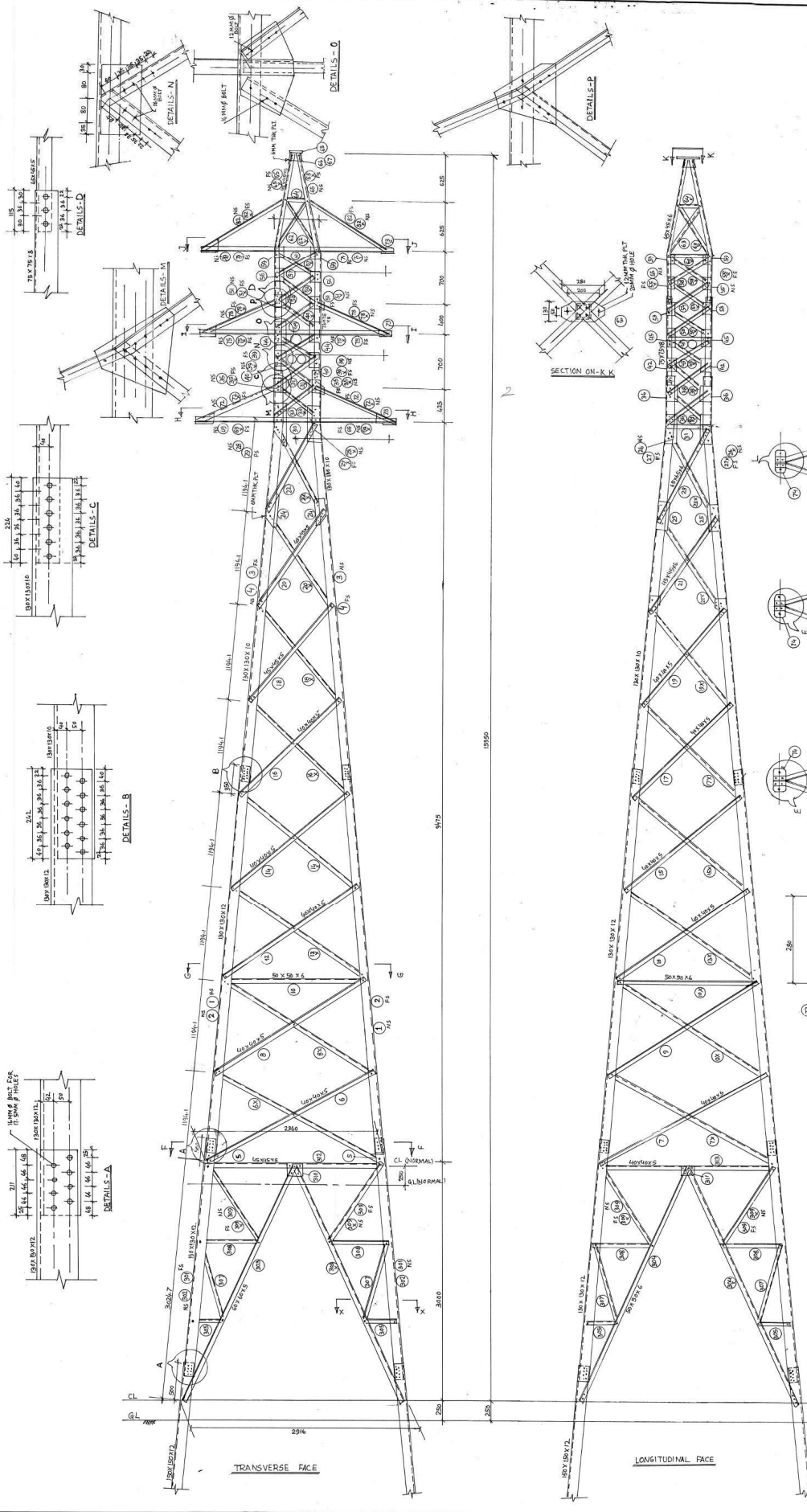
SECTION ON H-H



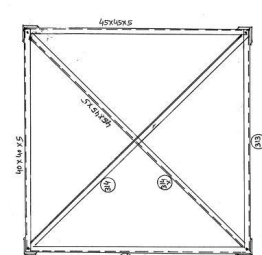
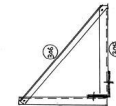
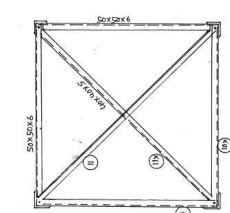
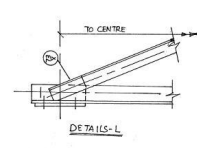
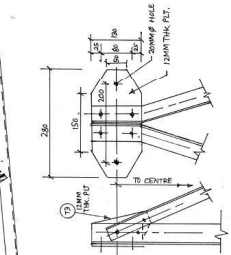
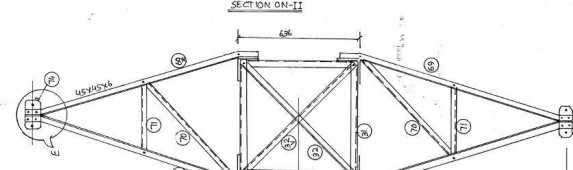
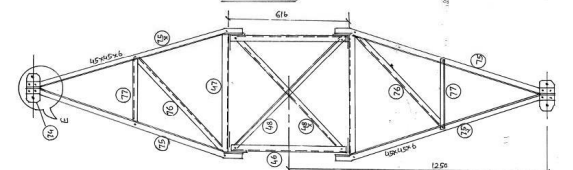
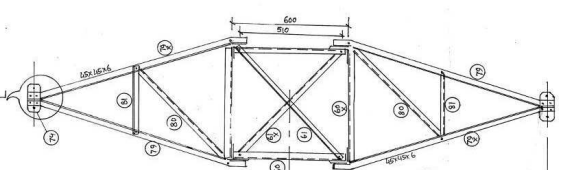
SECTION ON X-X

NOTES:-
 1. ALL DIMENSIONS ARE IN MM.
 2. ALL ANGLES ARE OF IS 200 OR 100 ROLL.
 3. ALL BOLTS ARE OF IS 200 OR 100 ROLL.
 4. ALL WELDED JOINTS ARE TO BE WELDED TO THE FULL PENETRATION.
 5. ALL DIMENSIONS ARE TO BE TAKEN FROM THE FACE UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO BE TAKEN FROM THE FACE UNLESS OTHERWISE SPECIFIED.
 7. MIN. CRACK DISTANCE OF HOLE FROM PLATE CUT EDGE TO BE NOT LESS THAN 25 MM.

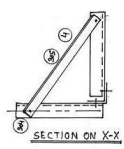
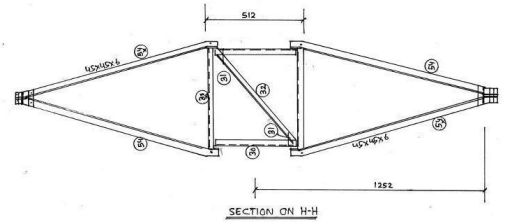
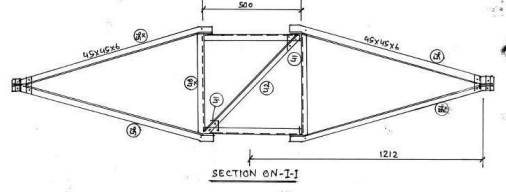
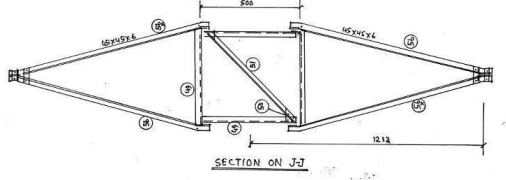
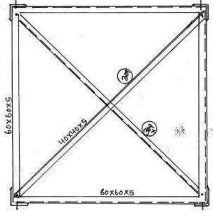
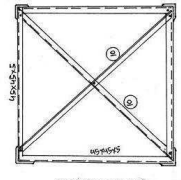
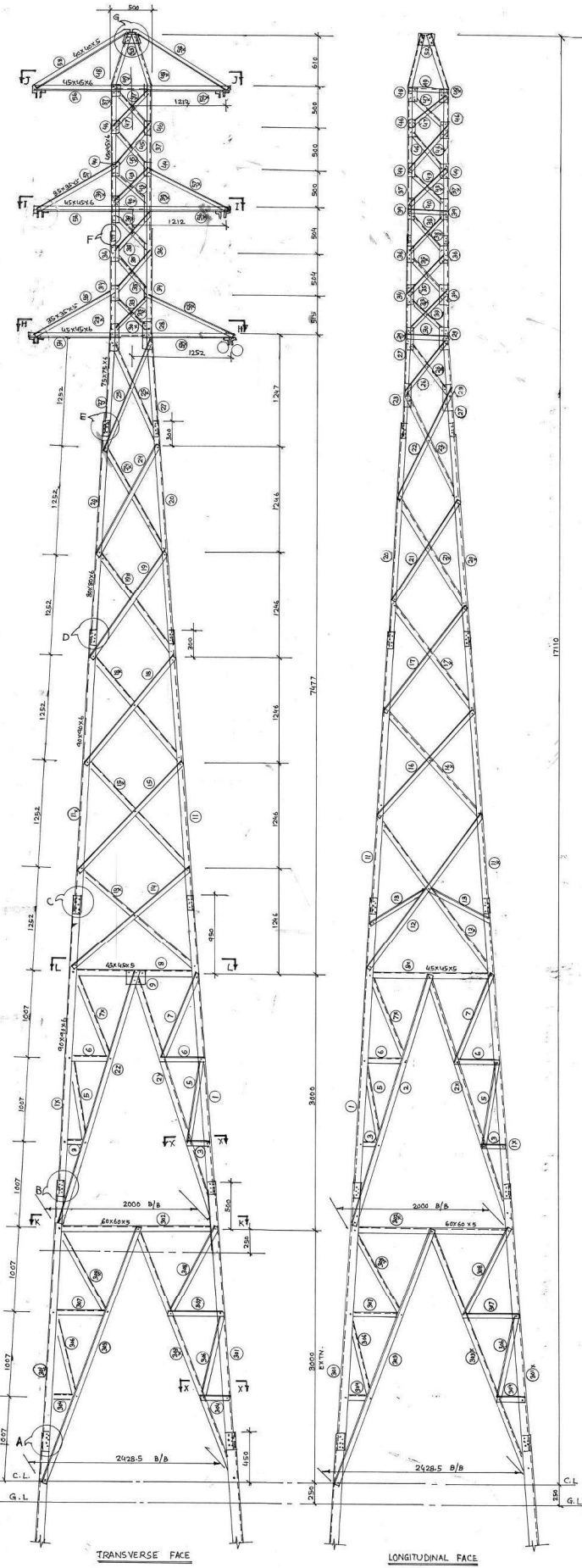
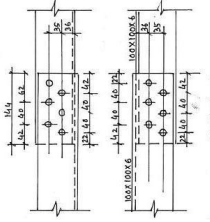
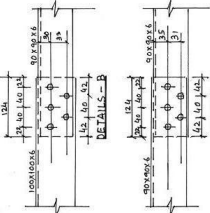
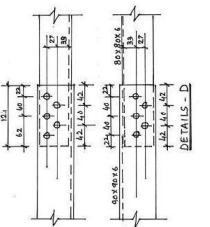
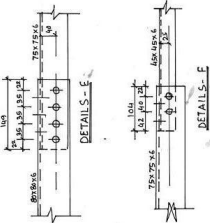
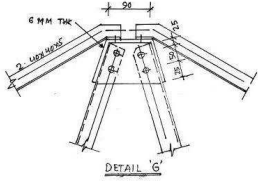
NAME OF THE CUSTOMER :	ORISSA POWER TRANSMISSION CORPORATION LIMITED
NAME OF THE CONSULTANT :	POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED.
TITLE :	STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C TANGENT HX TYPE TOWER
DRG. NO. :	OPTCL/SCRIPS/LINE/TOWER/06
SCALE :	1:200, 1:15 & 1:5



NOTES:
 1. ALL DIMENSIONS ARE IN MM.
 2. ALL GUSSETS ARE 10MM THK UNLESS NOTED OTHERWISE.
 3. ALL BOLTS ARE M20 UNLESS NOTED OTHERWISE.
 4. ALL BOLTS ARE TO BE KEPT 30MM FROM THE EDGE OF THE MEMBER UNLESS NOTED OTHERWISE.
 5. ALL WELDED JOINTS ARE TO BE KEPT 30MM FROM THE EDGE OF THE MEMBER UNLESS NOTED OTHERWISE.
 6. MIN. COVER DISTANCE OF HOLE FROM ROLLED EDGE TO BE KEPT 40MM.
 7. MIN. COVER DISTANCE OF HOLE FROM FLANGE BUTT JOINT TO BE KEPT 40MM AND 25MM FOR D/W AND G/W BUTT JOINTS RESPECTIVELY.

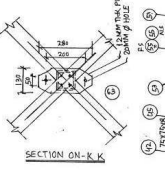
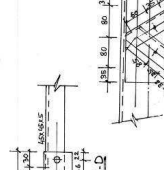
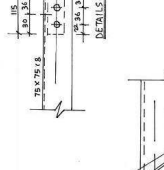
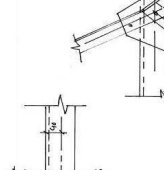
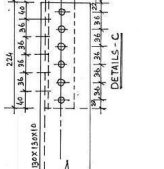
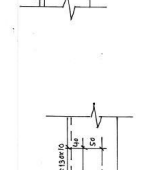
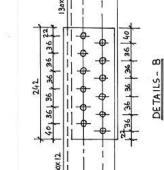
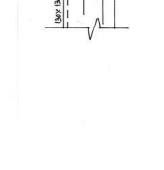
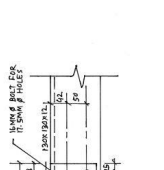
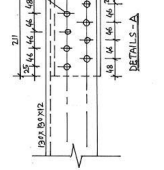
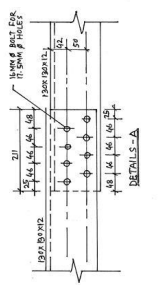
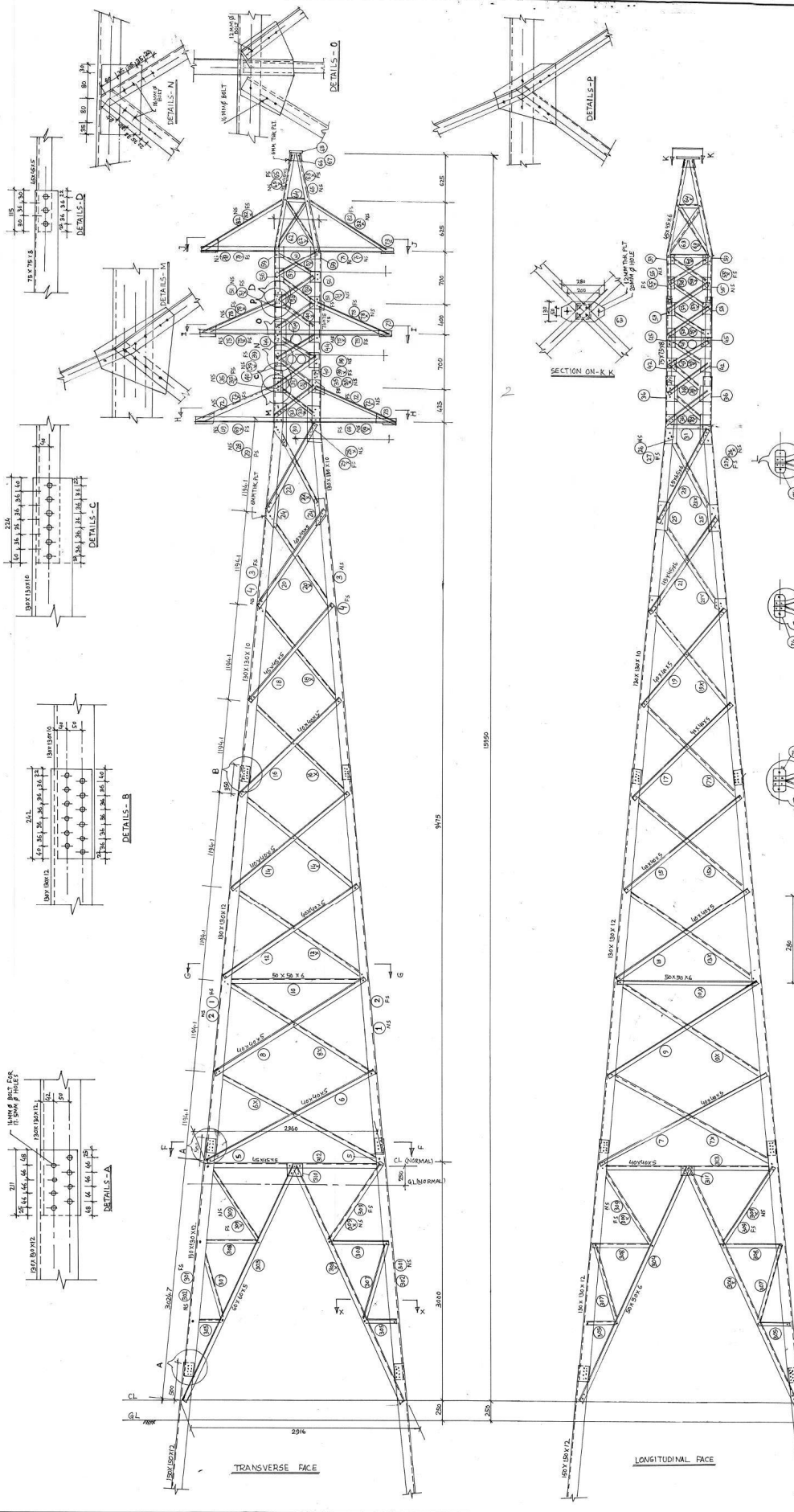


NAME OF THE CUSTOMER: ORISSA POWER TRANSMISSION CORPORATION LIMITED
NAME OF THE CONSULTANT: POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
TITLE: STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C 30° ANGLE H ₁ TYPE TOWER
SCALE: 1:20 (H ₁ & H ₅)
FIG. NO.: DPTCL/SRIP/LINE/TOWER/07

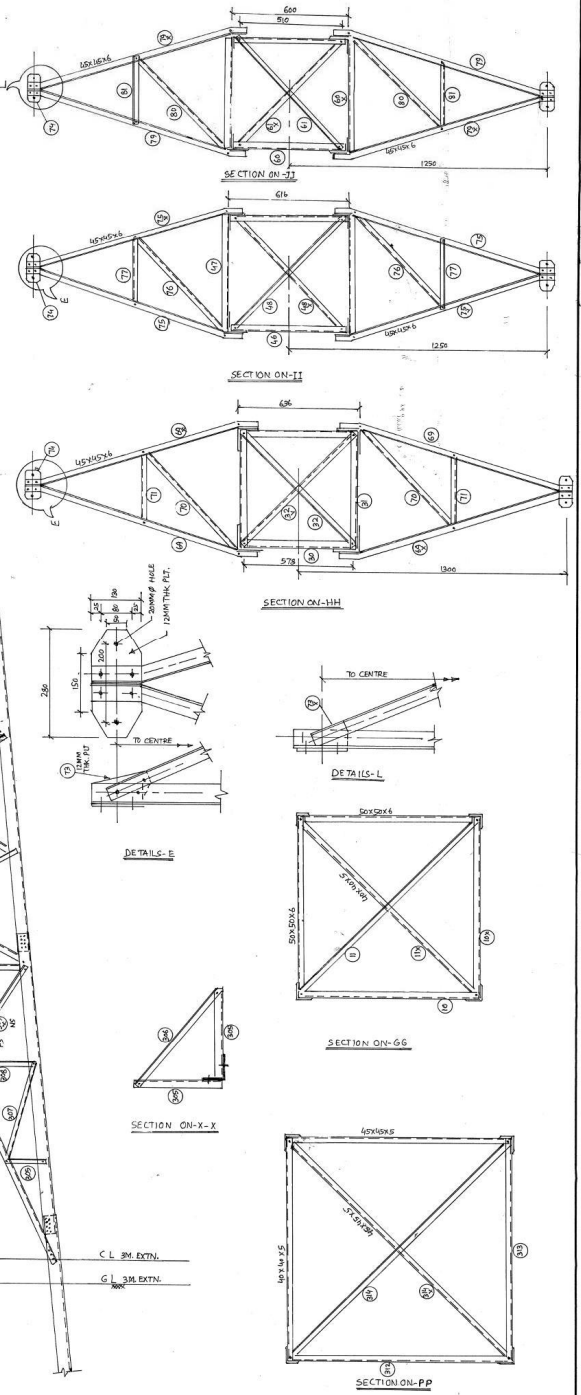


NOTES:-
 1. ALL DIMENSIONS ARE IN MM.
 2. ALL ANGLES ARE OF IS 400 OR 450 SIZES.
 3. ALL BOLTS ARE OF IS 400 OR 450 SIZES.
 4. ALL WELDED JOINTS ARE TO BE MADE TO BS 5400 PART 1.5.
 5. ALL DIMENSIONS ARE TO BE TAKEN FROM FACE UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO BE TAKEN FROM FACE UNLESS OTHERWISE SPECIFIED.
 7. MIN. CRANE DISTANCE OF 1100 FROM PLANT TO CRANE TO BE MAINT. 200 MM.

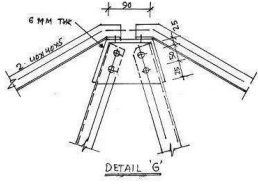
NAME OF THE CUSTOMER : ORISSA POWER TRANSMISSION CORPORATION LIMITED
 NAME OF THE CONSULTANT : POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE : STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C TANGENT-HX TYPE TOWER
 PROJ. NO. : OPTCL/SCRIPS/LINE/TOWER/06
 SCALE : 1:200, 1:15 & 1:5



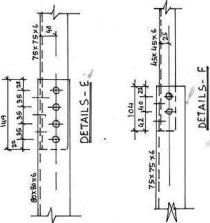
NOTES:
 1. ALL DIMENSIONS ARE IN MM.
 2. ALL GASKETS ARE 6MM THK UNLESS NOTED OTHERWISE.
 3. ALL BOLTS ARE M20 UNLESS NOTED OTHERWISE.
 4. ALL WELDED JOINTS ARE TO BE MADE TO BS 5400 PART 1.
 5. ALL WELDED JOINTS ARE TO BE MADE TO BS 5400 PART 1.
 6. MIN. COVER DISTANCE OF HOLE FROM BOLDED EDGE TO BE KEPT AS SHOWN.
 7. MIN. COVER DISTANCE OF HOLE FROM FLANGE BUT EDGE TO BE KEPT 20MM AND 25MM FOR 10MM AND 12MM BOLT RESPECTIVELY.



NAME OF THE CUSTOMER: ORISSA POWER TRANSMISSION CORPORATION LIMITED
 DRAWN BY: CONSULTANT ENGINEER
 POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE: STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C 30° ANGLE H₁ TYPE TOWER
 SCALE: 1:200
 DES. NO.: DPTCLSRIPSLINE/TOWER/07

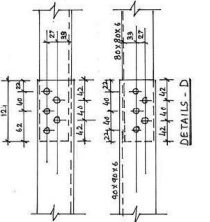


DETAIL G

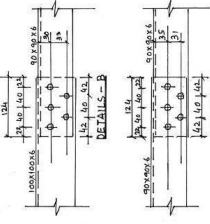


DETAILS E

DETAILS F

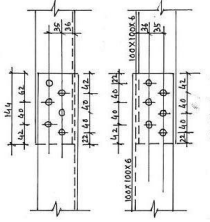


DETAILS D

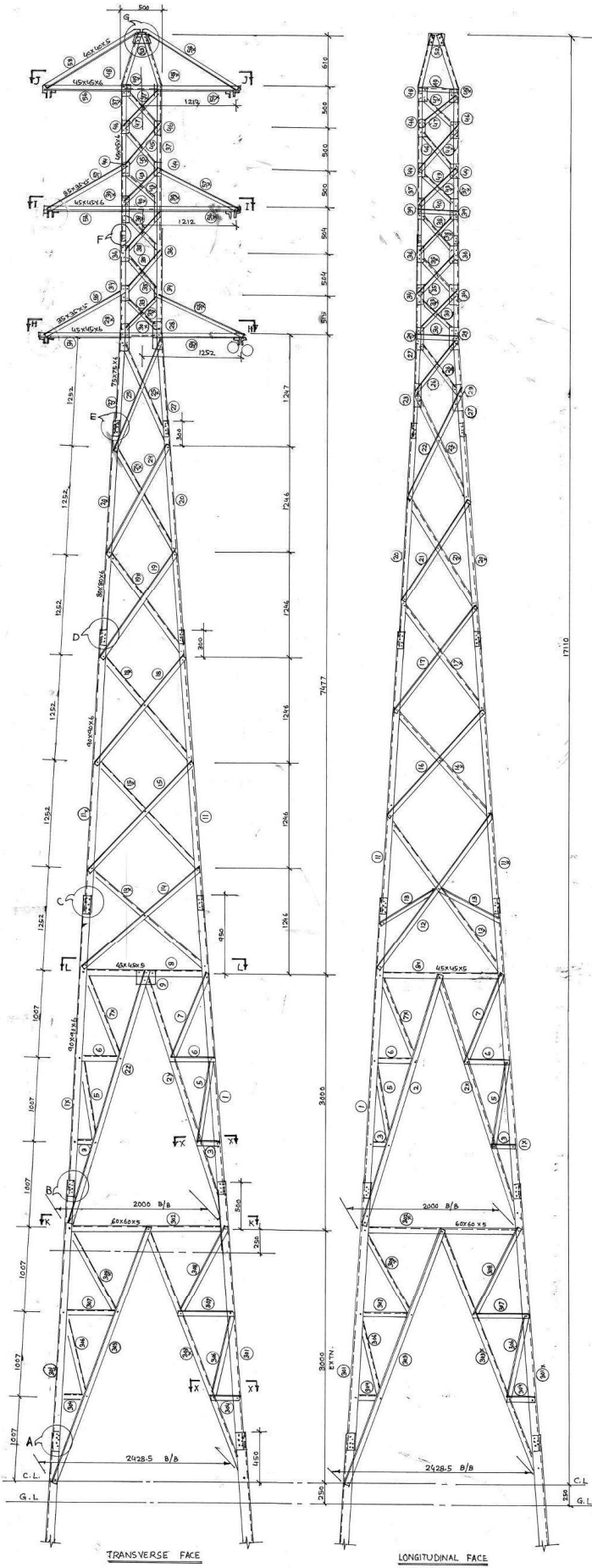


DETAILS B

DETAILS C

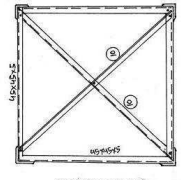


DETAILS A

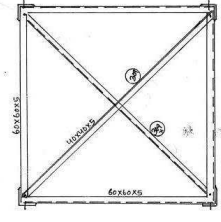


TRANSVERSE FACE

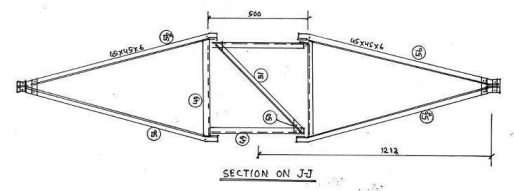
LONGITUDINAL FACE



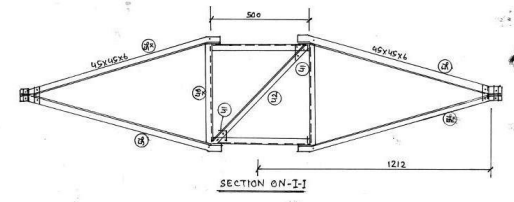
SECTION ON I-I



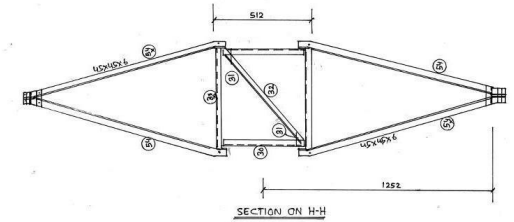
SECTION ON K-K



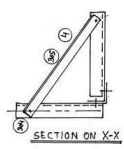
SECTION ON J-J



SECTION ON L-L



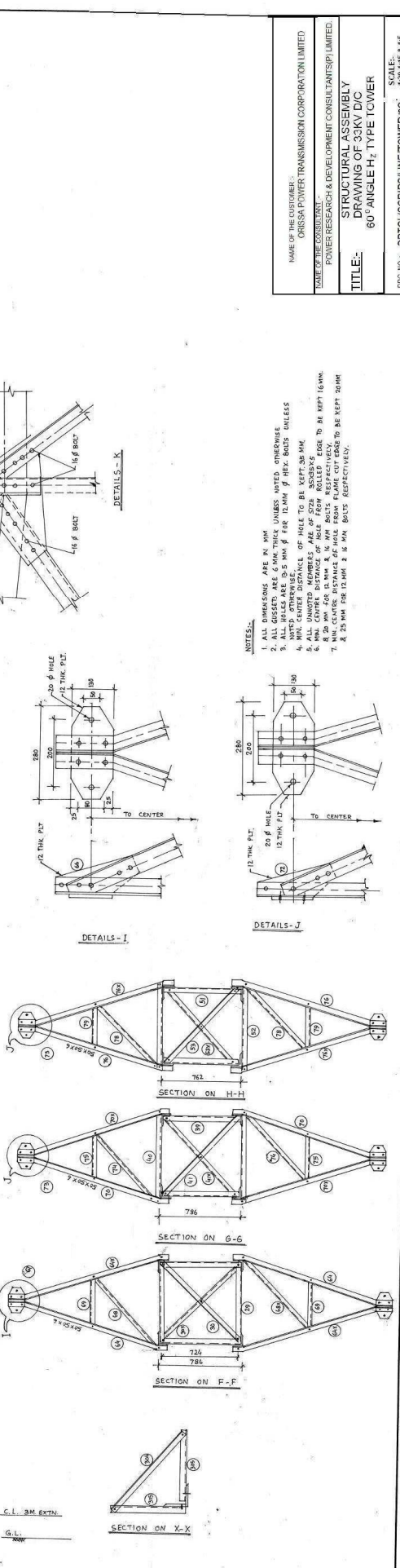
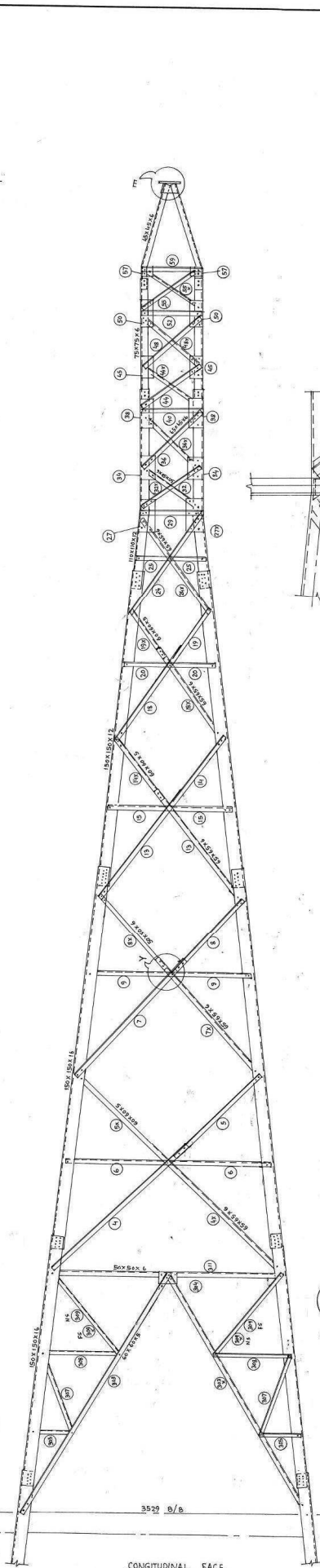
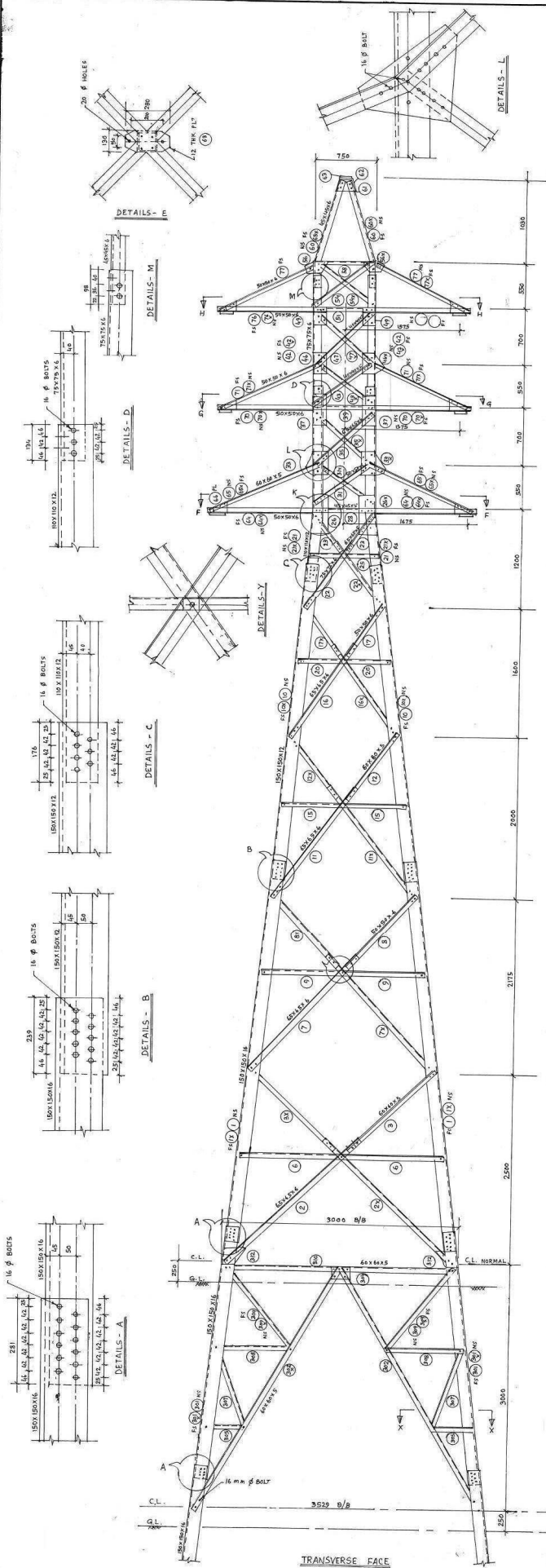
SECTION ON H-H



SECTION ON X-X

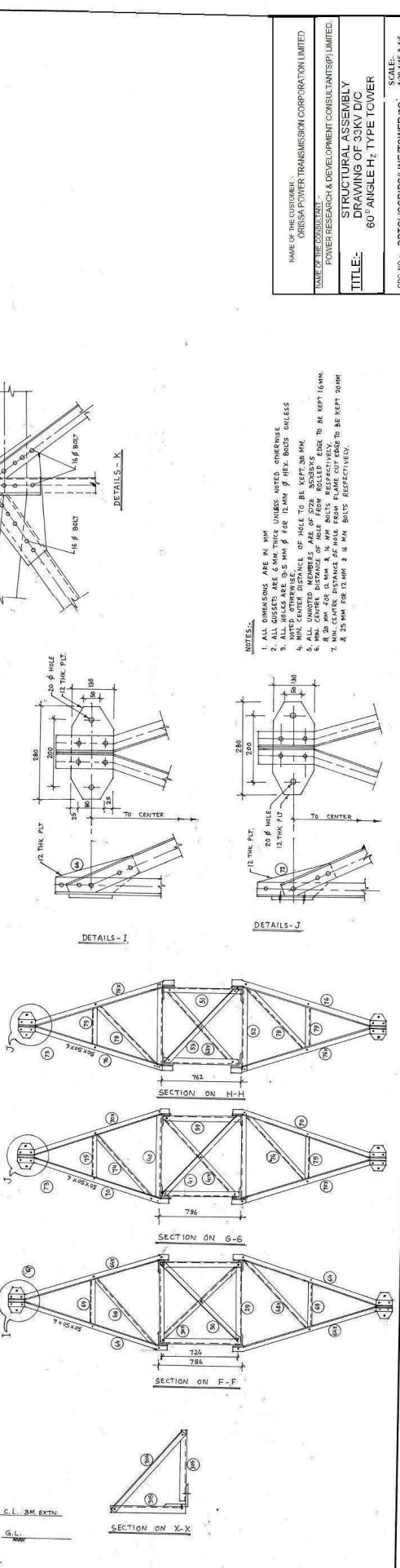
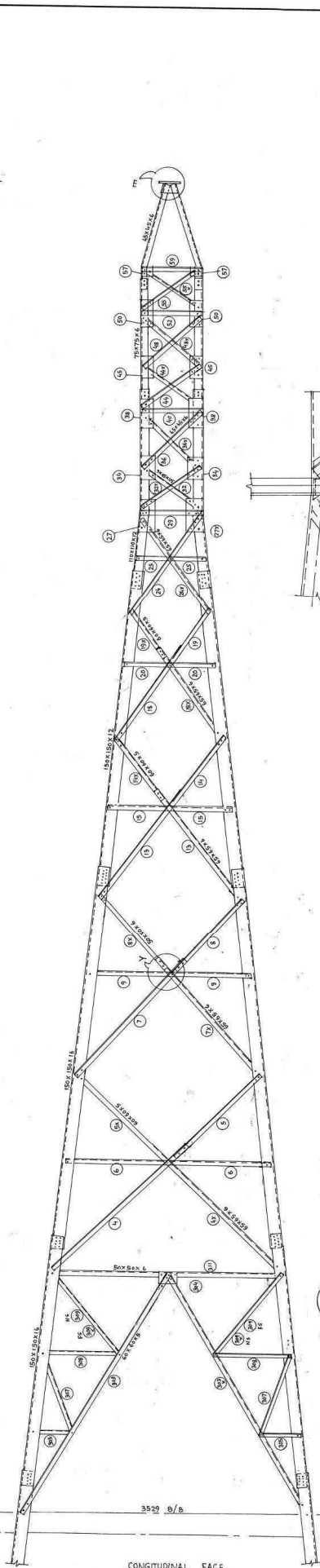
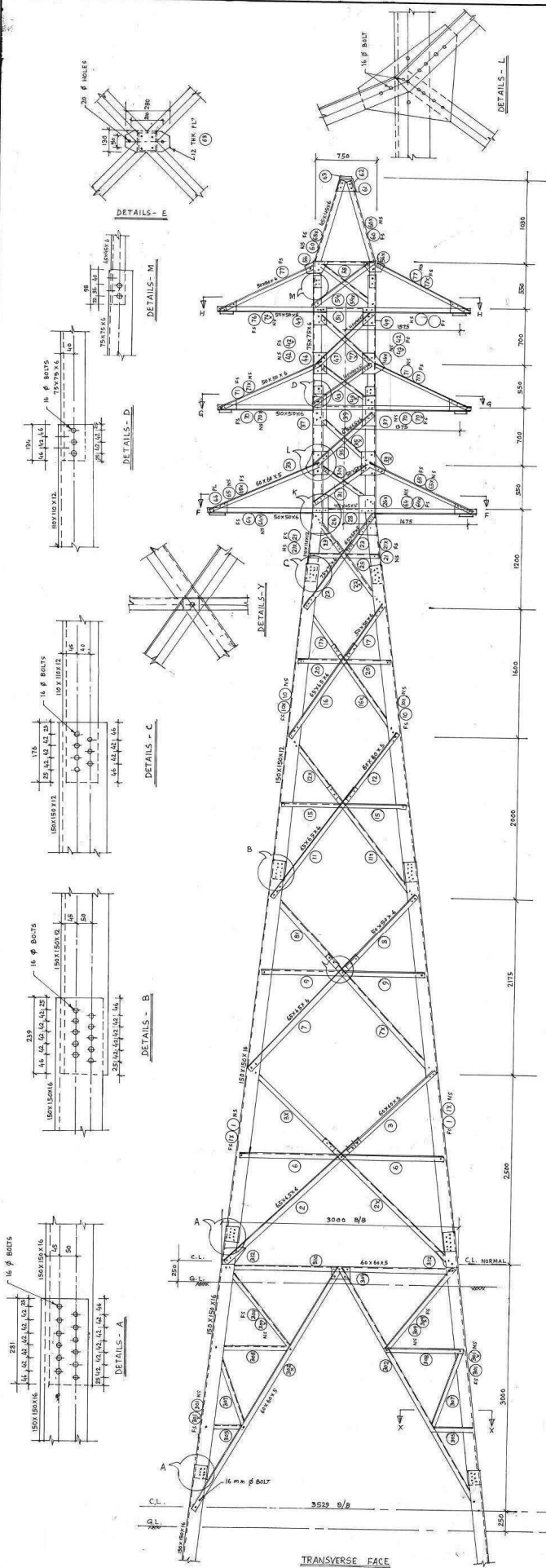
NOTES:-
 1. ALL DIMENSIONS ARE IN MM.
 2. ALL ANGLES ARE OF IS 200. ALL DIMENSIONS ARE IN MM.
 3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 5. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 7. MIN. CRANE DISTANCE OF HILL FROM PLANT OUT. SCALE 75:40 (NET) 250 MM.

NAME OF THE CUSTOMER : ORISSA POWER TRANSMISSION CORPORATION LIMITED
 NAME OF THE CONSULTANT : POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE : STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C TANGENT HX TYPE TOWER
 PROJ. NO. : OPTCL/SCRIPS/LINE/TOWER/06
 SCALE : 1:200, 1:15 & 1:5



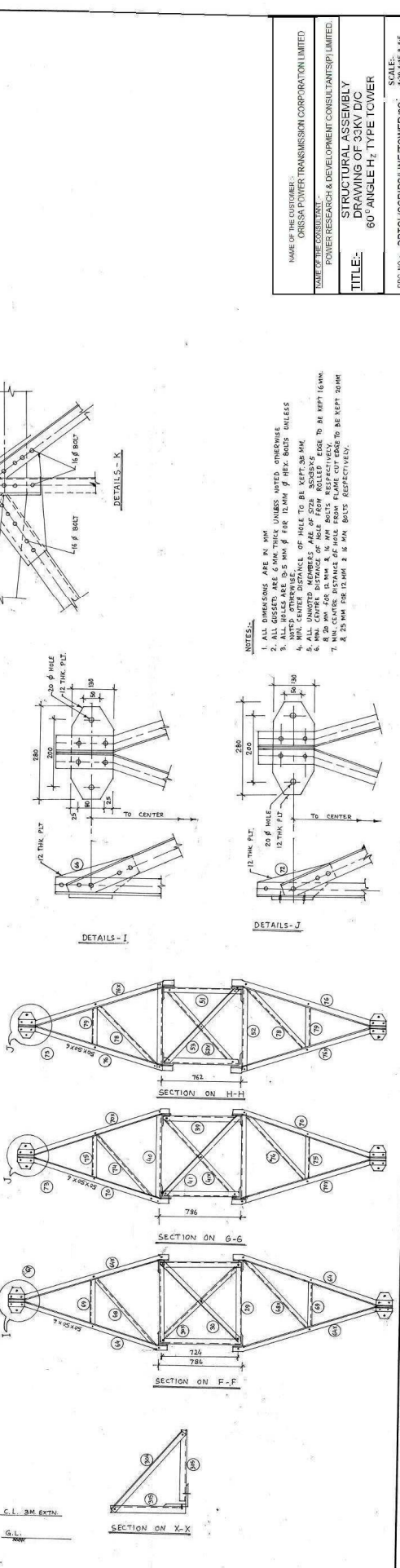
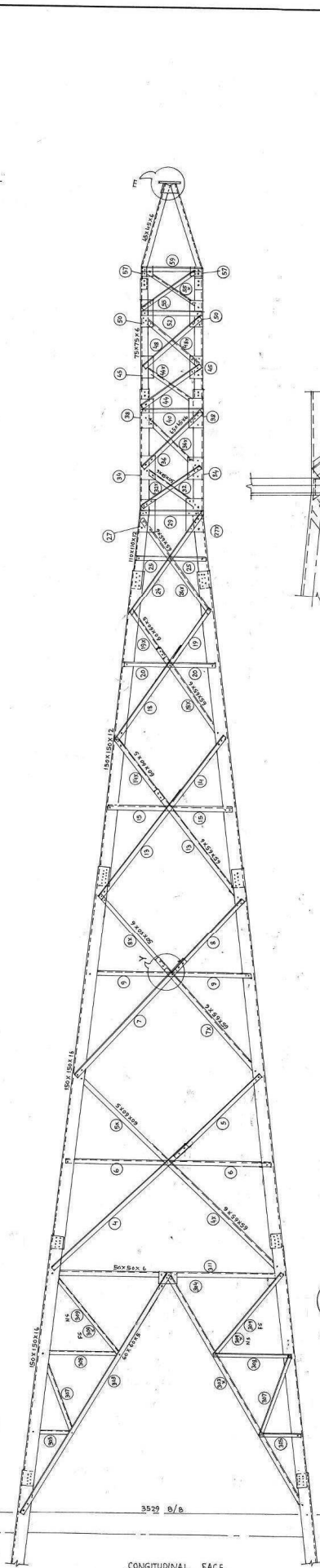
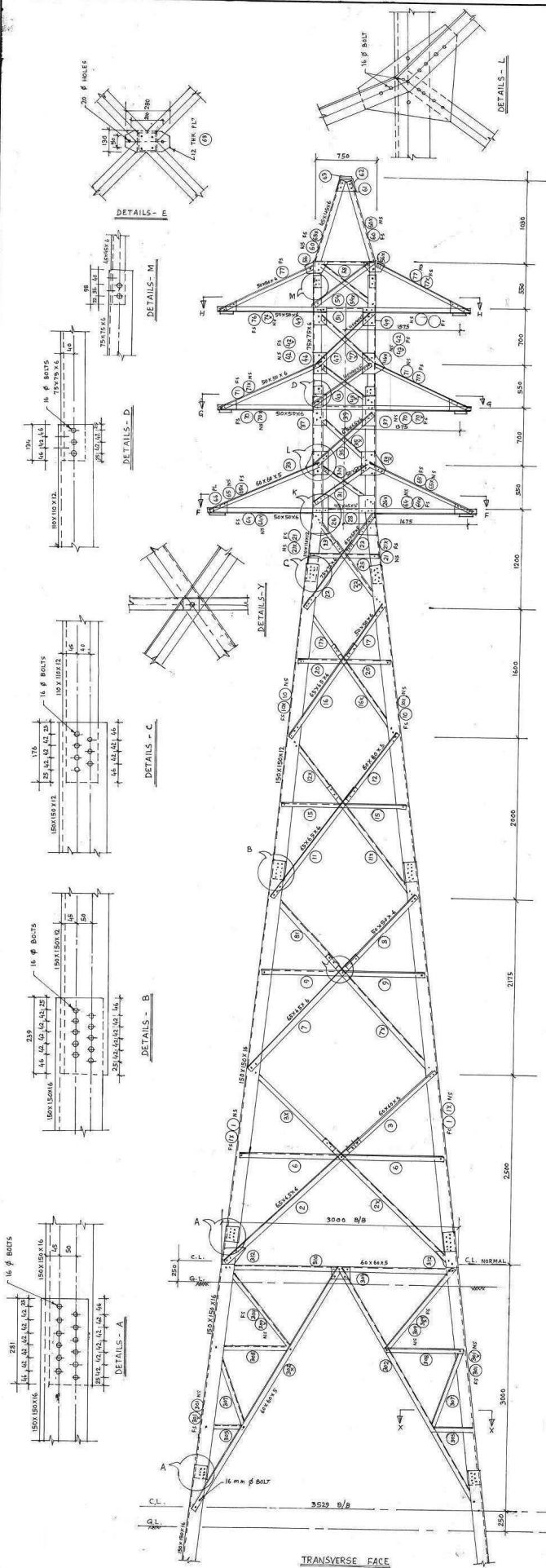
- NOTES:
1. ALL DIMENSIONS ARE IN MM
 2. ALL GUSSET ARE 6 MM THICK UNLESS NOTED OTHERWISE
 3. ALL HOLES ARE 1.5 MM FOR 12 MM Ø HEX BOLTS UNLESS
 4. HOLE CENTER DISTANCE OF HOLE TO BE KEPT 38 MM
 5. ALL UNMATED MEMBERS ARE OF SIZE 300x30x5
 6. 8.00 MM FOR 12 MM Ø 16 MM ROLLER EDGE TO BE KEPT 16 MM
 7. HOLE CENTER DISTANCE OF HOLE FROM FLANGE CUT EDGE TO BE KEPT 20MM
 8. 20 MM FOR 12 MM Ø 16 MM BOLTS RESPECTIVELY.

NAME OF THE CUSTOMER: ORISSA POWER TRANSMISSION CORPORATION LIMITED
 NAME OF THE CONSULTANT: POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE: STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C 60° ANGLE H₂ TYPE TOWER
 DATE: 12/01/15
 SCALE: 1:20, 1:15 & 1:5
 DDD: 1002 OPTCLSCRIPS/LINETOWER/08



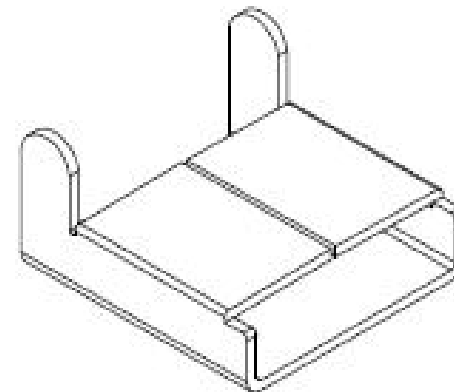
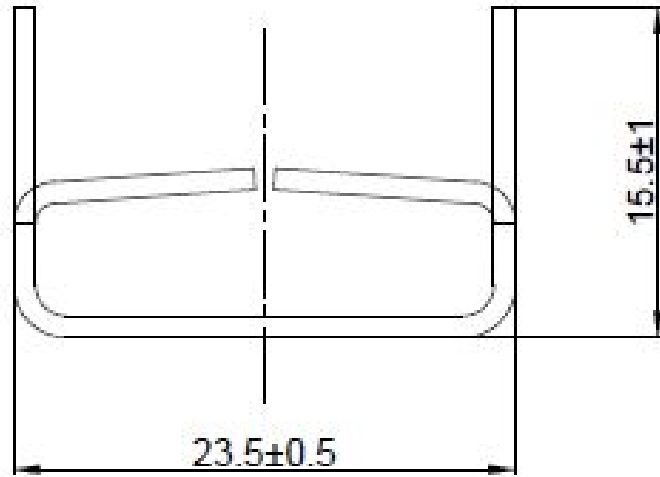
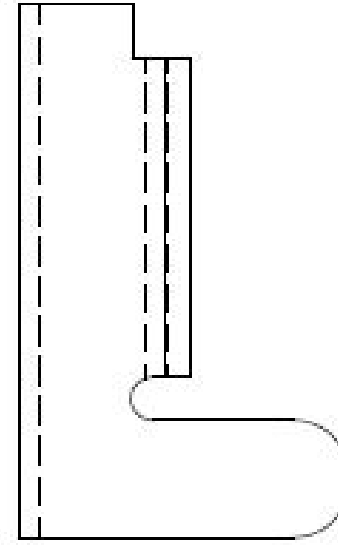
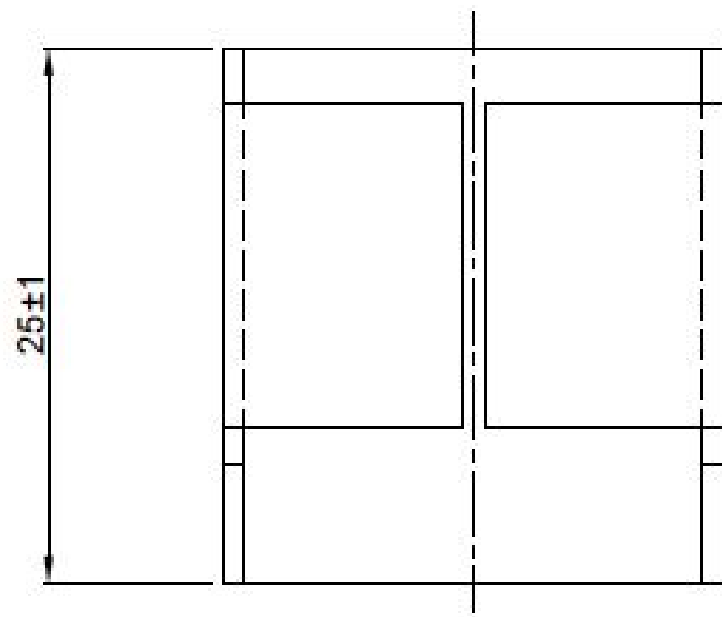
- NOTES:
1. ALL DIMENSIONS ARE IN MM
 2. ALL GUSSET ARE 6 MM THICK UNLESS NOTED OTHERWISE
 3. ALL HOLES ARE 2.5 MM FOR 12 MM Ø HEX BOLTS UNLESS
 4. HOLE CENTER DISTANCE OF HOLE TO BE KEPT 38 MM
 5. ALL UNMATED MEMBERS ARE OF SIZE 300x30x5
 6. 8.00 MM FOR 12 MM Ø 16 MM BOLT FROM ROLLED EDGE TO BE KEPT 16 MM
 7. HOLE CENTER DISTANCE OF HOLE FROM FLANGE CUT EDGE TO BE KEPT 20 MM
 8. 25 MM FOR 12 MM Ø 16 MM BOLTS RESPECTIVELY.

NAME OF THE CUSTOMER: ORISSA POWER TRANSMISSION CORPORATION LIMITED
 NAME OF THE CONSULTANT: POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE: STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C 60° ANGLE H₂ TYPE TOWER
 DATE: 12/11/15
 SCALE: 1:20, 1:15 & 1:5
 DDD:1002 OPTCL/SCRIPS/LINETOWER/08

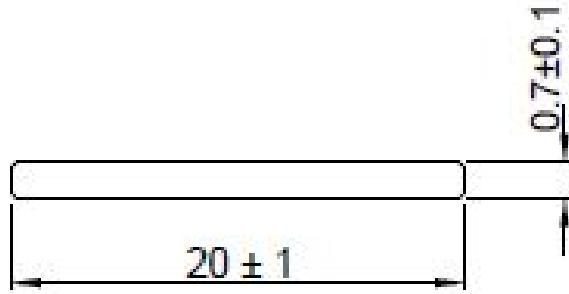
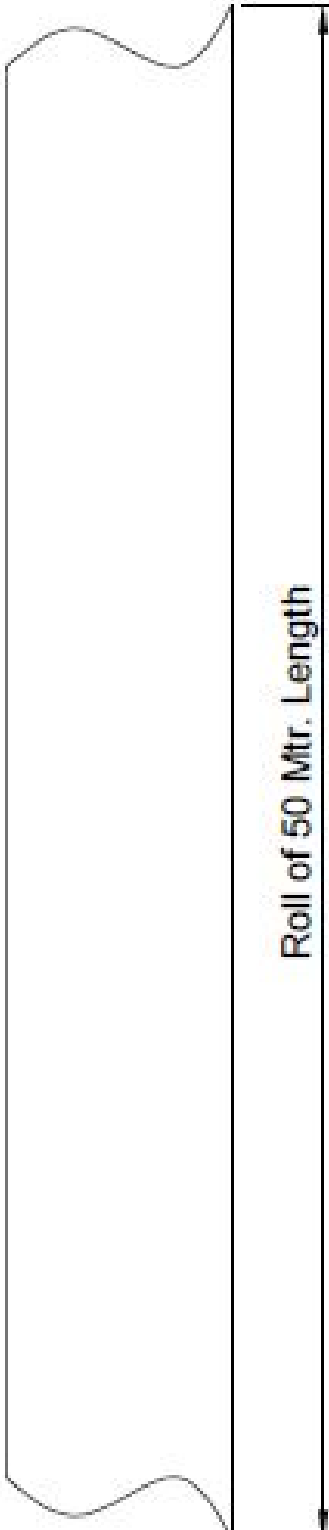


- NOTES:
1. ALL DIMENSIONS ARE IN MM
 2. ALL GUSSET ARE 6 MM THICK UNLESS NOTED OTHERWISE
 3. ALL HOLES ARE 1.5 MM FOR 12 MM # HEX BOLTS UNLESS
 4. HOLE CENTER DISTANCE OF HOLE TO BE KEPT 38 MM
 5. ALL UNMATED MEMBERS ARE OF SIZE 3030X5
 6. 8.00 MM FOR 12 MM # 16 MM ROLL ROLL EDGE TO BE KEPT 16 MM
 7. HOLE CENTER DISTANCE OF HOLE FROM FLANGE CUT EDGE TO BE KEPT 20MM
 8. 20 MM FOR 12 MM # 16 MM BOLTS RESPECTIVELY.

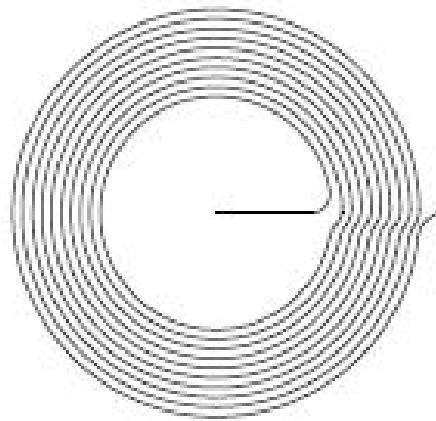
NAME OF THE CUSTOMER: ORISSA POWER TRANSMISSION CORPORATION LIMITED
 NAME OF THE CONSULTANT: POWER RESEARCH & DEVELOPMENT CONSULTANTS (P) LIMITED
 TITLE: STRUCTURAL ASSEMBLY DRAWING OF 33KV D/C 60° ANGLE H₂ TYPE TOWER
 DATE: 12.01.15
 SCALE: 1:20, 1:15 & 1:5
 DDD: 1002 OPTCL/SCRIPS/LINETOWER/08



Guaranteed Technical Particulars for STAINLESS STEEL BUCKLE		
3	Type of Material	AISI 304
4	Minimum Weight	0.9kg./Bag of 100Nos.
5	Type test for Tensile Strength	Yes



DETAIL - A



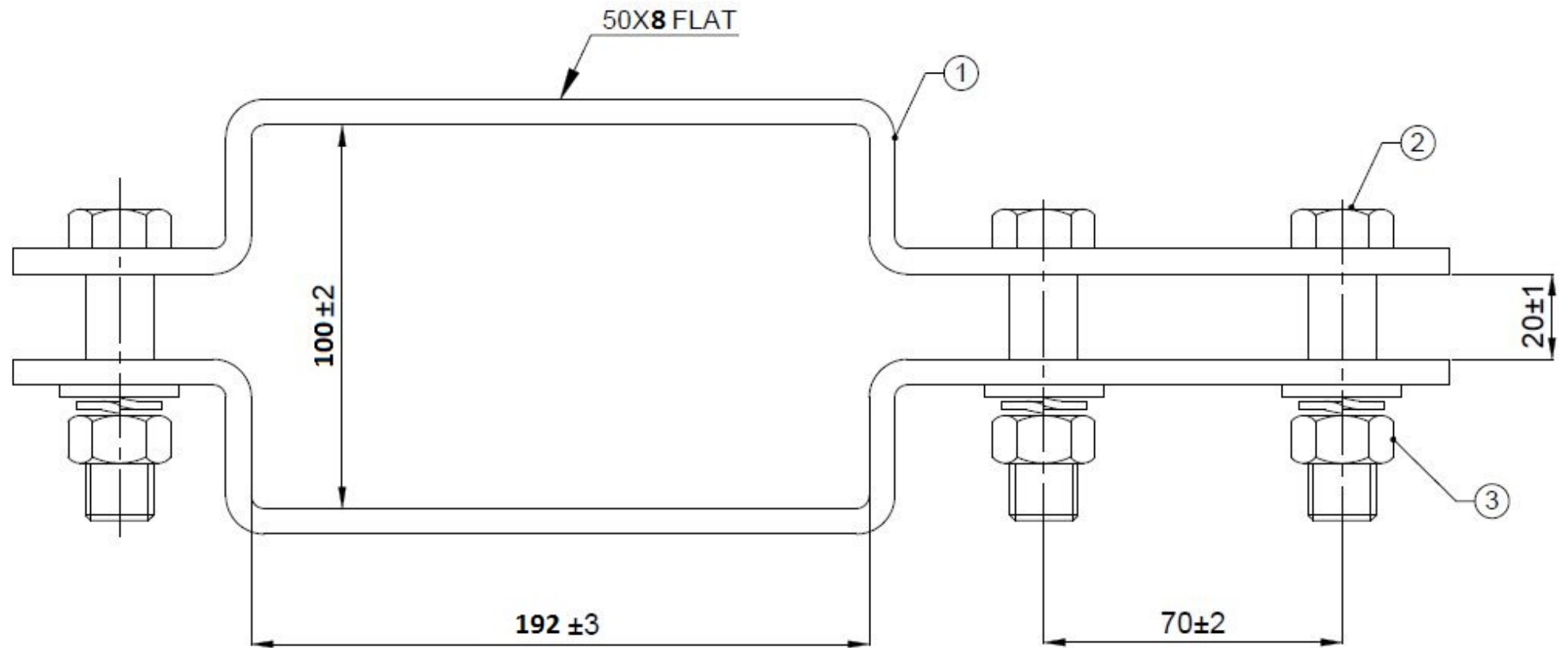
SS STRAP ROLL

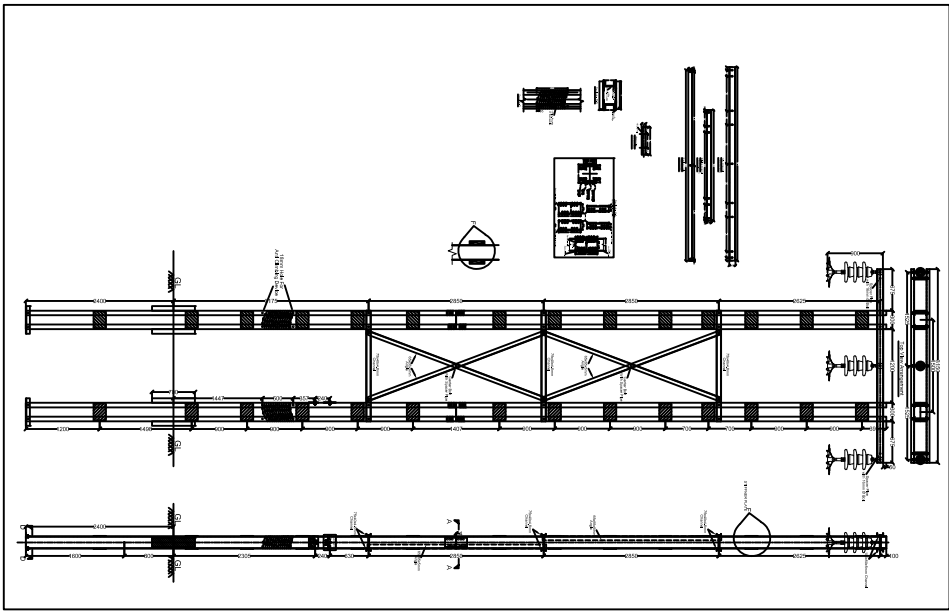
Guaranteed Technical Particulars for STAINLESS STEEL STRAP

Sr. No.	Description	Bidder's offer
3	Type of Material	AISI 202
5	Dimensions, WxT	20x0.7 mm
4	Minimum Weight	5.0kg./ 50Mtr. Roll
6	Tensile Strength, kN	7.5
7	Type test for Tensile Strength	Yes

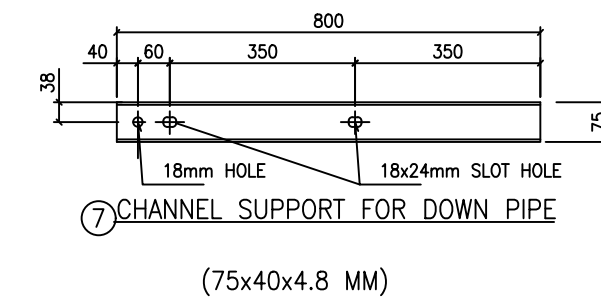
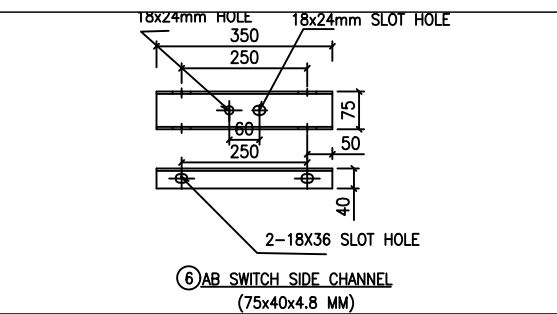
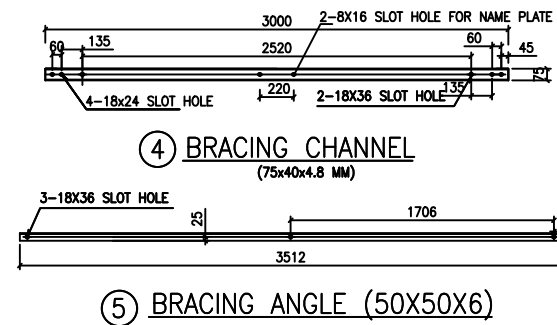
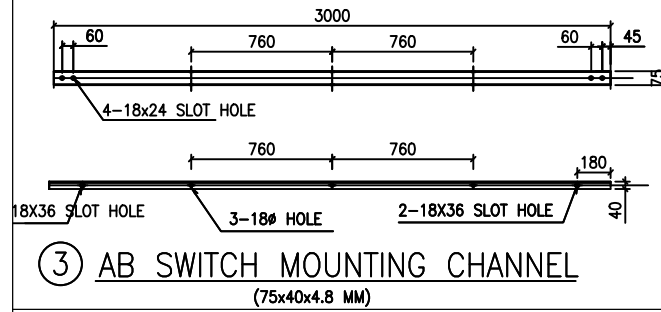
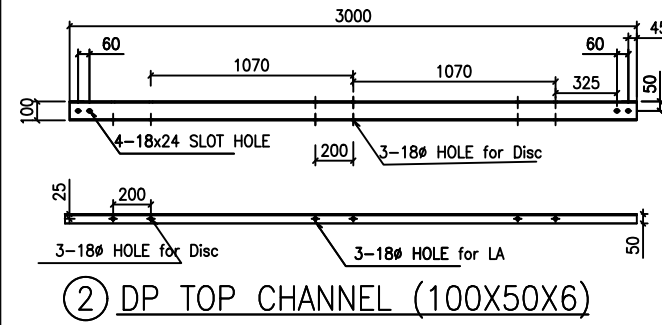
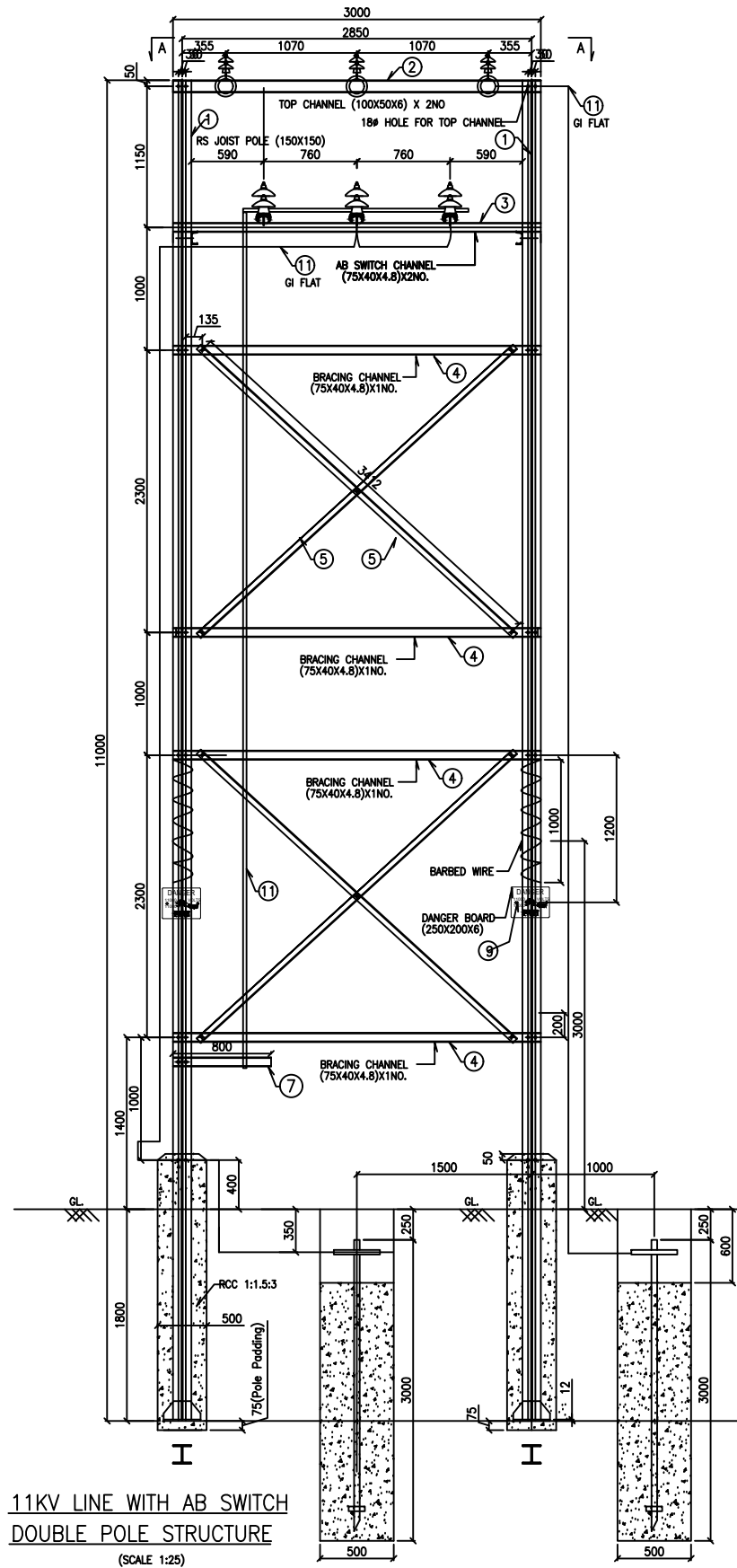
NOTES:

1. ALL FERROUS PARTS HOT DIP GALVANISED AS PER IS:2633/2629
2. SPRING WASHER ELECTRO GALVANISED

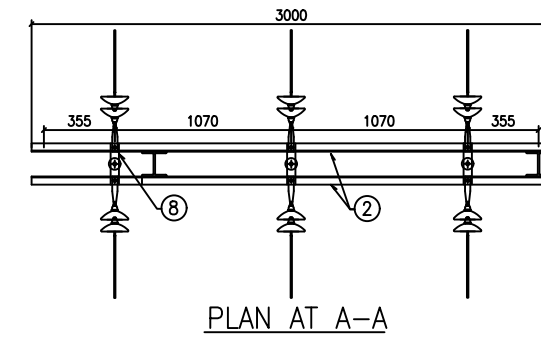
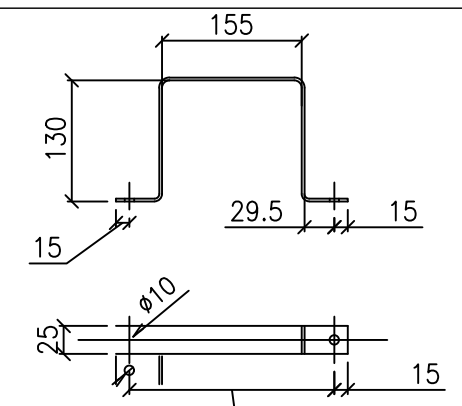
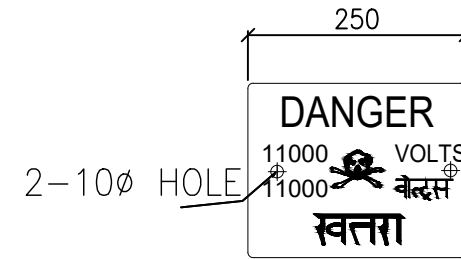




1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per IS)



BOM OF GI ITEMS OF 11KV LINE DP WITH AB SWITCH								
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGTH (mm)	QTY. (NOS.)	WT (Kg/m)	WT/ITEM(Kg)	TOTAL WT /ARGMT (Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	2	34.6/30.44	380.6/334.84	761.2/669.68
2	DP TOP CHANNEL	100X50X6 MM	CHANNEL	3000	2	9.56	28.68	57.36
3	AB SWITCH CHANNEL	75X40X4.8 MM	CHANNEL	3000	2	7.14	21.42	42.84
4	BRACING CHANNEL	75X40X4.8 MM	CHANNEL	3000	4	7.14	21.42	85.68
5	BRACING ANGLE	50X50X6 MM	ANGLE	3512	4	4.50	15.80	63.216
6	AB SWITCH SIDE CHANNEL	100X50X6 MM	CHANNEL	350	2	9.56	3.35	6.692
7	CHANNEL SUPPORT FOR DOWN PIPE	75X40X4.8 MM	CHANNEL	800	1	7.14	5.71	5.712
8	FISH PLATE	50X6 MM	PLATE	280	6	2.36	0.66	3.96
9	DANGER BOARD	250X220X6 MM	PLATE	250	2	9.42	2.36	4.71
10	BACK CLAMP FOR DANGER BOARD	25X3 MM	FLAT	510	2	0.59	0.30	0.60
11	GI Flat	40x6 MM	FLAT	2800	1	1.90	5.32	5.32
12	PIPE EARTHING		PIPE	3000	2			
TOTAL WEIGHT FOR RSJ STRUCTURE								1037.30
TOTAL WEIGHT FOR WPB 160 STRUCTURE								888.42
A	BOLT & NUTS	M16		50	48		0.134	6.432
B	BOLT & NUTS	M16		120	8		0.229	1.832
C	BOLT & NUTS	M16		140	9		0.256	2.304
D	BOLT & NUTS	M17		200	0		0.331	0
E	BOLT & NUTS	M8		50	4		0.026	0.104
F	FLAT WASHER	M16			130		0.014	1.82
G	SPRING WASHER	M16			130		0.009	1.17
H	FLAT WASHER	M8			8		0.005	0.04
I	SPRING WASHER	M8			8		0.002	0.016
TOTAL WEIGHT								13.718



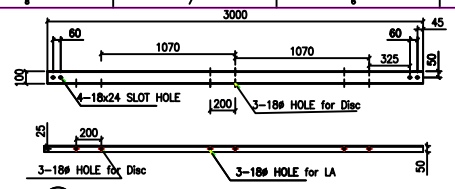
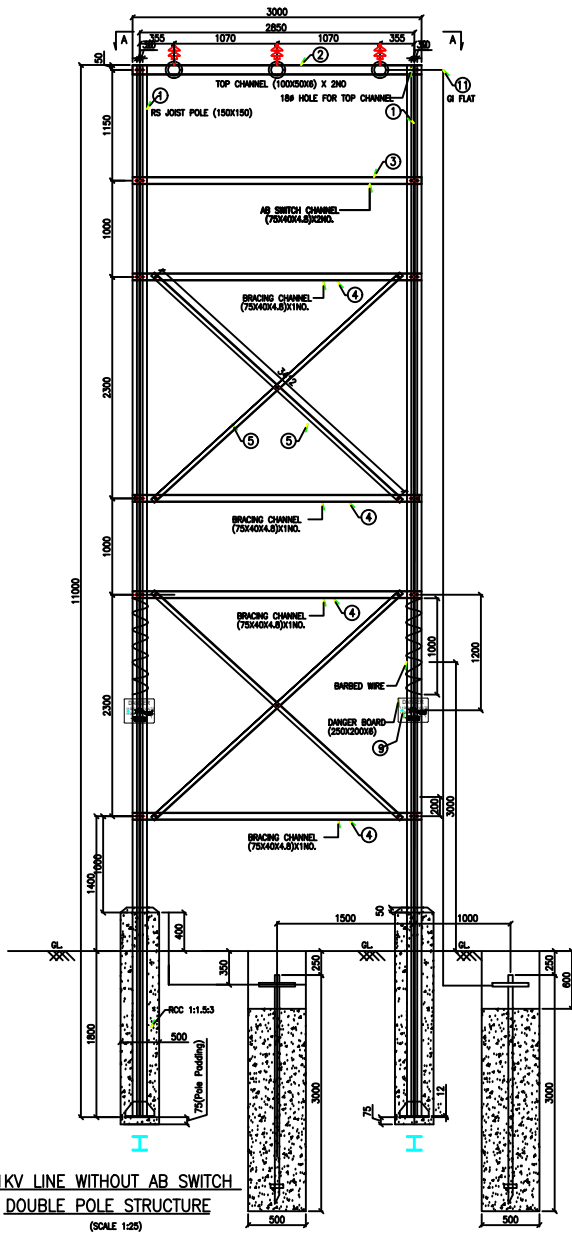
TPCODL
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CENTRAL ODISHA DISTRIBUTION LTD.

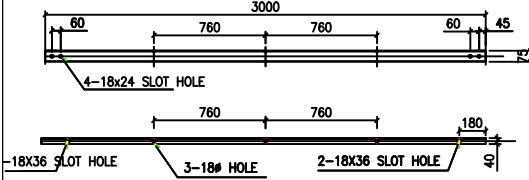
TITLE:-	NAME
11KV LINE DP WITH AB SWITCH (with 11mtr. 150x150 RSJ or WPB 160)	PHIROJ UTTARAY,E&Q
DESIGN:	J SANGRAM, E&Q
DRAWN:	K BHARDWAJ, E&Q
CHECKED:	P GARG, E&Q
APPROVED:	

SCALE : NTS ISSUE DT: 31/05/2021 DRAWING NO: TPCODL-MVD-0001 REV NO:

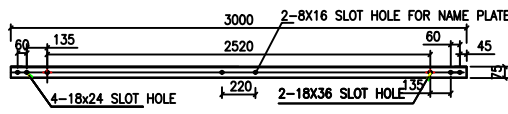
1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



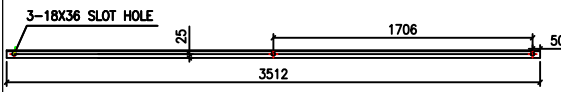
② DP TOP CHANNEL (100X50X6)



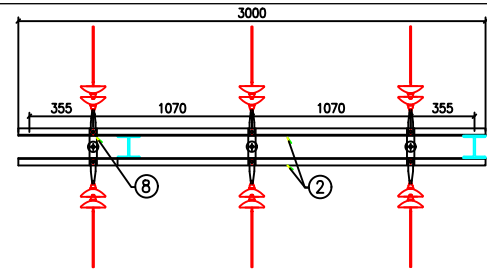
③ AB SWITCH MOUNTING CHANNEL (75x40x4.8 MM)



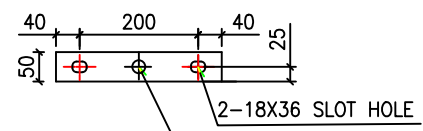
④ BRACING CHANNEL (75x40x4.8 MM)



⑤ BRACING ANGLE (50X50X6)

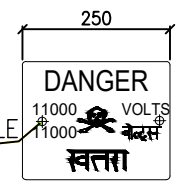


PLAN AT A-A

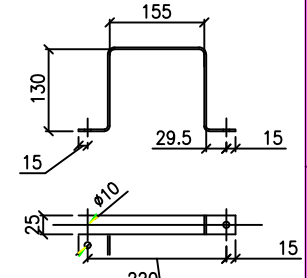


⑧ TOP CHANNEL CONNECTING FISH PLATE (50x6)

BOM OF GI ITEMS OF 11KV LINE DP WITHOUT AB SWITCH								
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGTH (mm)	QTY. (NOS.)	WT (Kg/m)	WT/ITEM(Kg)	TOTAL WT./ARGMT(Kg)
1	RSJ POLE /WPB 160	150X150 MM	JOIST	11000	2	34.6/30.44	390.6/334.84	761.2/693.68
2	DP TOP CHANNEL	100X50X6 MM	CHANNEL	3000	2	9.56	28.68	57.36
3	AB SWITCH CHANNEL	75X40X4.8 MM	CHANNEL	3000	2	7.14	21.42	42.84
4	BRACING CHANNEL	75X40X4.8 MM	CHANNEL	3000	4	7.14	21.42	85.68
5	BRACING ANGLE	50X50X6 MM	ANGLE	3512	4	4.50	15.80	63.216
8	FISH PLATE	50X6 MM	PLATE	280	6	2.36	0.66	3.96
9	DANGER BOARD	250X220X3 MM	PLATE	250	2	9.42	2.36	4.71
10	BACK CLAMP FOR DANGER BOARD	25x3 MM	FLAT	510	2	0.59	0.30	0.60
11	GI Flat	40x6 MM	FLAT	1400	1	1.90	5.32	2.66
12	PIPE EARTHING		PIPE	3000	2			
TOTAL WEIGHT FOR RSJ STRUCTURE							1022.23	
TOTAL WEIGHT FOR WPB 160 STRUCTURE							873.35	
A	BOLT & NUTS	M16		50	48		0.134	6.432
B	BOLT & NUTS	M16		140	12		0.256	3.072
C	BOLT & NUTS	M16		200	0		0.331	0
D	BOLT & NUTS	M8		50	4		0.026	0.104
E	FLAT WASHER	M16		120			0.014	1.68
F	SPRING WASHER	M16		120			0.009	1.08
G	FLAT WASHER	M8		8			0.005	0.04
G	SPRING WASHER	M8		8			0.002	0.016
TOTAL WEIGHT							12.424	



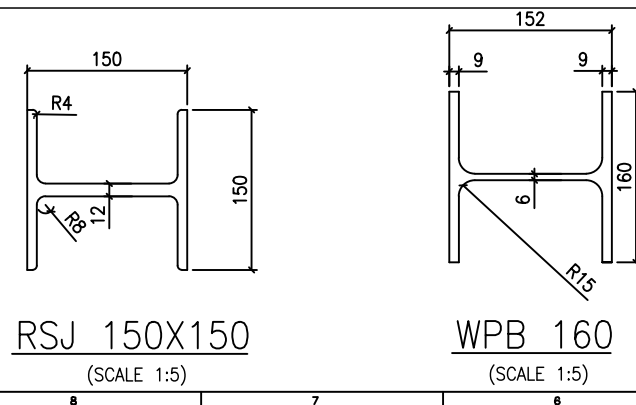
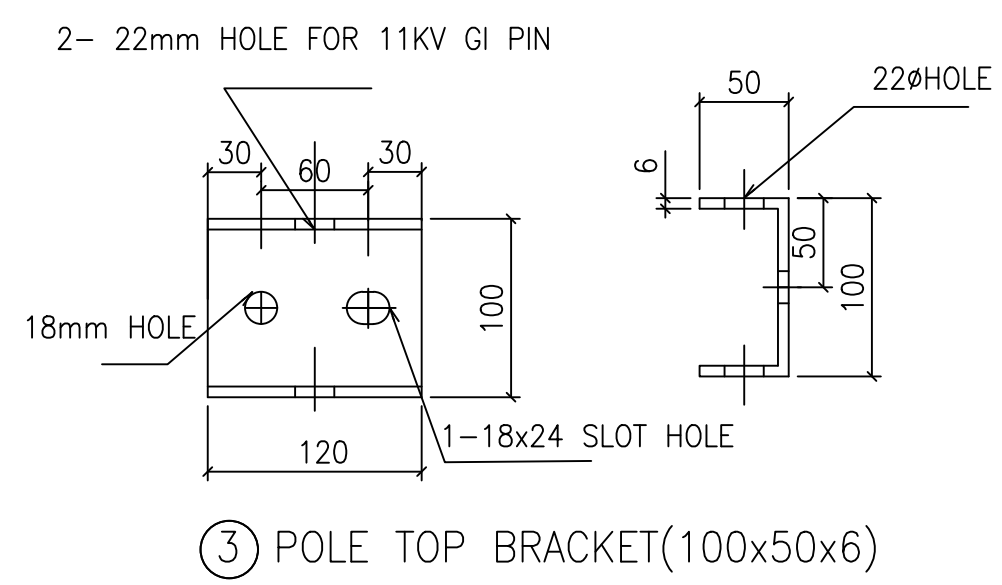
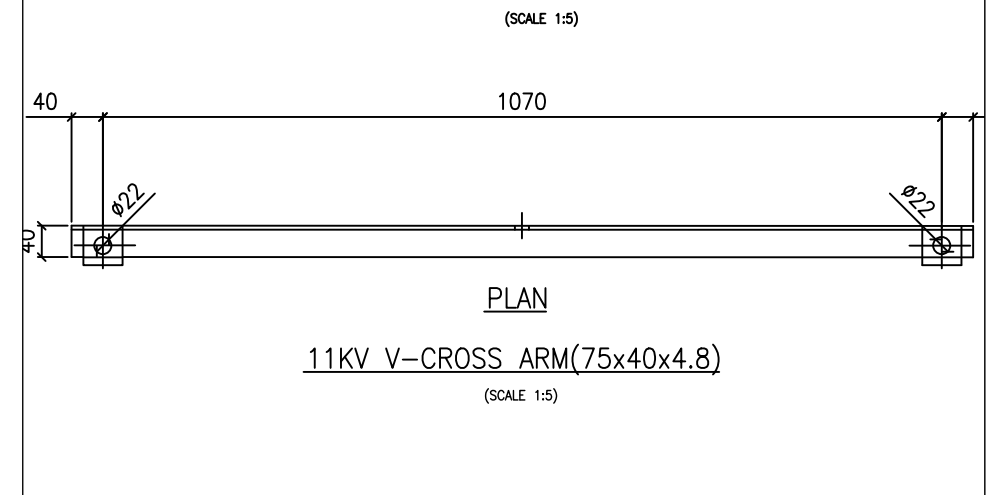
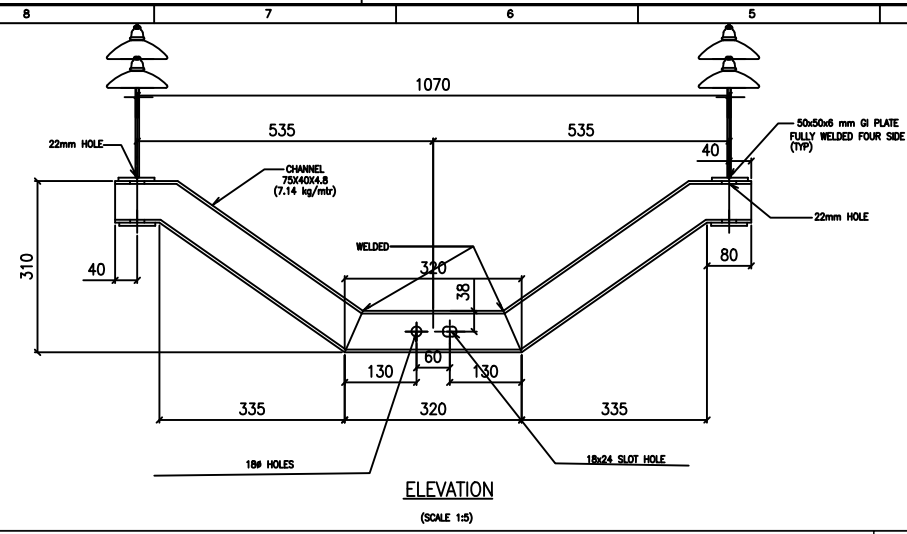
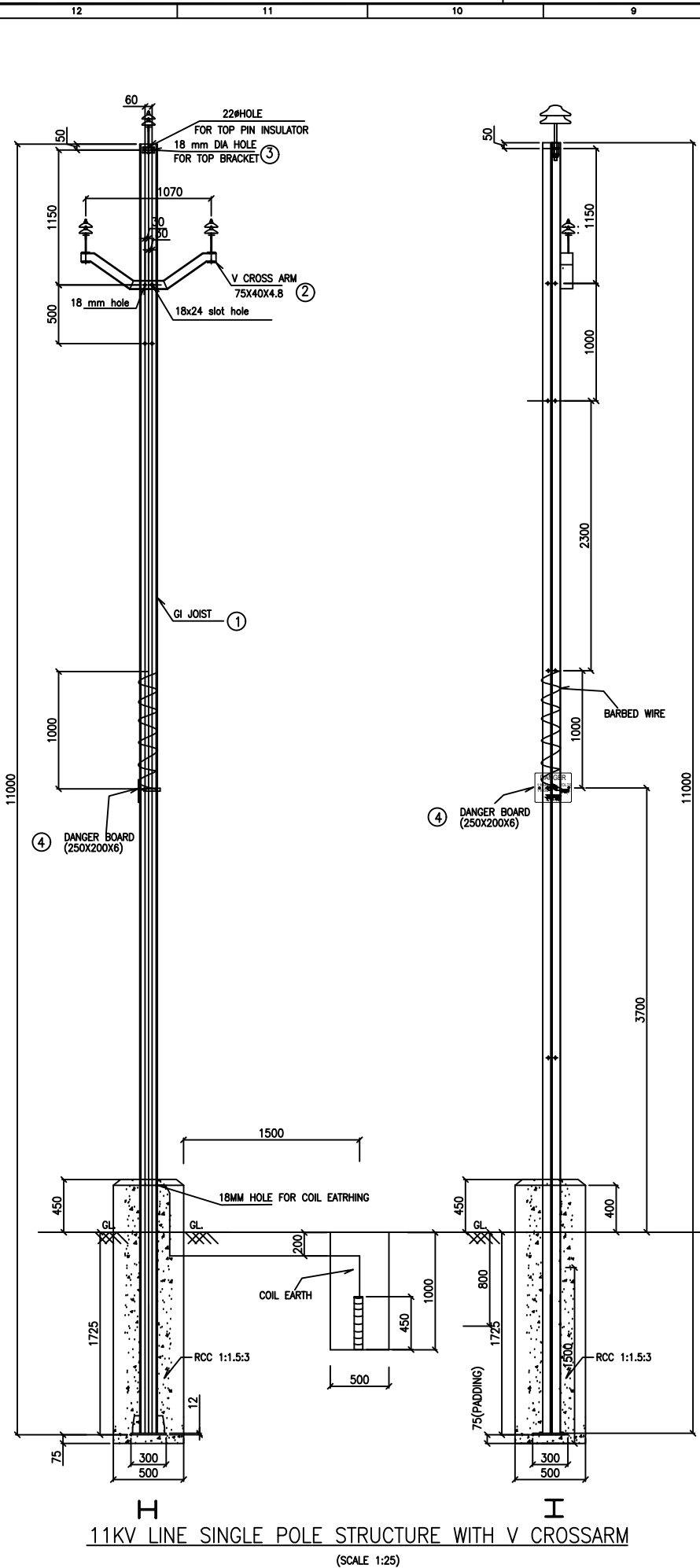
⑨ DANGER BOARD (250X220X3)X2NO.



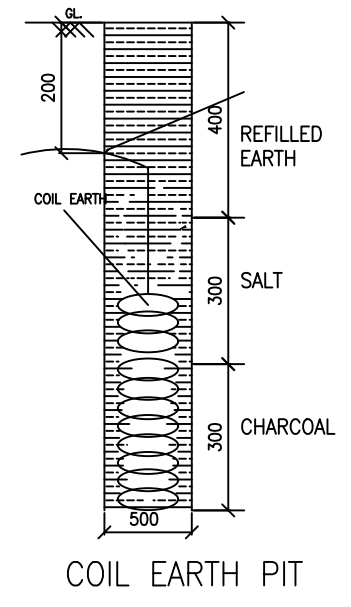
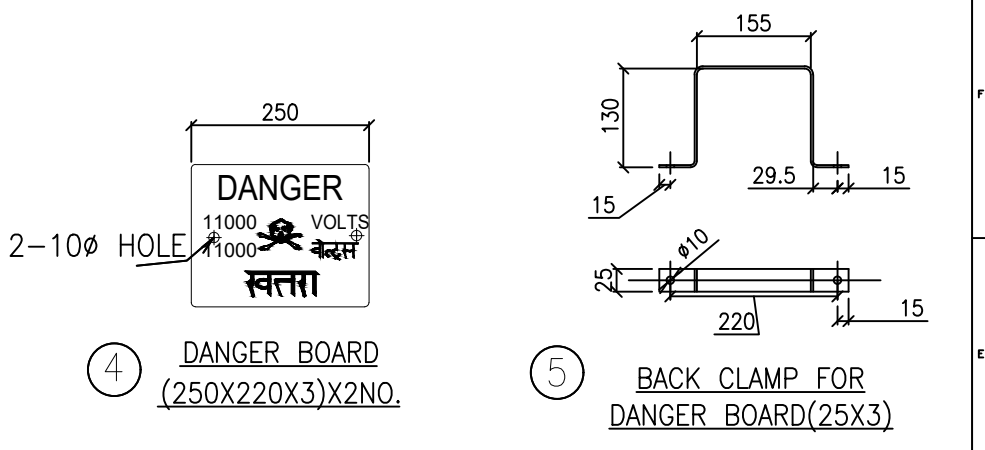
⑩ BACK CLAMP FOR DANGER BOARD(25X3)

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE DP WITHOUT AB SWITCH (with 11mtr. 150x150 RSJ or WPB 160)		NAME	
DESIGN:-		PHIROJ UTTARAY,E&Q	
DRAWN:-		J SANGRAM, E&Q	
CHECKED:-		K BHARDWAJ, E&Q	
APPROVED:-		P GARG, E&Q	
SCALE: NTS	ISSUE DT: 31/05/2021	DRAWING NO:TPCODL-MVD-0002 REV NO:	

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



BOM OF GI ITEMS OF 11KV LINE SP WITH V CROSSARM							
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGT H (mm)	QTY (NOS)	WT (Kg/mtr)	TOTAL WT (Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	1	34.6/3 0.44	380.6/334.84
2	11KV V CROSS ARM	75X40X4.8 MM	CHANNEL	1395	1	7.14	9.960
2A	50X6 FLAT FOR V	50X6 MM	FLAT	50	4	2.36	0.118
3	POLE TOP BRACKET	100X50X6 MM	CHANNEL	120	1	9.56	1.147
4	DANGER BOARD	250X200X6 MM	PLATE	250	2	9.42	2.355
5	BACK CLAMP FOR DANGER BOARD	25X3 MM	FLAT	510	2	0.59	0.300
TOTAL WEIGHT FOR RSJ STRUCTURE							397.49
TOTAL WEIGHT FOR WPB 160 STRUCTURE							351.73
A	BOLT & NUTS	M16		50	3	0.134	0.402
B	BOLT & NUTS	M16		120	2	0.229	0.458
C	BOLT & NUTS	M8		50	2	0.02	0.04
D	FLAT WASHER	M16		10	10	0.014	0.14
E	SPRING WASHER	M16		10	10	0.009	0.09
F	FLAT WASHER	M8		4	4	0.005	0.02
G	SPRING WASHER	M8		4	4	0.002	0.008
TOTAL WEIGHT							1.158

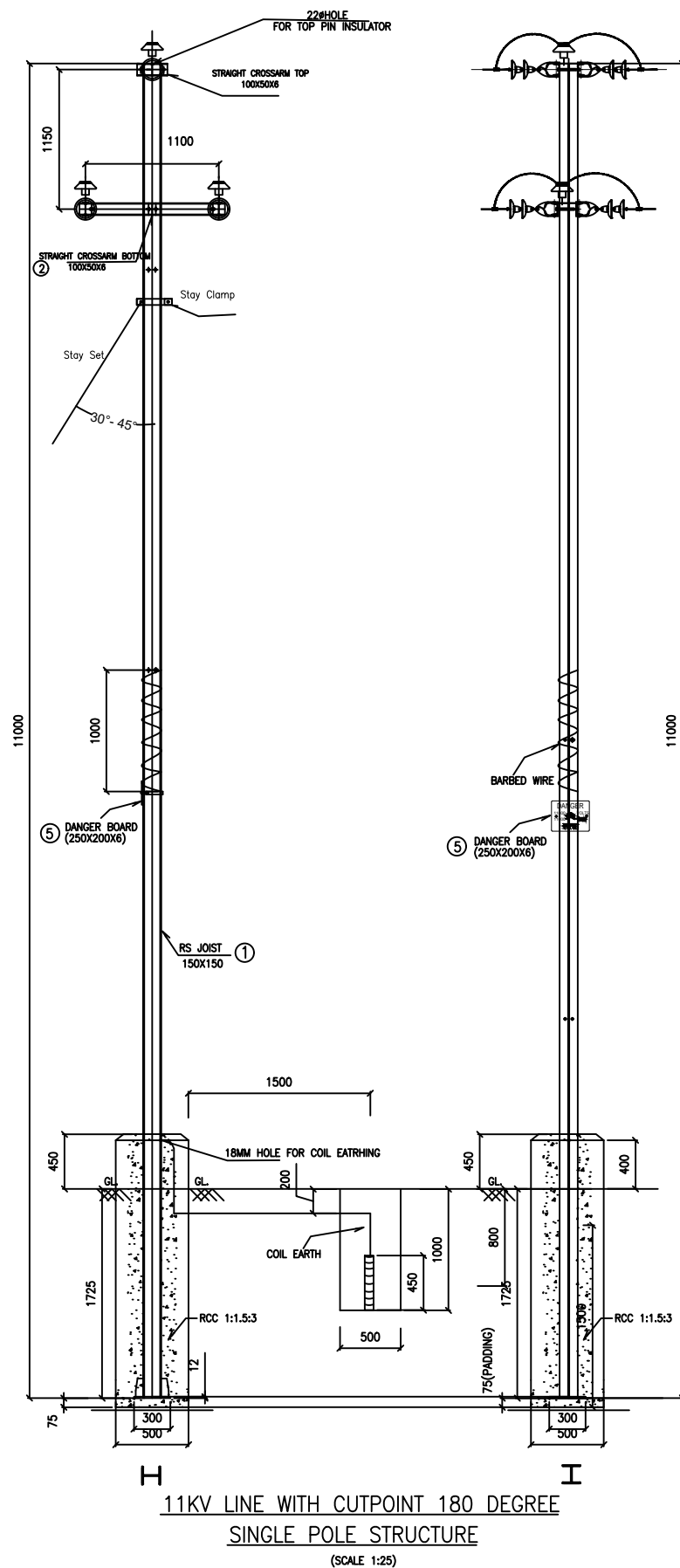


TPCODL
TP CENTRAL ODISHA DISTRIBUTION LIMITED

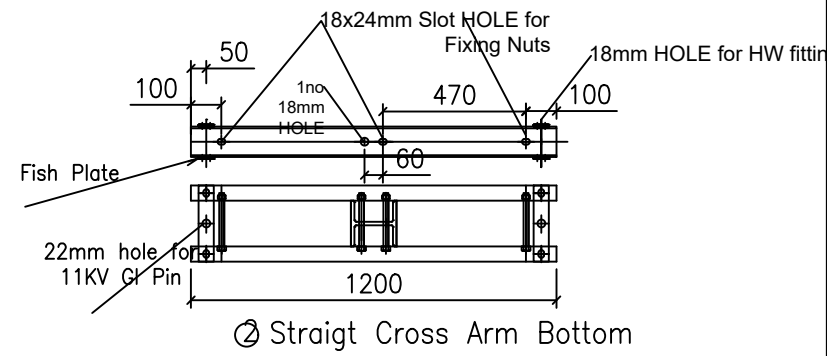
TATA POWER
CENTRAL ODISHA DISTRIBUTION LTD.

TITLE:-	NAME
11KV LINE SINGLE POLE WITH V CROSS ARM (with 11mtr. 150x150 RSJ or WPB 160)	PHIROJ UTTARAY,E&Q
DESIGN:	J SANGRAM, E&Q
DRAWN:	K BHARDWAJ, E&Q
CHECKED:	P GARG, E&Q
APPROVED:	
SCALE : NTS	DRAWING NO:TPCODL-MVD-0003 REV NO:
ISSUE DT: 31/05/2021	

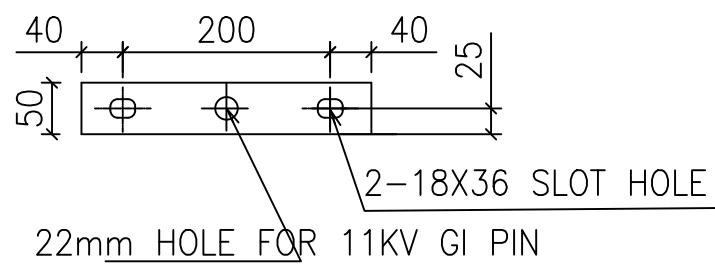
1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



11KV LINE WITH CUTPOINT 180 DEGREE SINGLE POLE STRUCTURE (SCALE 1:25)

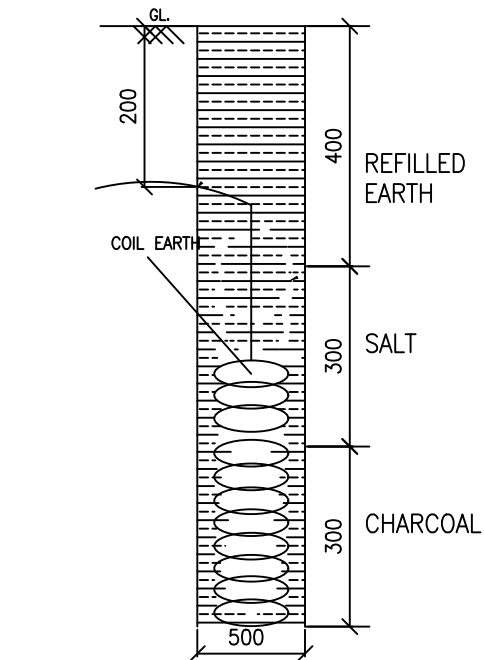


2 Straight Cross Arm Bottom

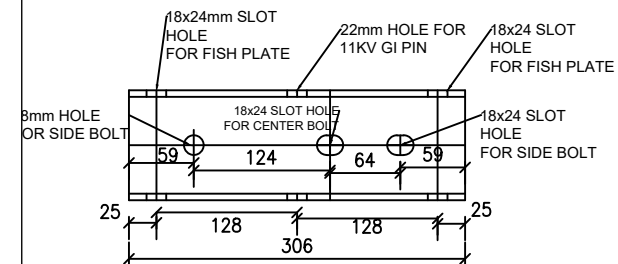


3 FISH PLATE(50x6)

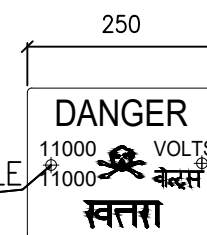
BOM OF GI ITEMS OF 11KV LINE CUT POINT 180 DEGREE							
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGTH (mm)	QTY. (NOS.)	WT (Kg/m)	TOTAL WT./ARGMT(Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	1	34.6/30.44	380.6/334.84
2	STRAIGHT CROSSARM BOTTOM	100X50X6 MM	CHANNEL	1200	2	9.56	11.472
3	FISH PLATE	50X6 MM	FLAT	280	8	2.36	0.661
4	STRAIGHT CROSSARM TOP	100X50X6 MM	CHANNEL	306	2	9.56	2.925
5	DANGER BOARD	250X200X6 MM	PLATE	250	2	9.42	2.355
6	BACK CLAMP FOR DANGER BOARD	25x3 MM	FLAT	510	2	0.59	0.300
7	STAY CLAMP	50x8MM	FLAT	551	2	3.14	1.730
TOTAL WEIGHT FOR RSJ STRUCTURE							423.45
TOTAL WEIGHT FOR WPB 160 STRUCTURE							377.69
A	BOLT & NUTS	M16		50	1	0.134	0.134
B	BOLT & NUTS	M16		90	3	0.187	0.561
C	BOLT & NUTS	M16		200	7	0.331	2.317
D	BOLT & NUTS	M8		50	2	0.002	0.004
E	FLAT WASHER	M16			22	0.014	0.308
F	SPRING WASHER	M16			22	0.009	0.198
G	FLAT WASHER	M8			4	0.005	0.02
H	SPRING WASHER	M8			4	0.002	0.008
TOTAL WEIGHT							3.55



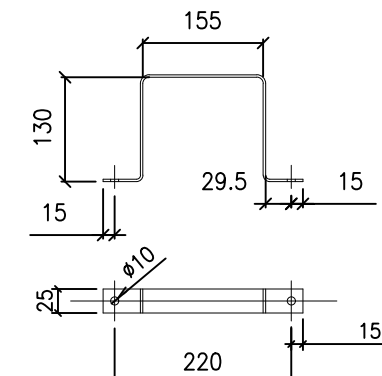
COIL EARTH PIT



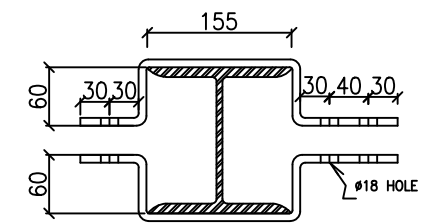
4 STRAIGHT CROSSARM TOP (100x50x6)



5 DANGER BOARD (250X220X3)X2NO.



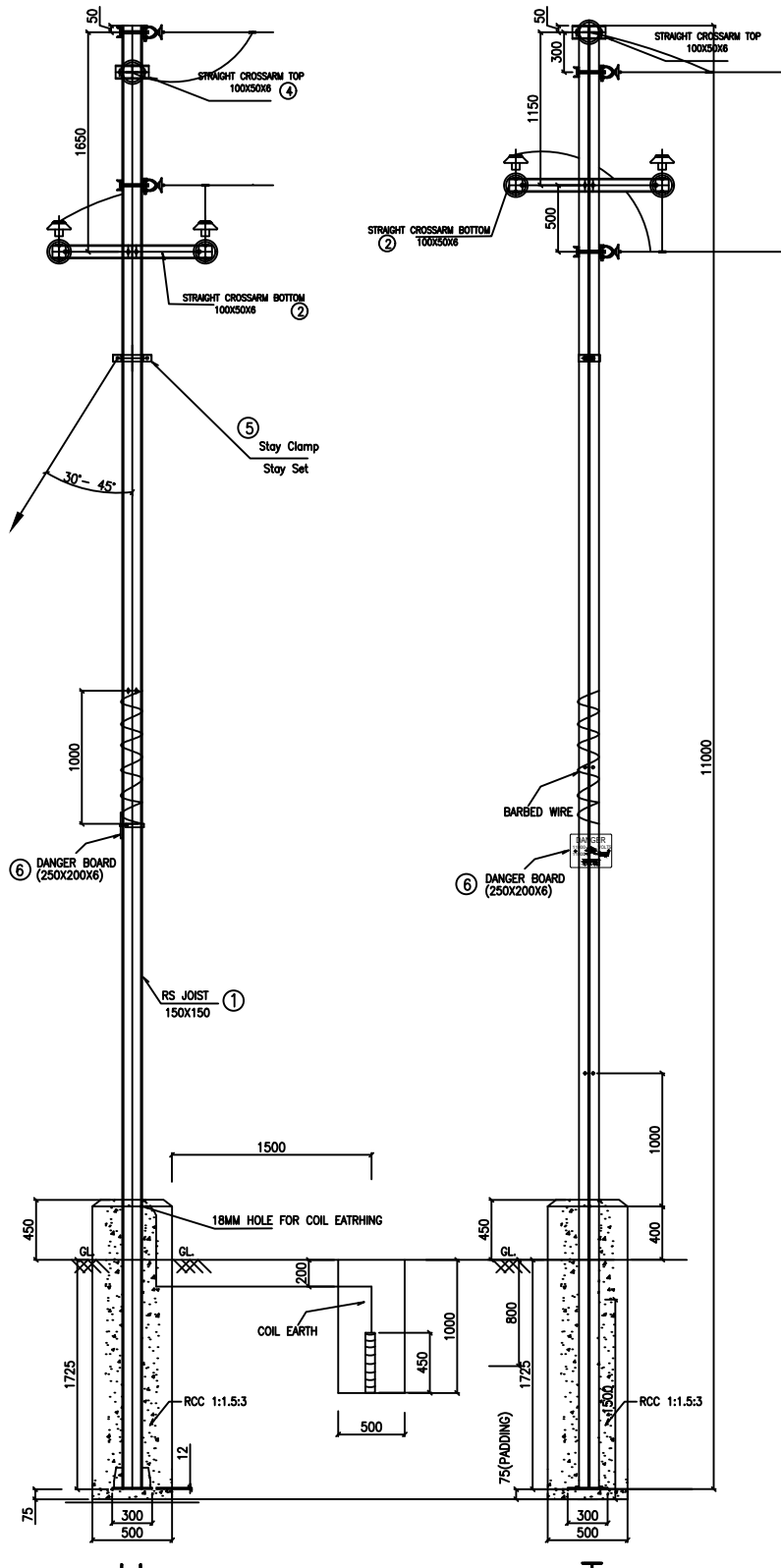
6 3R02-BACK CLAMP FOR DANGER BOARD(25X3)



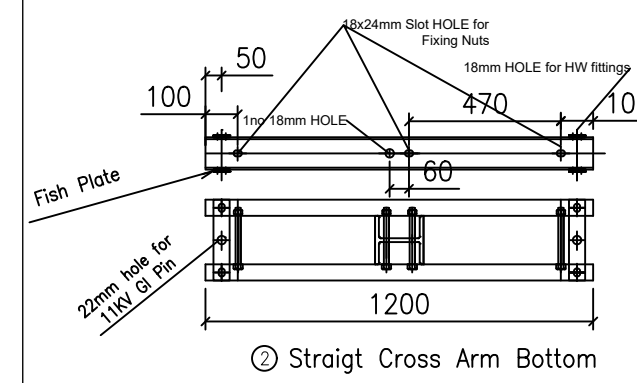
7 Stay Clamp(50X8)

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE SINGLE POLE CUT POINT 180 DEGREE(with 11mtr. 150x150 RSJ or WPB 160)		NAME	
DESIGN:		PHIROJ UTTARAY,E&Q	
DRAWN:		J SANGRAM, E&Q	
CHECKED:		K BHARDWAJ, E&Q	
APPROVED:		P GARG, E&Q	
SCALE : NTS	ISSUE DT: 31/05/2021	DRAWING NO:TPCODL-MVD-0004 REV NO:	

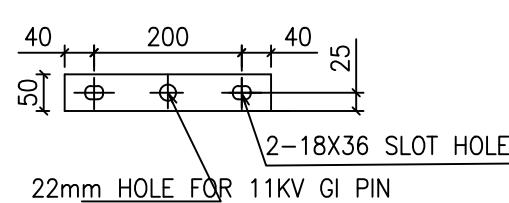
1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



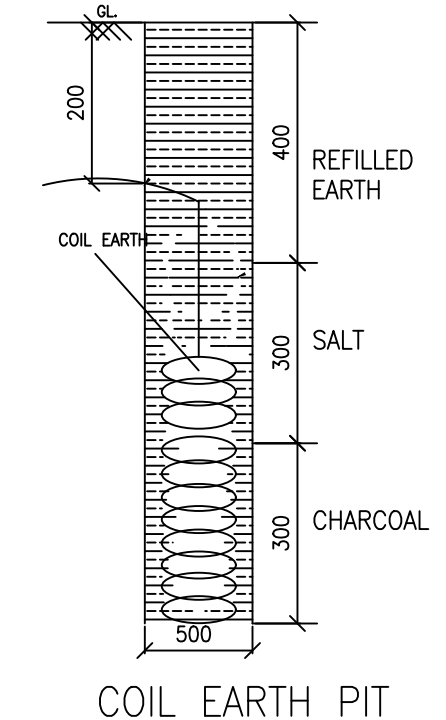
11KV LINE WITH CUTPOINT 90 DEGREE
SINGLE POLE STRUCTURE
(SCALE 1:25)



2 Straight Cross Arm Bottom

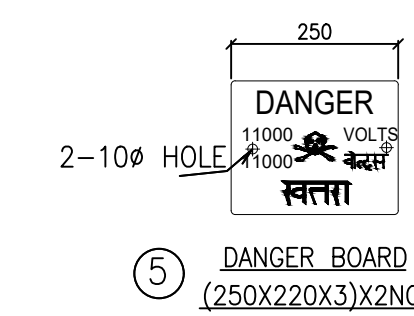


3 FISH PLATE(50x6)

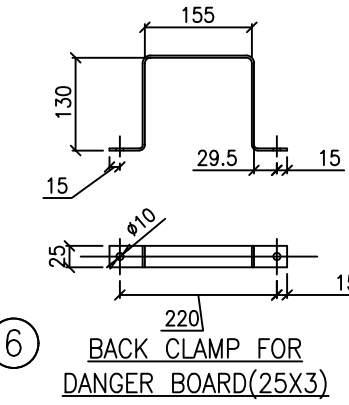


COIL EARTH PIT

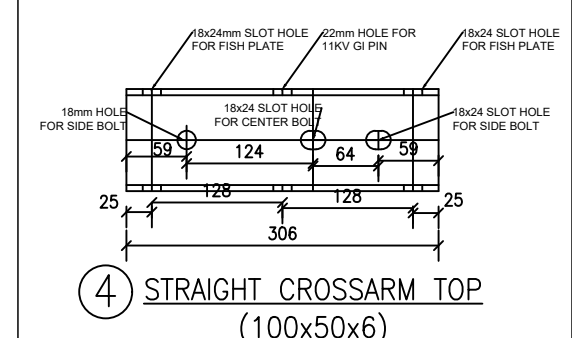
BOM OF GI ITEMS OF 11KV LINE CUT POINT 90 DEGREE								
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGT H (mm)	QTY. (NOS.)	WT (Kg/m)	WT/ITEM(Kg)	TOTAL WT /ARGMT(Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	1	34.6/30.44	380.6/334.84	380.6/334.84
2	STRAIGHT CROSSARM BOTTOM	100X50X6 MM	CHANNEL	1200	4	9.56	11.472	45.888
3	FISH PLATE	50X6 MM	FLAT	280	8	2.36	0.661	5.286
4	STRAIGHT CROSSARM TOP	100X50X6 MM	CHANNEL	306	4	9.56	2.925	11.701
5	DANGER BOARD	250X200X6 MM	PLATE	250	2	9.42	2.355	4.710
6	BACK CLAMP FOR DANGER BOARD	25x3 MM	FLAT	510	2	0.59	0.300	0.601
7	STAY CLAMP	50x8M	FLAT	551	2	3.14	1.730	3.460
TOTAL WEIGHT FOR RSJ STRUCTURE								452.25
TOTAL WEIGHT FOR WPB 160 STRUCTURE								406.49
A	BOLT & NUTS	M16		50	1		0.134	0.134
B	BOLT & NUTS	M16		90	3		0.187	0.561
B	BOLT & NUTS	M16		140	4		0.256	1.024
C	BOLT & NUTS	M16		200	14		0.331	4.634
D	BOLT & NUTS	M8		50	2		0.02	0.04
E	FLAT WASHER	M16		44			0.014	0.616
F	SPRING WASHER	M16		44			0.009	0.396
G	FLAT WASHER	M 8		4			0.005	0.02
H	SPRING WASHER	M 8		4			0.002	0.008
TOTAL WEIGHT								7.433



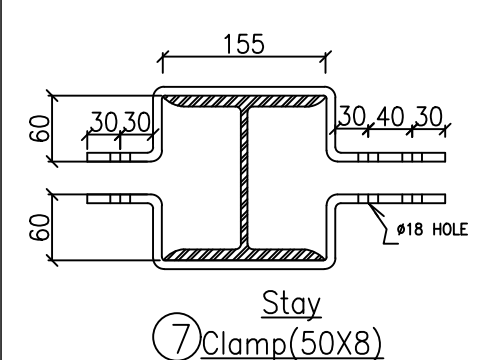
5 DANGER BOARD (250X220X3)X2NO.



6 BACK CLAMP FOR DANGER BOARD(25X3)



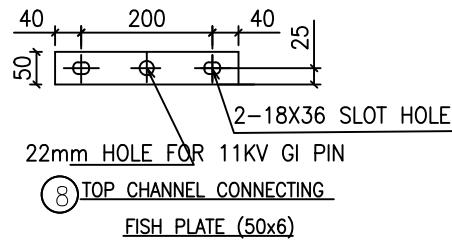
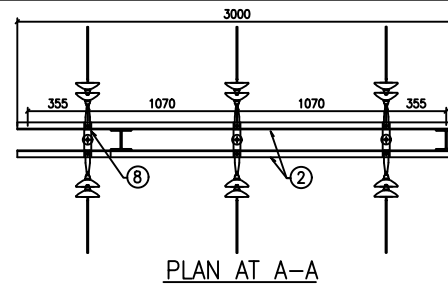
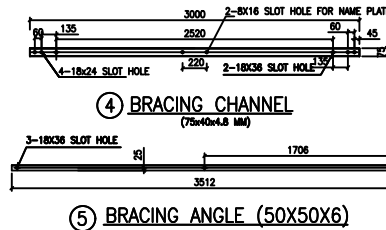
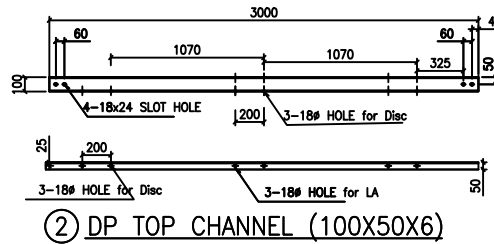
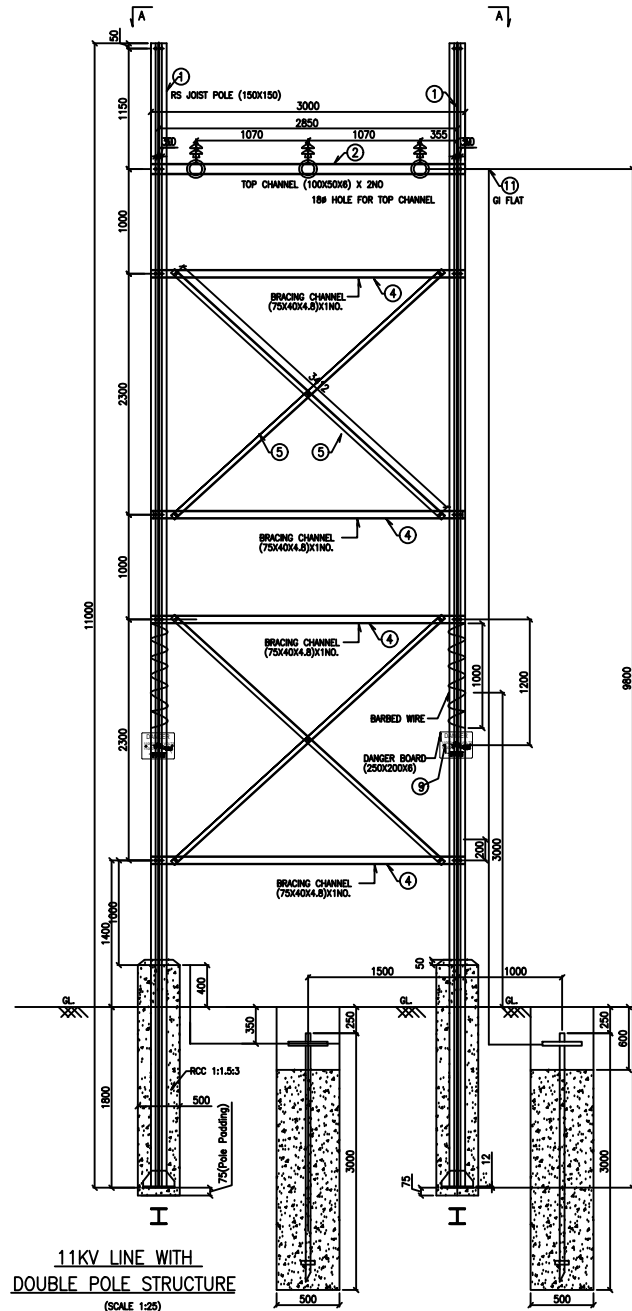
4 STRAIGHT CROSSARM TOP (100x50x6)



7 Stay Clamp(50X8)

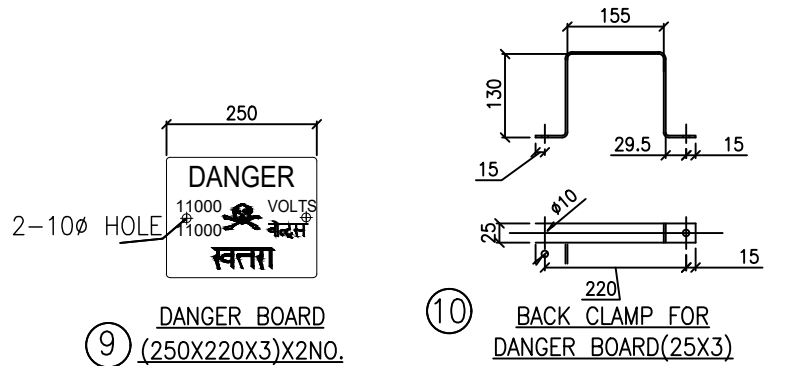
<p>TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED</p>		<p>TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.</p>	
<p>TITLE:- 11KV LINE SINGLE POLE CUT POINT 90 DEGREE(with 11mtr. 150x150 RSJ or WPB 160)</p>		<p>NAME</p>	
<p>SCALE : NTS</p>		<p>DESIGN: PHIROJ UTTARAY,E&Q</p>	
<p>ISSUE DT: 31/05/2021</p>		<p>DRAWN: J SANGRAM, E&Q</p>	
<p>DRAWING NO:TPCODL-MVD-0005 REV NO:</p>		<p>CHECKED: K BHARDWAJ, E&Q</p>	
<p></p>		<p>APPROVED: P GARG, E&Q</p>	

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



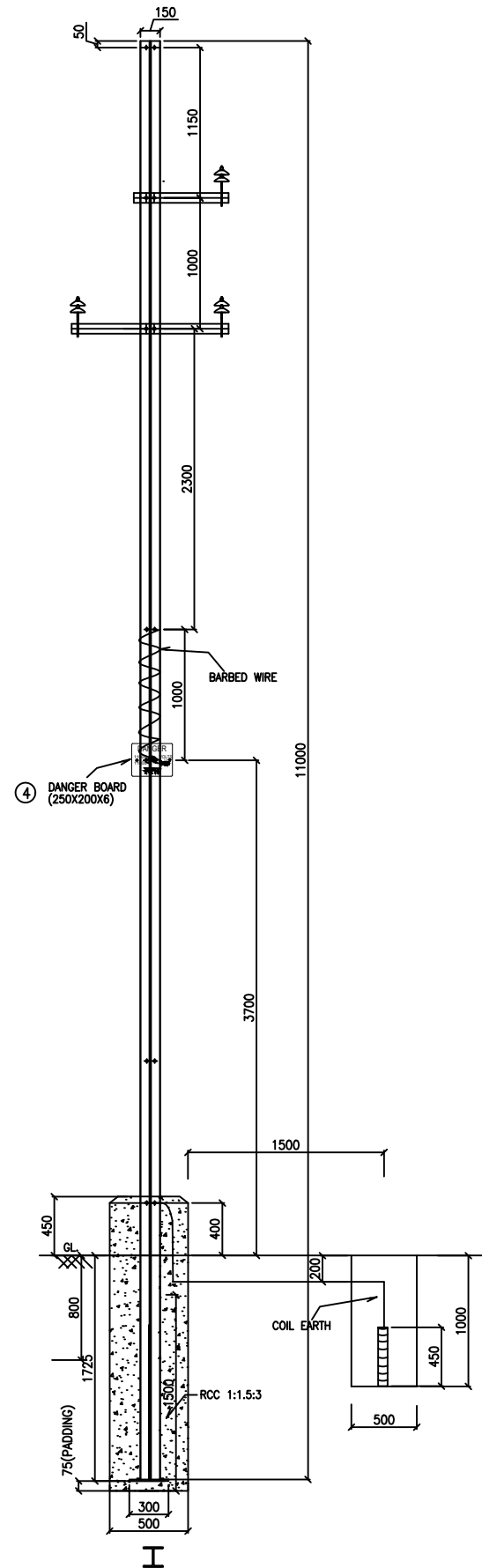
BOM OF GI ITEMS OF 11KV INTERPOSING LINE DP FOR EXISTING 9 MTR 11KV LINE

ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGTH (mm)	QTY. (NOS.)	WT (Kg/m)	WT/ITEM(Kg)	TOTAL WT /ARGMT(Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	2	34.6/30.44	380.6/334.84	761.2/669.68
2	DP TOP CHANNEL	100X50X6 MM	CHANNEL	3000	2	9.56	28.68	57.36
4	BRACNG CHANNEL	75X40X4.8 MM	CHANNEL	3000	4	7.14	21.42	85.68
5	BRACING ANGLE	50X50X6 MM	ANGLE	3512	4	4.50	15.80	63.216
8	FISH PLATE	50X6 MM	PLATE	280	6	2.36	0.66	3.96
9	DANGER BOARD	250X200X6 MM	PLATE	250	2	9.42	2.36	4.71
10	BACK CLAMP FOR DANGER BOARD	25x3 MM	FLAT	510	2	0.59	0.30	0.60
11	GI Flat	40x6 MM	FLAT	13000	1	1.90	5.32	24.70
12	PIPE EARTH		PIPE	3000	2			
TOTAL WEIGHT FOR RSJ STRUCTURE								1001.43
TOTAL WEIGHT FOR WPB 160 STRUCTURE								852.55
A	BOLT & NUTS	M16		50	40		0.134	5.36
B	BOLT & NUTS	M16		140	6		0.256	1.536
C	BOLT & NUTS	M16		200	0		0.331	0
D	BOLT & NUTS	M8		50	4		0.026	0.104
E	FLAT WASHER	M16			84		0.014	1.176
F	SPRING WASHER	M16			84		0.009	0.756
G	FLAT WASHER	M8			12		0.005	0.06
H	SPRING WASHER	M8			12		0.002	0.024
TOTAL WEIGHT								9.016



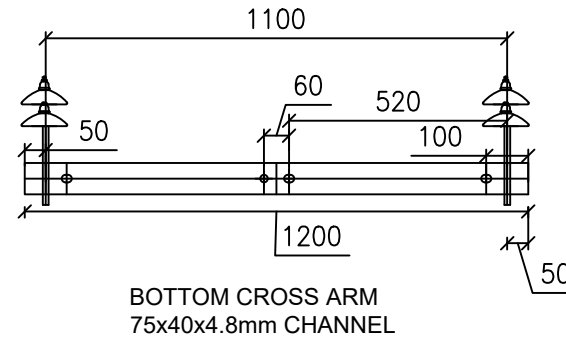
TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV INTERPOSING LINE DP FOR EXISTING 9MTR 11KV LINE		NAME	
		DESIGN:	PHIROJ UTTARAY,E&Q
		DRAWN:	J SANGRAM, E&Q
		CHECKED:	K BHARDWAJ, E&Q
		APPROVED:	P GARG, E&Q
SCALE :	NTS	ISSUE DT:	31/05/2021
		DRAWING NO:TPCODL-MVD-0007 REV NO:	

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)

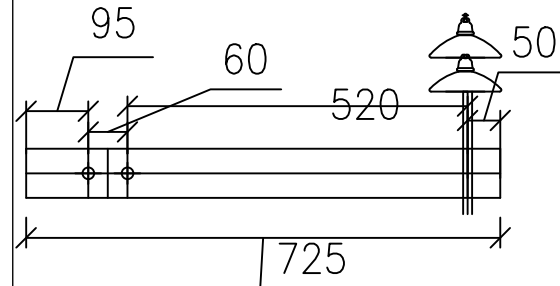


11KV SINGLE POLE CANTELEVER ARRANGEMENT FOR EXST. 9 MTR CKT LINE

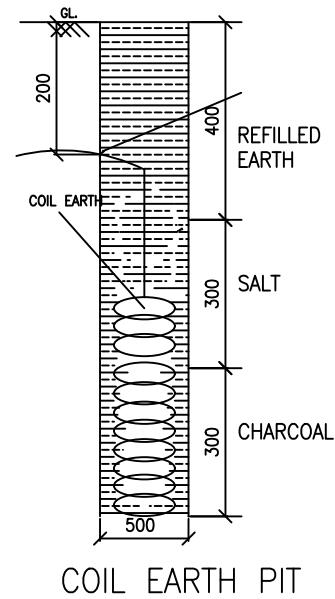
(SCALE 1:25)



BOTTOM CROSS ARM
75x40x4.8mm CHANNEL

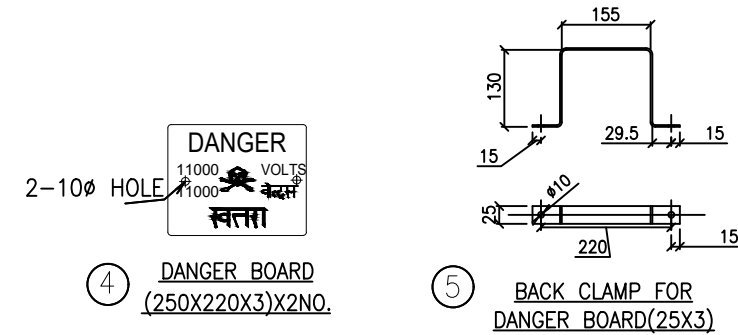


TOP CROSS ARM
75x40x4.8mm CHANNEL

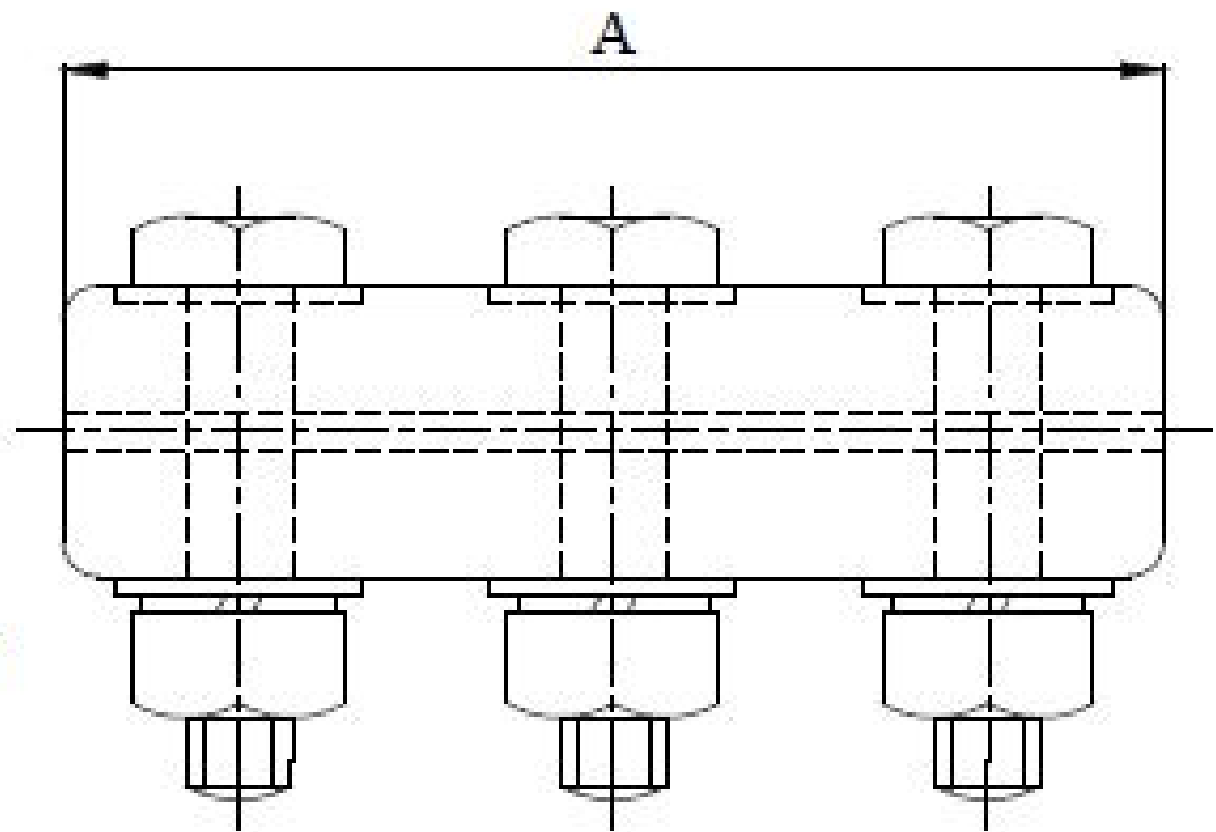
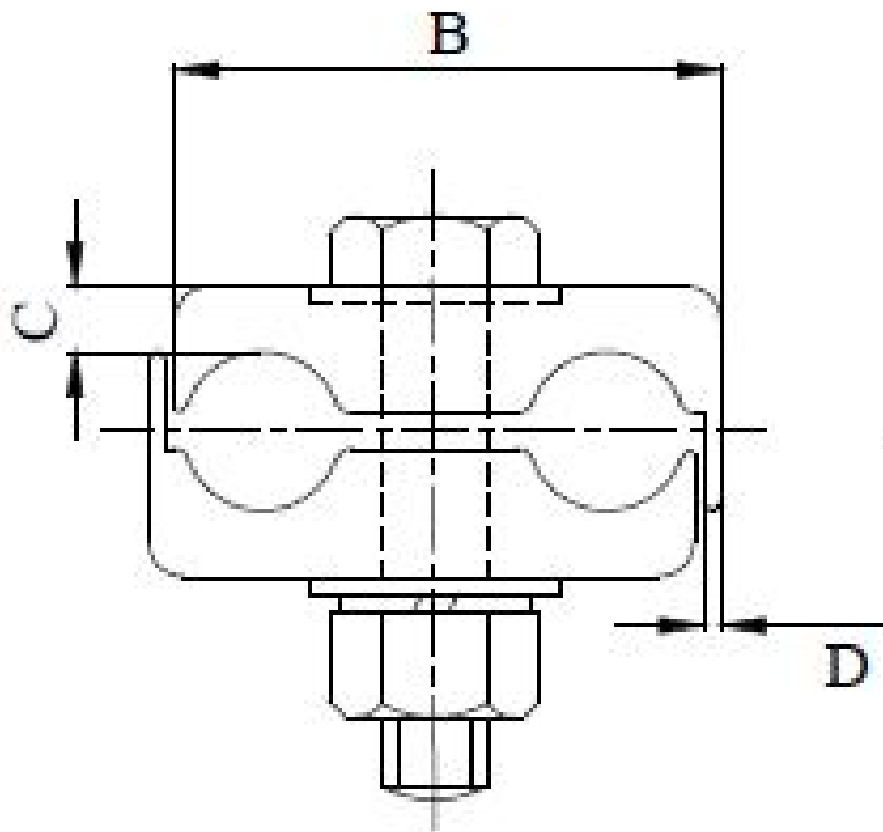


COIL EARTH PIT

BOM OF GI ITEMS FOR LINE POLE ON EXISTING 9MTR 11KV LINE								
ITEM NO.	DESCRIPTION	SECTION	MATERIAL	LENGTH (mm)	QTY. (NOS.)	WT (Kg/m)	WT/ITEM(Kg)	TOTAL WT./ARGMT(Kg)
1	RSJ POLE / WPB 160	150X150 MM	JOIST	11000	1	34.6/30.44	380.6/334.84	380.6/334.84
2	BOTTOM CROSSARM	75X40X4.8 MM	CHANNEL	1200	1	7.14	8.568	8.568
3	TOP CROSS ARM	75X40X4.8 MM	CHANNEL	725	1	7.14	5.177	5.177
4	DANGER BOARD	250X200X6 MM	PLATE	250	1	9.42	2.355	2.355
5	BACK CLAMP FOR DANGER BOARD	25x3 MM	FLAT	510	1	0.59	0.300	0.300
TOTAL WEIGHT FOR RSJ STRUCTURE								397.00
TOTAL WEIGHT FOR WPB 160 STRUCTURE								351.24
A	BOLT & NUTS	M16		50	5		0.134	0.67
B	BOLT & NUTS	M16		120	0		0.229	0
C	BOLT & NUTS	M8		50	2		0.02	0.04
D	FLAT WASHER	M16			10		0.014	0.14
E	SPRING WASHER	M16			10		0.009	0.09
F	FLAT WASHER	M8			4		0.005	0.02
G	SPRING WASHER	M8			4		0.002	0.008
TOTAL WEIGHT								0.968

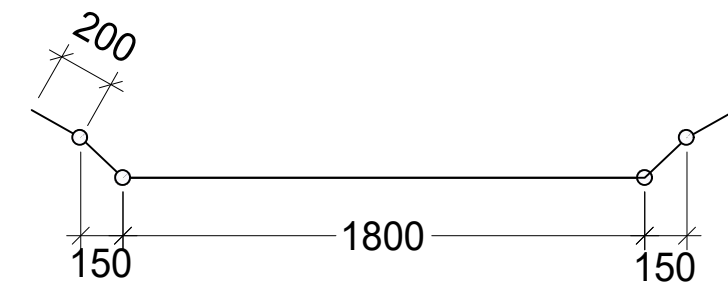
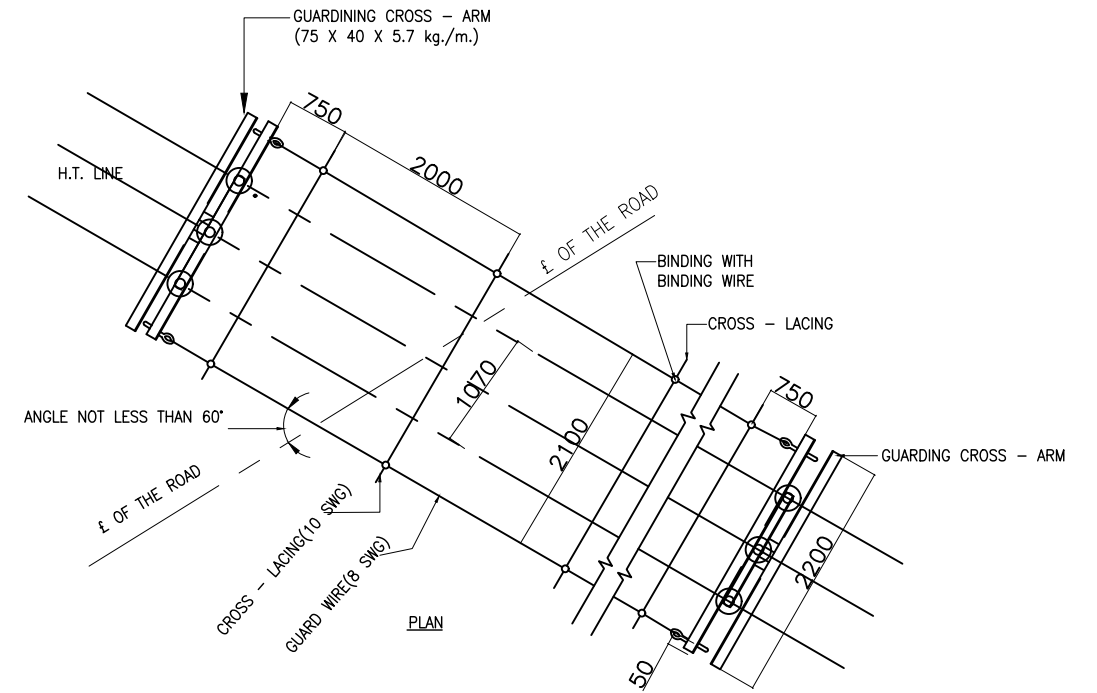
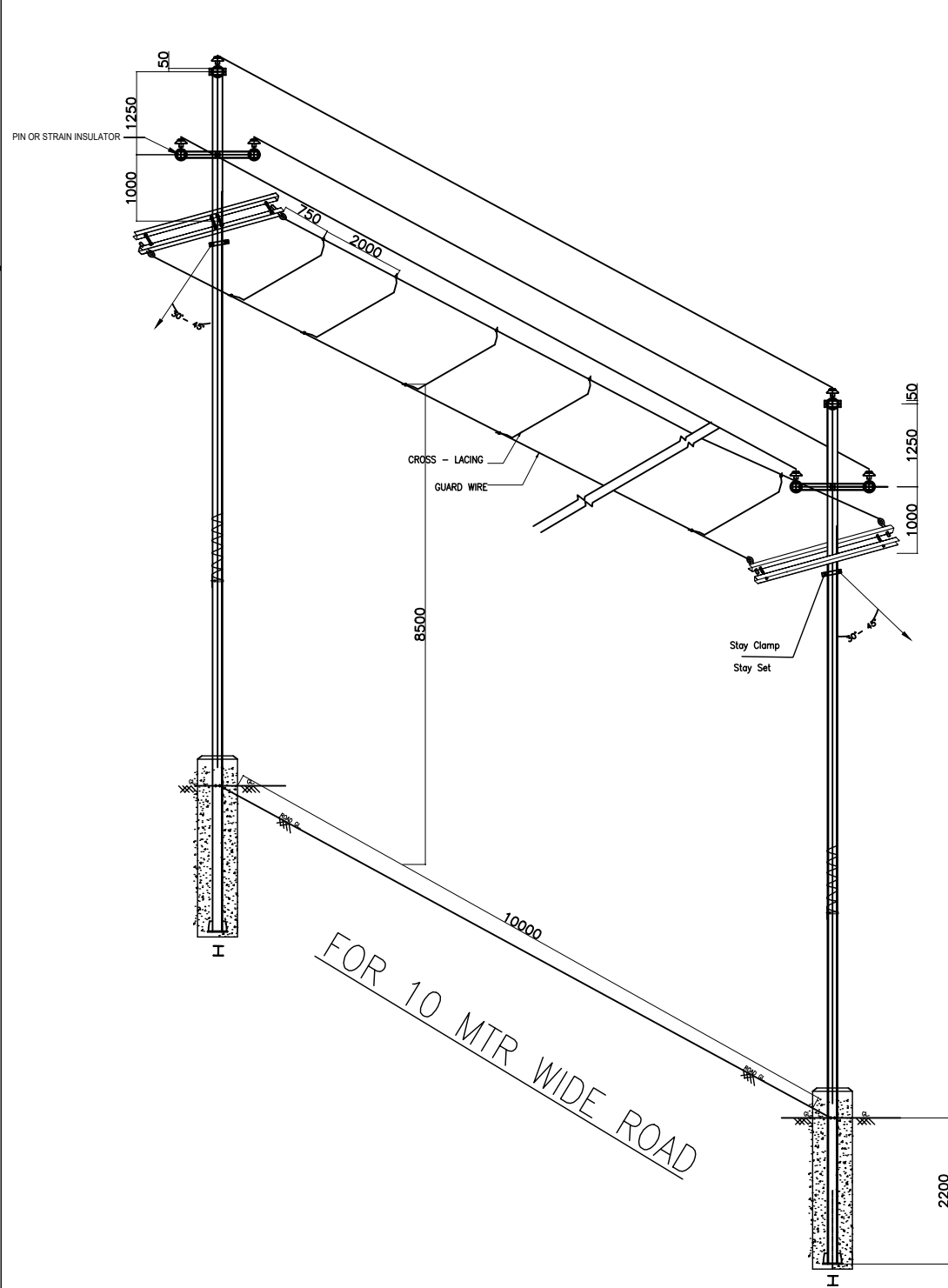
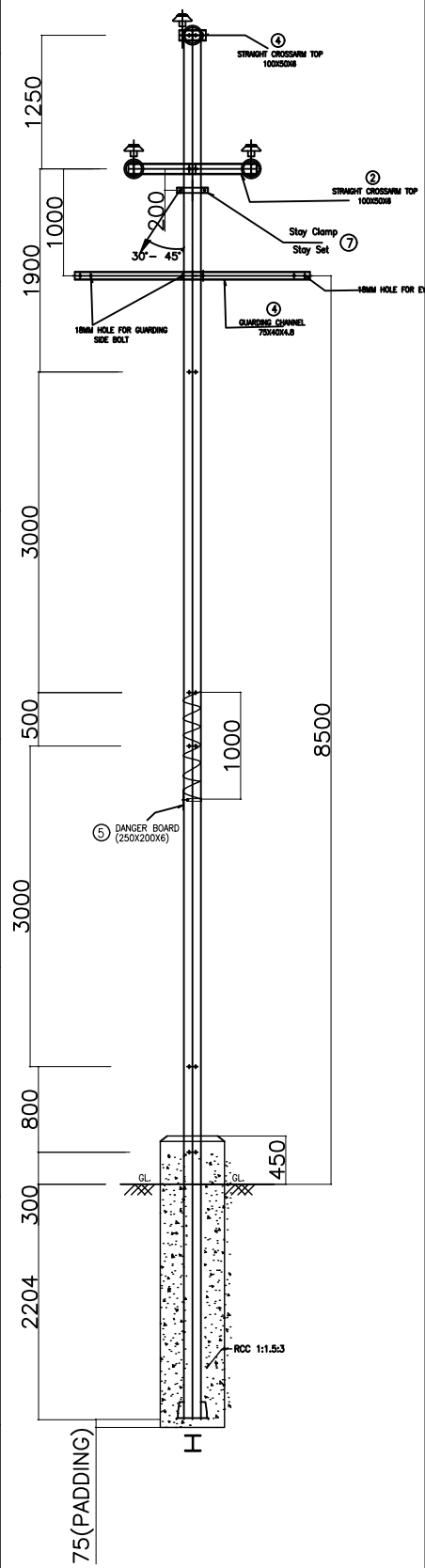


TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV INTERPOSING POLE HAVING CANTELEVER ARRANGEMENT FOR 9MTR EXISTING 11KV LINE		NAME	
DESIGN:-		PHIROJ UTTARAY,E&Q	
DRAWN:-		J SANGRAM, E&Q	
CHECKED:-		K BHARDWAJ, E&Q	
APPROVED:-		P GARG, E&Q	
SCALE : NTS	ISSUE DT: 31/05/2021	DRAWING NO:TPCODL-MVD-0006 REV NO:	



Conductor Name	Conductor Dia.	Conductor Dia.	Dimension In MM				No. of Bolt	Bolt Size
			A	B	C	D		
Panther To Panther	19.7	19.7	135	76	10	4.5	3	M16
Wolf To Wolf	17.0	17.0	135	73	10	4.5	3	M16
Dog To Dog	12.78	12.78	100	65	10	4.5	3	M12

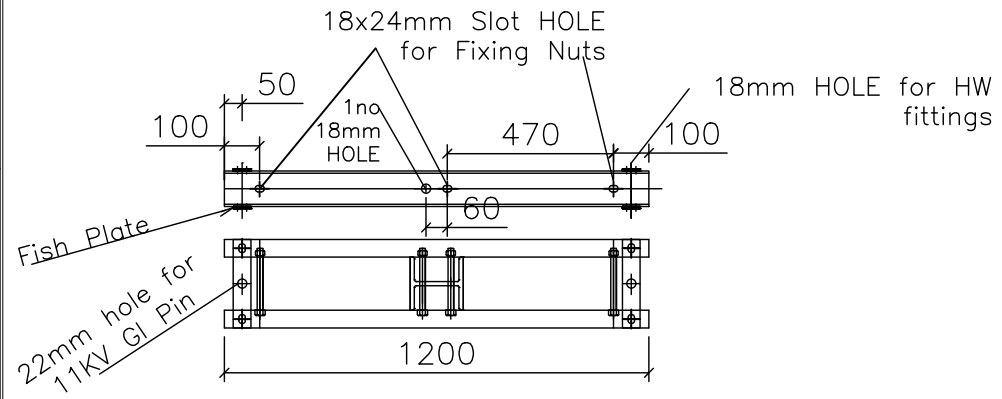
1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



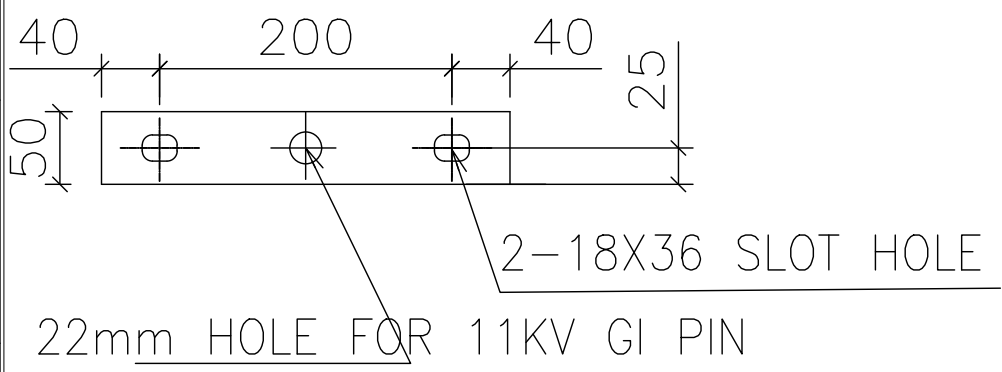
SECTION OF CROSS LACINGS

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE PROTECTIVE GUARDING ACROSS MAJOR ROAD CROSSINGS ON SINGLE POLE(USING 13MTR 150RSJ/WPB 160)		NAME	
SCALE : NTS		DESIGN:	PHIROJ UTTARAY, E&Q
ISSUE DT: 31/05/2021		DRAWN:	J SANGRAM, E&Q
		CHECKED:	K BHARDWAJ, E&Q
		APPROVED:	P GARG, E&Q
		DRAWING NO: TPCODL-MVD-0009 REV NO: Sheet: 1 of 2	

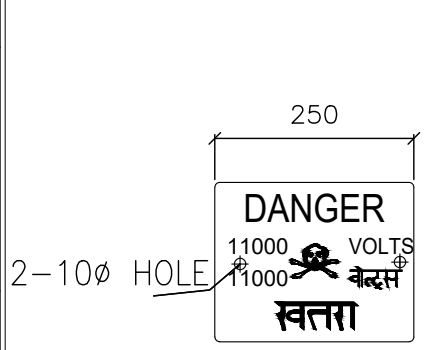
1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



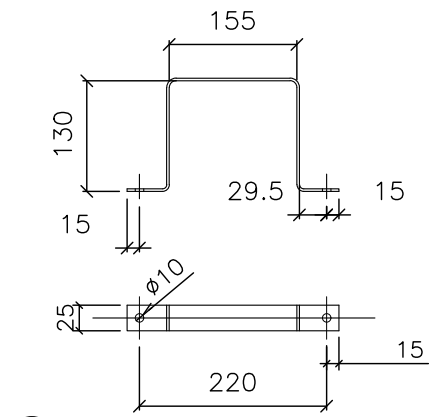
② Straight Cross Arm Bottom



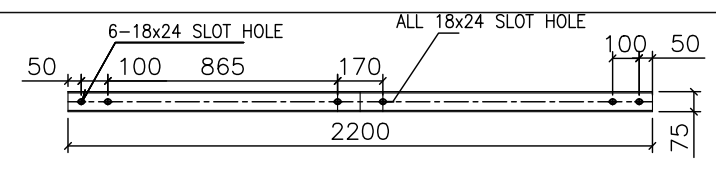
③ FISH PLATE(50x6)



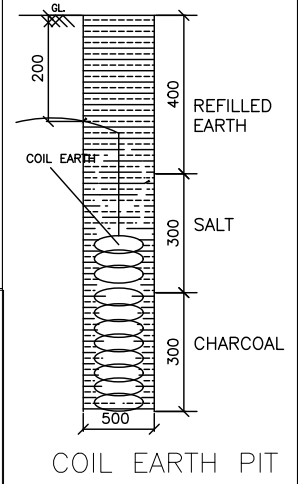
⑤ DANGER BOARD (250X220X3)X1NO.



⑥ BACK CLAMP FOR DANGER BOARD(25X3)



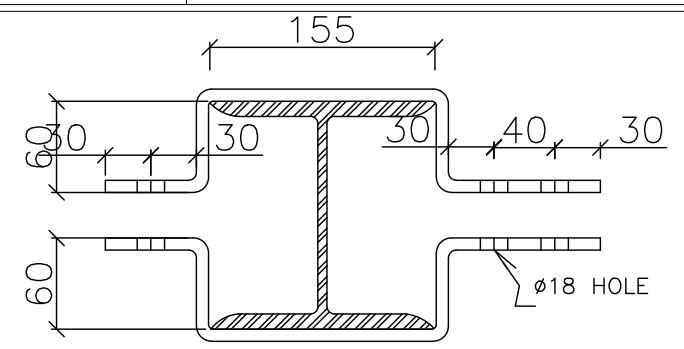
⑧ PLAN GUARDING CROSS ARM



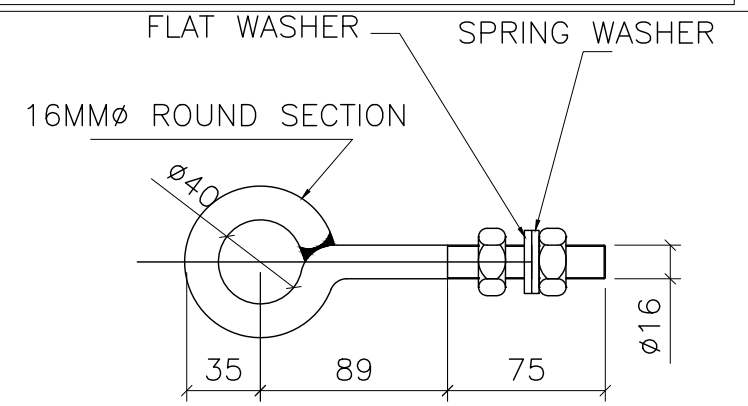
COIL EARTH PIT

BOM OF GI ITEMS OF 11KV ROAD CROSSING ON SINGLE POLE								
ITEM NO	DESCRIPTION (mm)	SECTION	MATERIALS	LENGTH (mm)	QTY (Nos)	WT (KG/MTR)	WT/ ITEM (KG)	TOTAL WT. (KG)
1	RSJ POLE/ WPB 160	150x150/160x152	JOIST	13000	2	34.6 / 30.44	449.8 / 395.72	899.6 / 791.44
2	STRAIGHT CROSS ARM BOTTOM	100x50x6	CHANNEL	1200	4	9.5600	11.472	45.888
3	FISH PLATE	50x6	FLAT	280	16	2.3600	0.661	10.573
4	STRAIGHT CROSS ARM TOP	100x50x6	CHANNEL	306	4	9.5600	2.925	11.701
5	DANGER BOARD	200x6	FLAT	250	2	9.4200	2.355	4.710
6	BACK CLAMP FOR DANGER BOARD	25x3	FLAT	510	2	0.5900	0.301	0.602
7	STAY CLAMP	50x8	FLAT	551	2	3.1400	1.730	3.460
8	CHANNEL FOR GUARDING	75x40x4.8	CHANNEL	2200	4	7.1400	15.708	62.832
9	EYE HOOK(Along with 2nuts,1 flat & spring washer each)		M16 ROD	305	4	1.5700	0.479	1.915
10	8 SWG		WIRE	42000	1	0.1310	5.502	5.502
11	10 SWG		WIRE	15000	1	0.0820	1.230	1.230
							TOTAL WT EXCEPT POLE	148.414

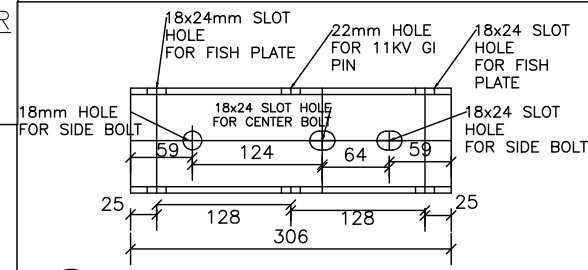
NUT & BOLTS REQUIRED											
NUT & BOLTS	LENGTH (mm)	STRAIGHT CROSS ARM BOTTOM	FISH PLATE	STRAIGHT CROSS ARM TOP	DANGER BOARD	STAY CLAMP	GUARDING CROSS ARM	EARTHING	TOTAL (No)	UNIT WT (Kg)	TOTAL WT. (Kg)
M16	50							2	2	0.134	0.268
M16	90					6			6	0.161	0.966
M16	200	8	8	6			8		30	0.331	9.930
M8	70				4				4	0.033	0.132
M16	FLAT WASHER								76	0.014	1.064
M16	SPRING WASHER								76	0.009	0.684
M8	FLAT WASHER								8	0.005	0.040
M8	SPRING WASHER								8	0.002	0.016
									TOTAL WEIGHT		13.100



⑦ Stay Clamp(50X8)



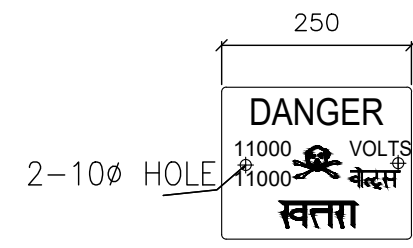
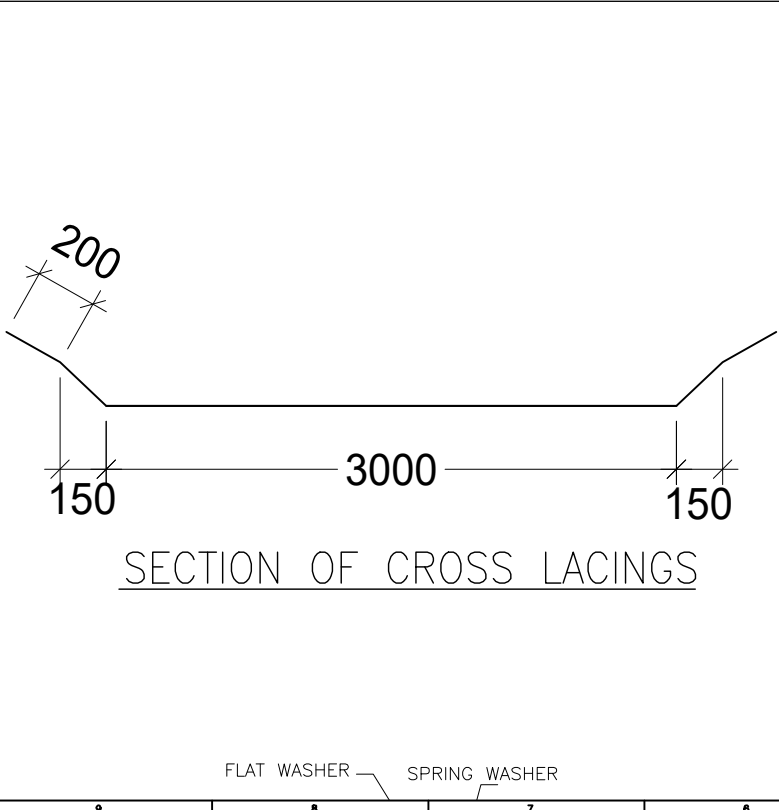
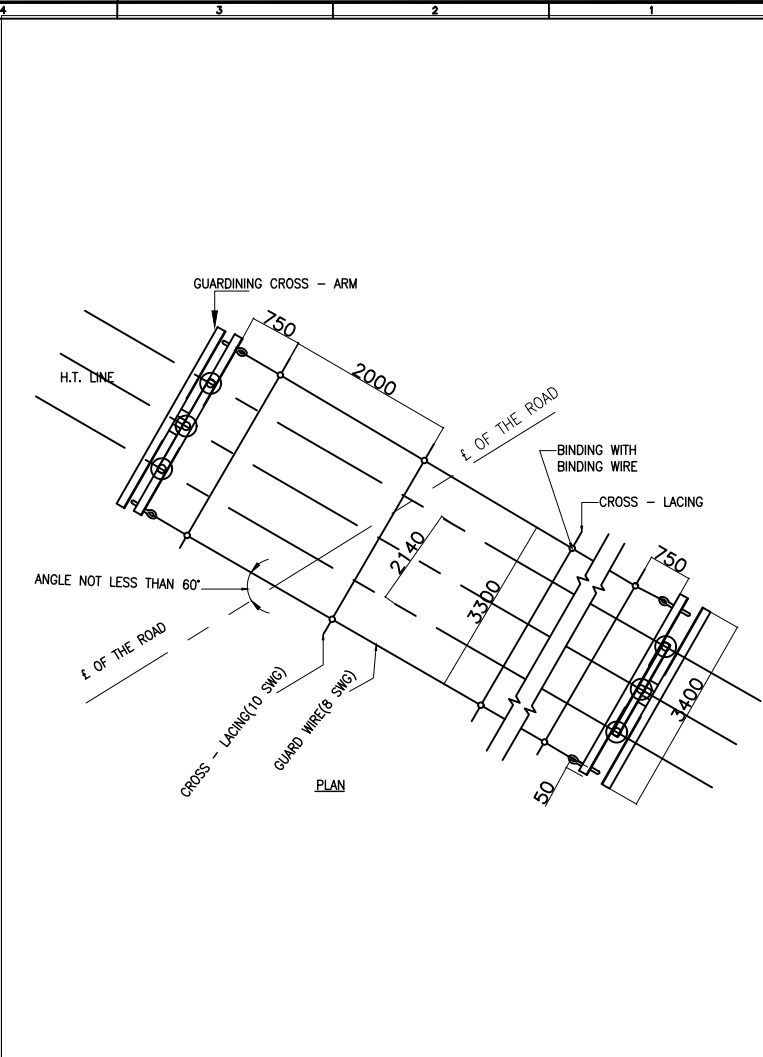
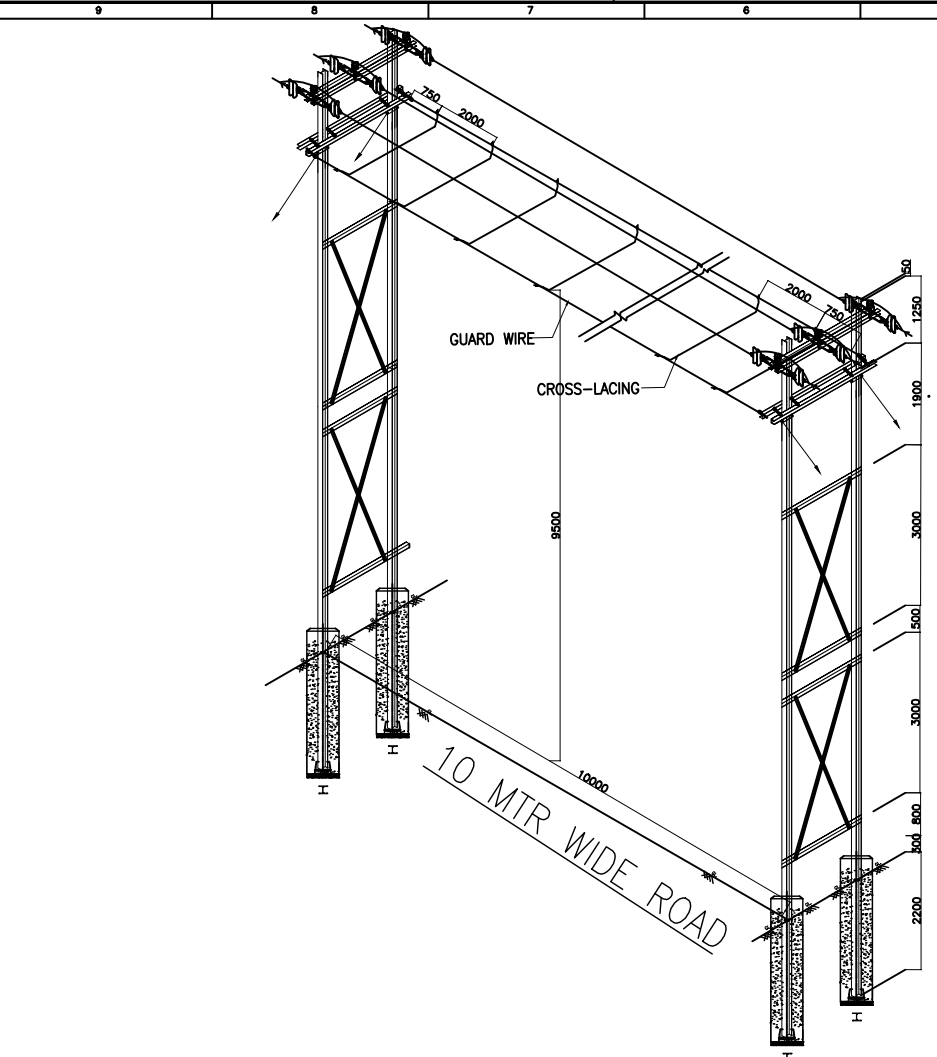
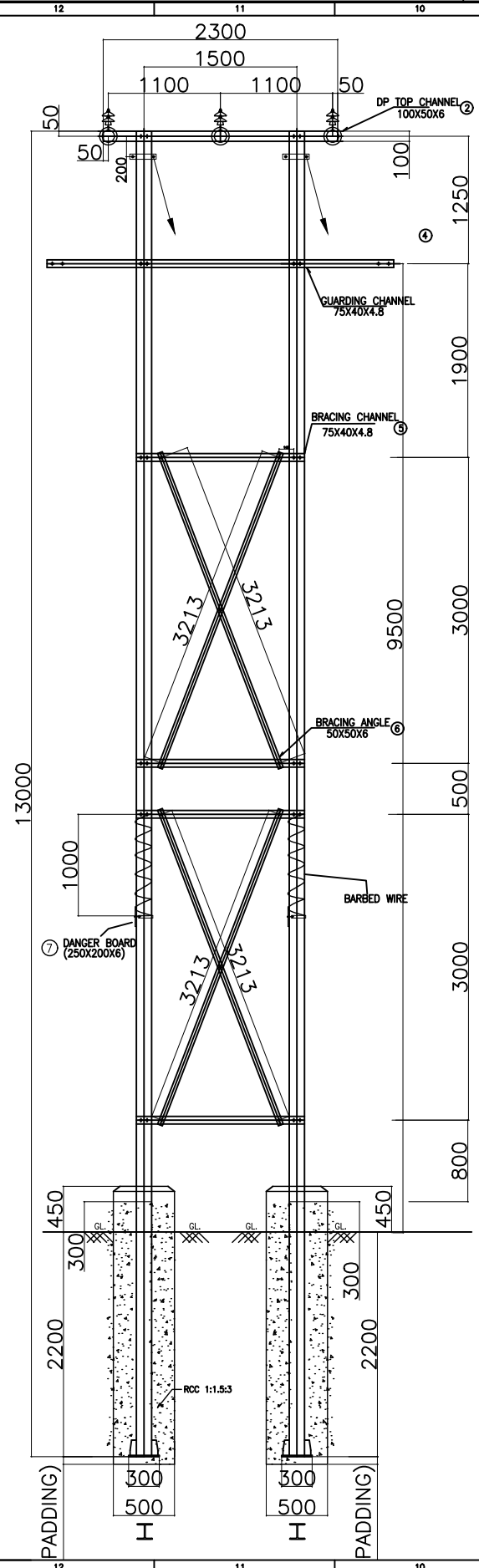
⑨ EYE HOOK



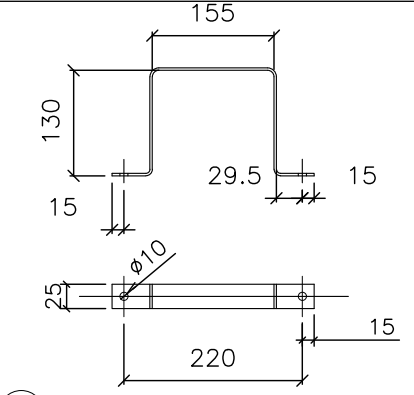
④ STRAIGHT CROSSARM TOP (100x50x6)

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE PROTECTIVE GUARDING ACROSS MAJOR ROAD CROSSINGS ON SINGLE POLE(USING 13MTR 150RSJ/WPB 160)		NAME	
SCALE : NTS	ISSUE DT: 31/05/2021	DESIGN:	PHIROJ UTTARAY, E&Q
		DRAWN:	J SANGRAM, E&Q
		CHECKED:	K BHARDWAJ, E&Q
		APPROVED:	P GARG, E&Q
		DRAWING NO:	TPCODL-MVD-0009 REV NO:
			Sheet: 2 of 2

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



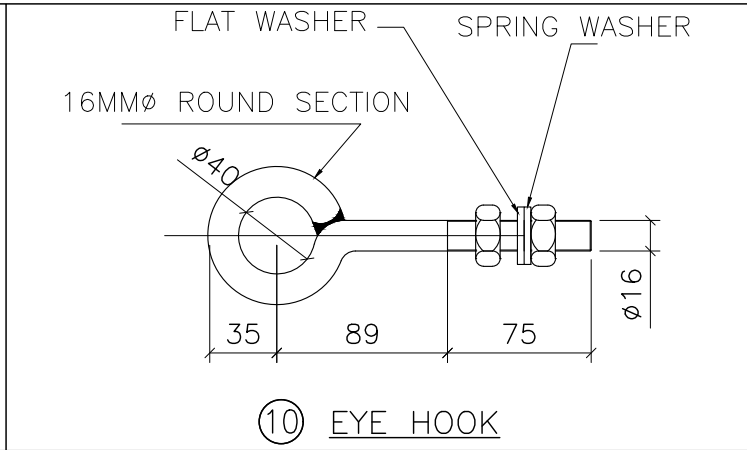
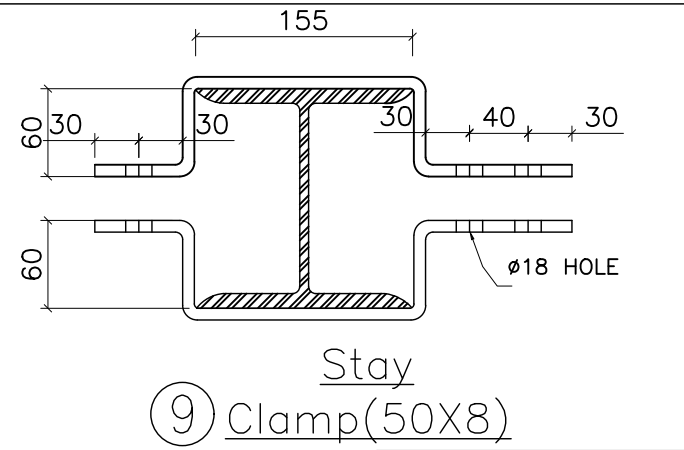
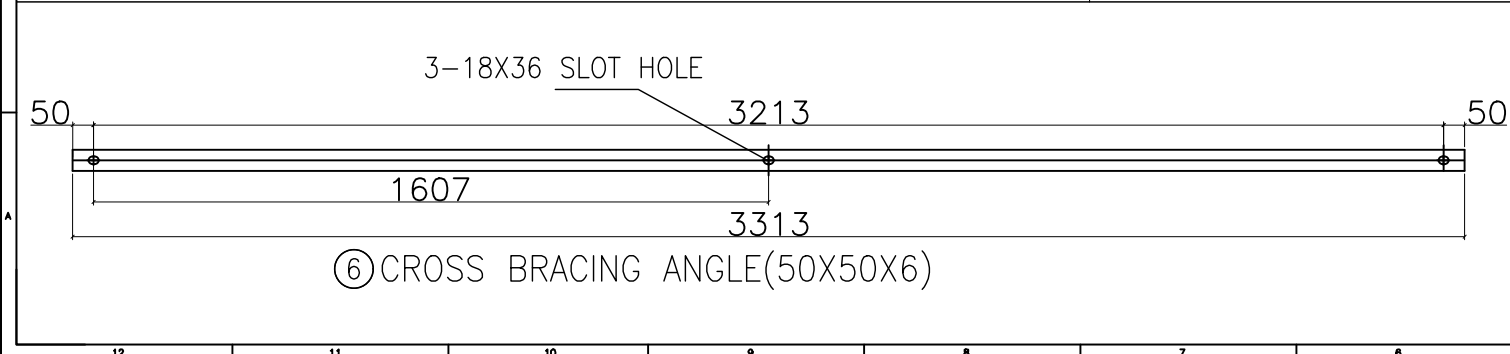
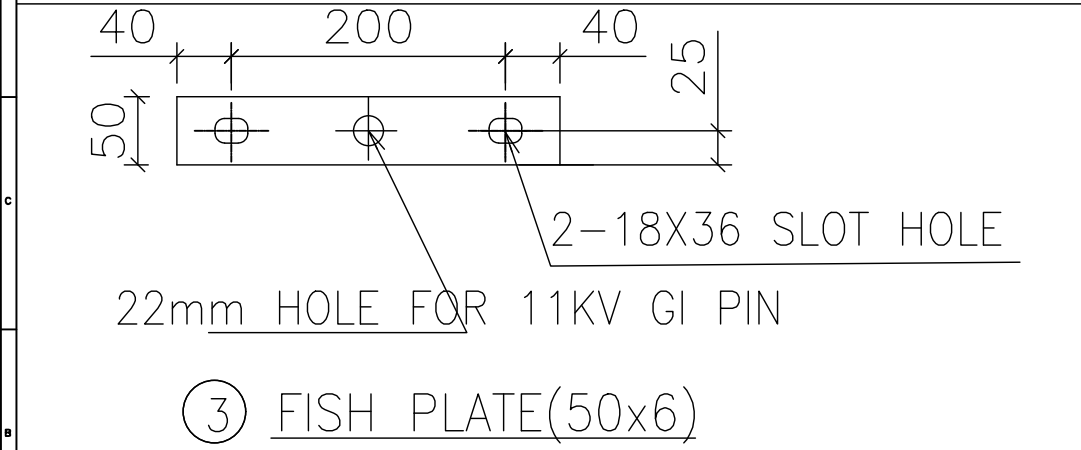
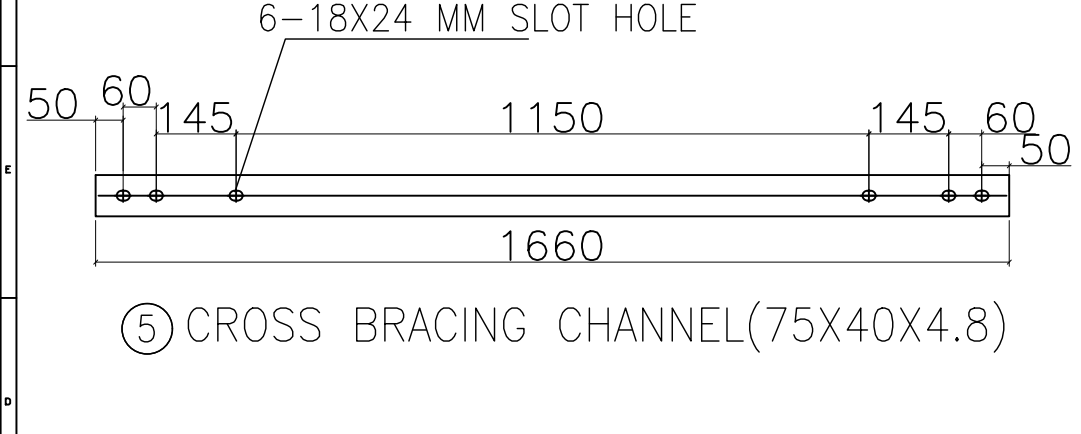
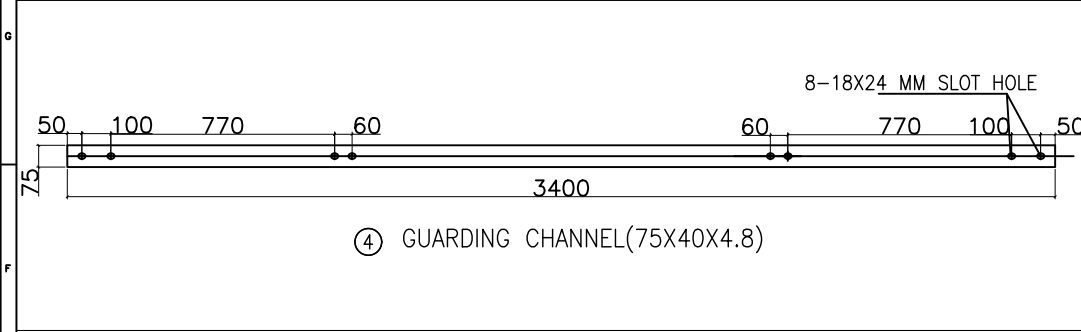
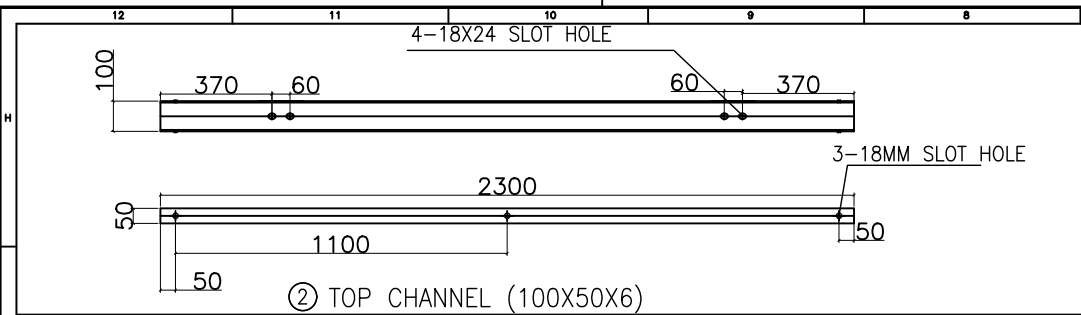
7 DANGER BOARD (250X220X3)X1NO.



8 BACK CLAMP FOR DANGER BOARD(25X3)

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE PROTECTIVE GUARDING ACROSS MAJOR ROAD CROSSINGS ON DOUBLE POLE(USING 13MTR 150RSJ/WPB 160)		NAME	
SCALE : NTS		DESIGN:	PHIROJ UTTARAY, E&Q
ISSUE DT: 31/05/2021		DRAWN:	J SANGRAM, E&Q
		CHECKED:	K BHARDWAJ, E&Q
		APPROVED:	P GARG, E&Q
		DRAWING NO: TPCODL-MVD-0010 REV NO: Sheet: 1 of 2	

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)



BOM OF GI ITEMS OF 11KV ROAD CROSSING ON DOUBLE POLE							
ITEM NO	DESCRIPTION (mm)	SECTION	MATERIALS	LENGTH (mm)	QTY (Nos)	WT (KG/MTR)	TOTAL WT. (KG)
1	RSJ POLE/ WPB 160	150x150/160x152	JOIST	13000	4	34.6 / 30.44	1799.2 / 1582.88
2	DP TOP CHANNEL	100x50x6	CHANNEL	2300	4	9.5600	21.988
3	FISH PLATE	50x6	FLAT	280	12	2.3600	0.661
4	CHANNEL FOR GUARDING	75x40x4.8	CHANNEL	3400	4	7.1400	24.276
5	CROSS BRACING	75x40x4.8	CHANNEL	1660	8	7.1400	11.852
6	CROSS BRACING	50x50x6	ANGLE	3313	8	4.5000	14.909
7	DANGER BOARD	200x6	FLAT	250	4	9.4200	2.355
8	BACK CLAMP FOR DANGER BOARD	25x3	FLAT	510	4	0.5900	0.301
9	STAY CLAMP	50x8	FLAT	551	4	3.1400	1.730
10	EYE HOOK(Along with 2nuts,1 flat & spring washer each)		M16 ROD	305	4	1.5700	0.479
10	8 SWG		WIRE	42000	1	0.1310	5.502
11	10 SWG		WIRE	22200	1	0.0820	1.820
12	PIPE EARTHING		PIPE	3000	4	0.0000	0.000
TOTAL WT EXCEPT POLE							433.855

NUT & BOLTS REQUIRED												
NUT & BOLTS	LENGTH (mm)	DP TOP CHANNEL	FISH PLATE	CROSS BRACING CHANNEL	CROSS BRACING ANGLE	DANGER BOARD	STAY CLAMP	GUARDING CROSS ARM	EARTHING	TOTAL (No)	UNIT WT (Kg)	TOTAL WT. (Kg)
M16	50				20				4	24	0.134	3.216
M16	90						12			12	0.161	1.932
M16	200	8		32				8		48	0.331	15.888
M8	70				0	8				8	0.033	0.264
M16	FLAT WASHER									168	0.014	2.352
M16	SPRING WASHER									168	0.009	1.512
M8	FLAT WASHER									16	0.005	0.080
M8	SPRING WASHER									16	0.002	0.032
TOTAL WEIGHT												25.276

TPCODL
TP CENTRAL ODISHA DISTRIBUTION LIMITED

TATA POWER
CENTRAL ODISHA DISTRIBUTION LTD.

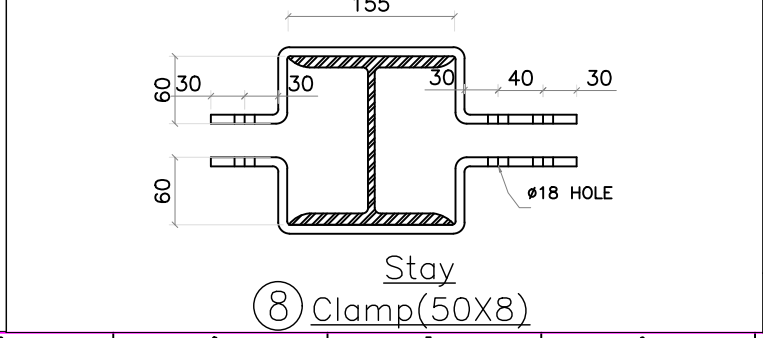
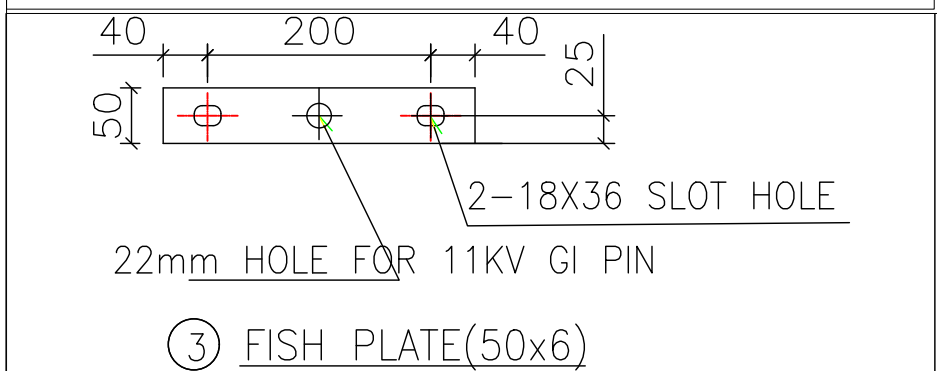
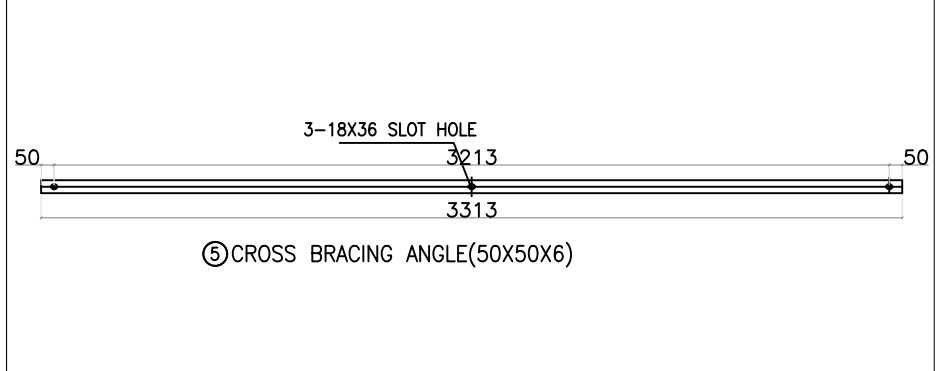
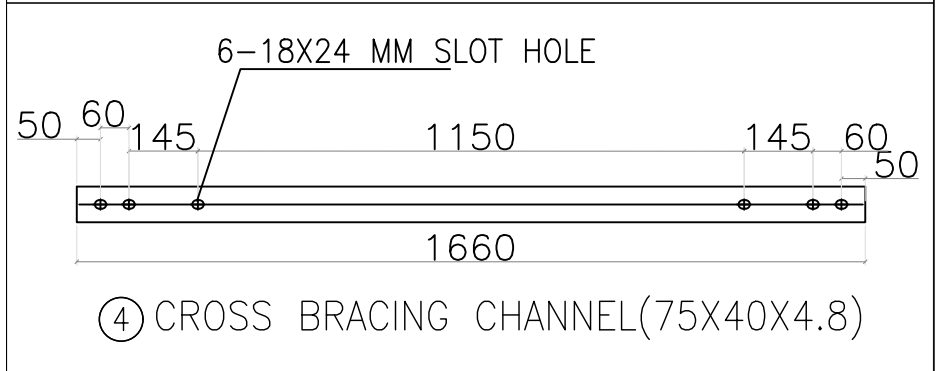
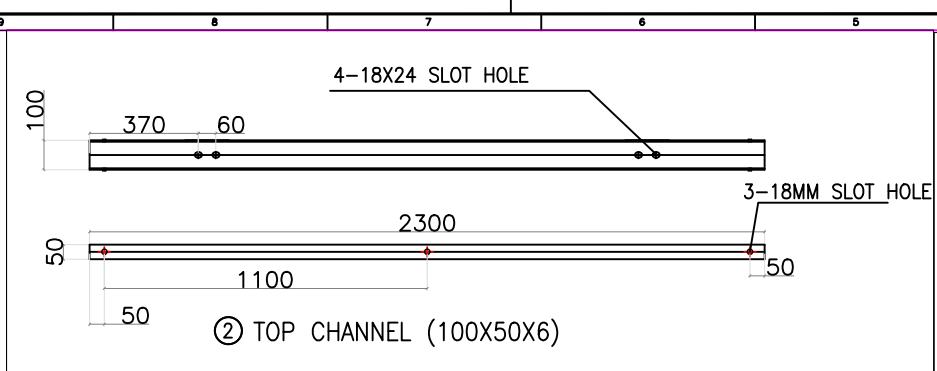
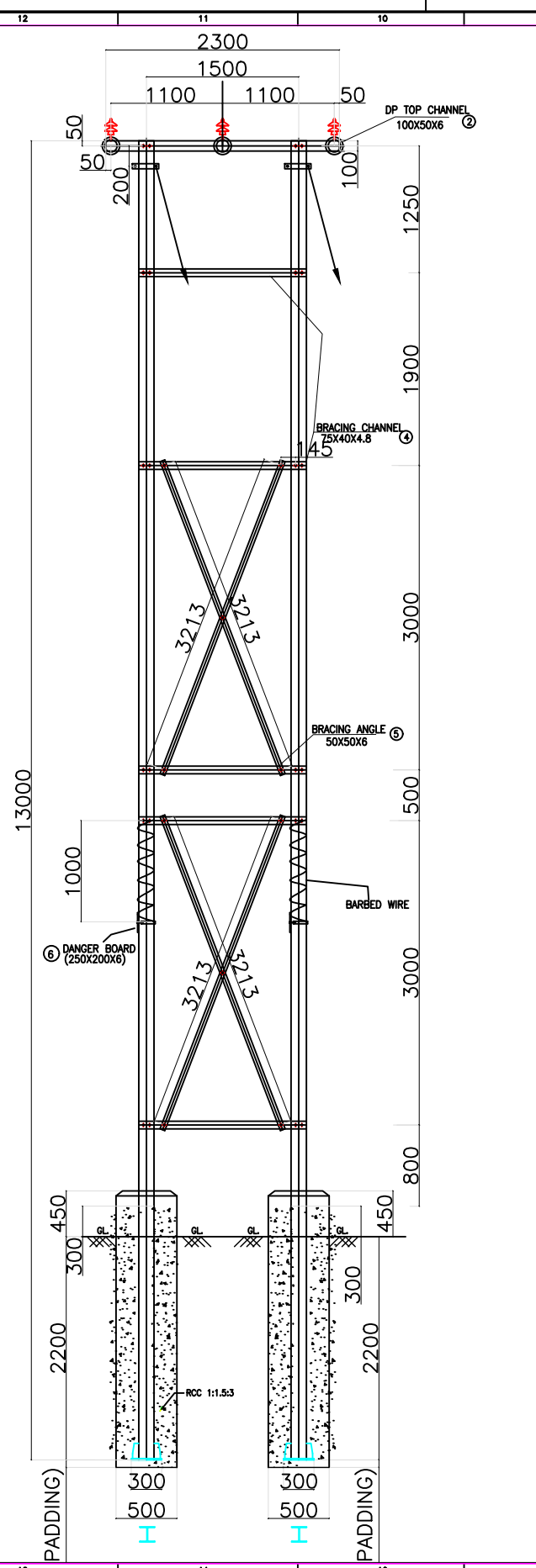
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11KV LINE PROTECTIVE GUARDING ACROSS MAJOR ROAD CROSSINGS ON DOUBLE POLE(USING 13MTR 150RSJ/WPB 160)

NAME	
DESIGN:	PHIROJ UTTARAY, E&Q
DRAWN:	J SANGRAM, E&Q
CHECKED:	K BHARDWAJ, E&Q
APPROVED:	P GARG, E&Q

SCALE : NTS ISSUE DT: 31/05/2021

DRAWING NO: TPCODL-MVD-0010 REV NO: Sheet: 2 of 2

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)

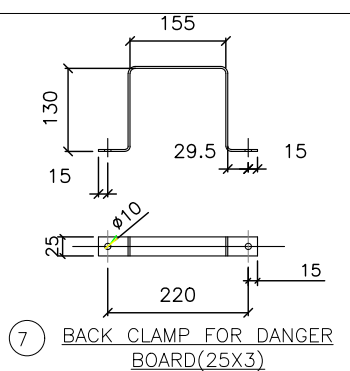
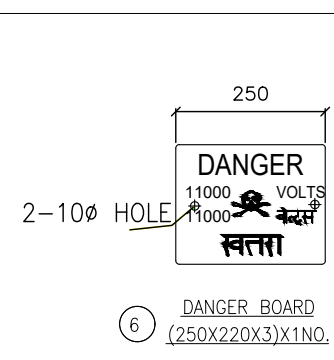


BOM OF GI ITEMS OF 11KV 13MTR INLINE DOUBLE POLE(FOR SPACE CONSTRAINT)

ITEM NO	DESCRIPTION (mm)	SECTION	MATERIALS	LENGTH (mm)	QTY (Nos)	WT (KG/MTR)	WT/ ITEM (KG)	TOTAL WT. (KG)
1	RSJ POLE/ WPB 160	150x150/160x152	JOIST	13000	2	34.6 / 30.44	449.8 / 395.72	899.6 / 791.44
2	DP TOP CHANNEL	100x50x6	CHANNEL	2300	2	9.5600	21.988	43.976
3	FISH PLATE	50x6	FLAT	280	6	2.3600	0.661	3.965
4	CROSS BRACING	75x40x4.8	CHANNEL	1660	5	7.1400	11.852	59.282
5	CROSS BRACING	50x50x6	ANGLE	3313	4	4.5000	14.909	59.634
6	DANGER BOARD	250x6	FLAT	250	2	9.4200	2.355	4.710
7	BACK CLAMP FOR DANGER BOARD	25x3	FLAT	510	2	0.5900	0.301	0.602
8	STAY CLAMP	50x8	FLAT	551	2	3.1400	1.730	3.460
9	PIPE EARTHING		PIPE	3000	2	0.0000	0.000	0.000
							TOTAL WT EXCEPT POLE	175.609

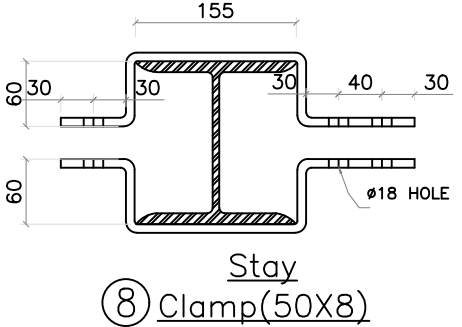
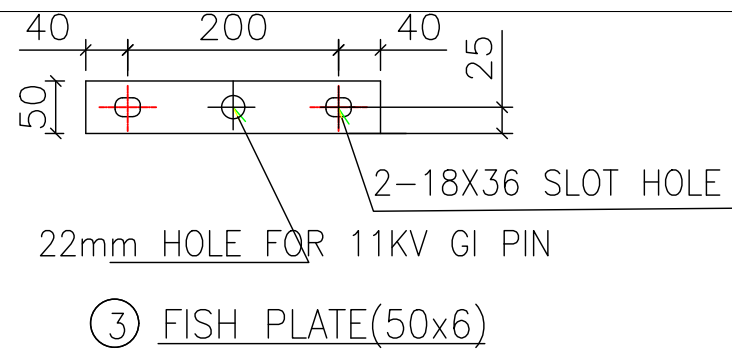
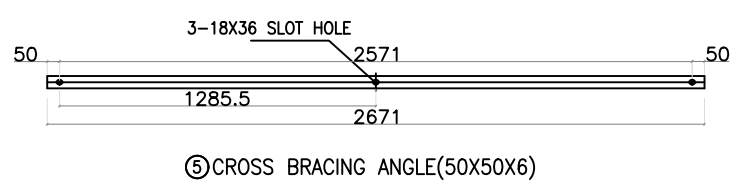
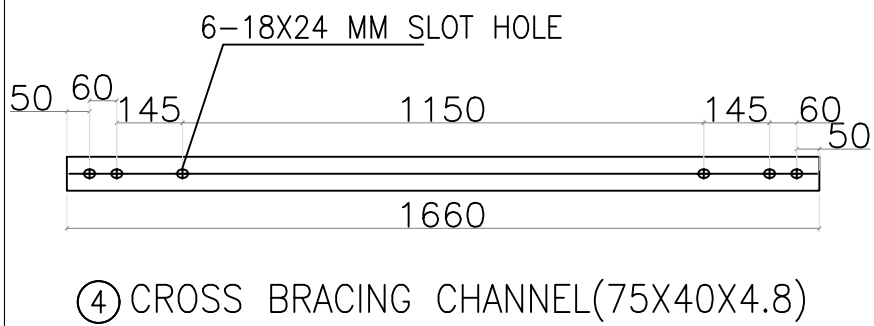
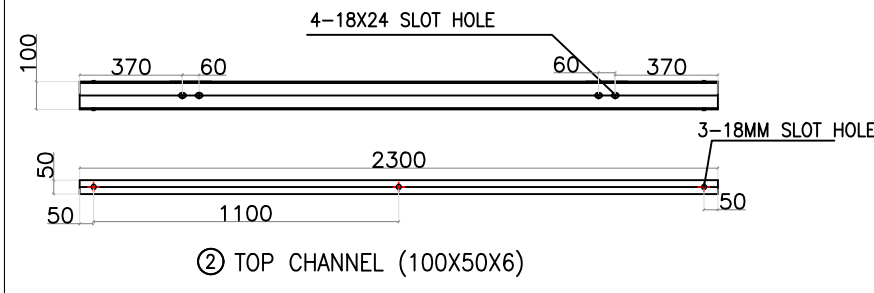
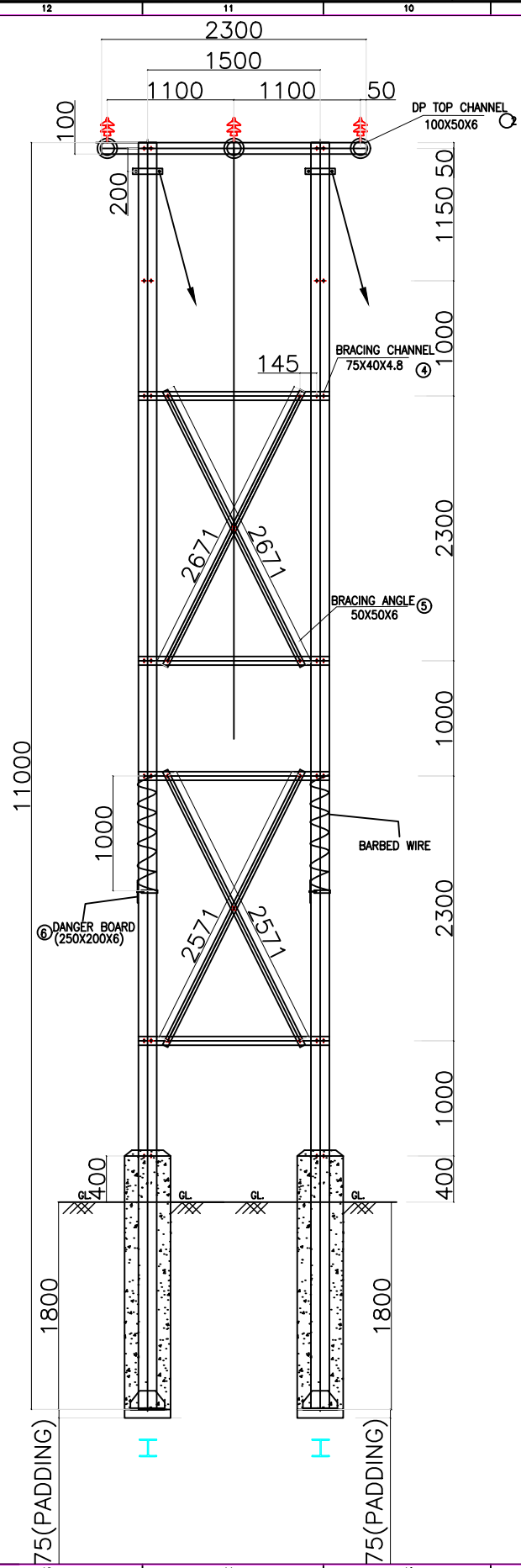
NUT & BOLTS REQUIRED

NUT & BOLTS	LENGTH (mm)	DP TOP CHANNEL	FISH PLATE	CROSS BRACING CHANNEL	CROSS BRACING ANGLE	DANGER BOARD	STAY CLAMP	EARTHING	TOTAL (No)	UNIT WT (Kg)	TOTAL WT. (Kg)
M16	50				10			2	12	0.134	1.608
M16	90						6		6	0.161	0.966
M16	200	4	3	16					23	0.331	7.613
M8	70				0	4			4	0.033	0.132
M16	FLAT WASHER								82	0.014	1.148
M16	SPRING WASHER								82	0.009	0.738
M8	FLAT WASHER								8	0.005	0.040
M8	SPRING WASHER								8	0.002	0.016
									TOTAL WEIGHT		12.261



TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED		TATA POWER CENTRAL ODISHA DISTRIBUTION LTD.	
TITLE:- 11KV LINE DP USING 13 MTR 150X150 RSJ/WPB 160(FOR SPECIAL CASE OF HEIGHT REQUIREMENT AND SPACE CONSTRAINT)		NAME	
		DESIGN: PHIROJ UTTARAY, E&Q	
		DRAWN: J SANGRAM, E&Q	
		CHECKED: K BHARDWAJ, E&Q	
APPROVED: P GARG, E&Q		DRAWING NO: TPCODL-MVD-0011 REV NO:	
SCALE : NTS	ISSUE DT: 31/05/2021		

1. All Dimensions are in MM & Weights in KG unless Specified 2. All items are GI (as per TS)

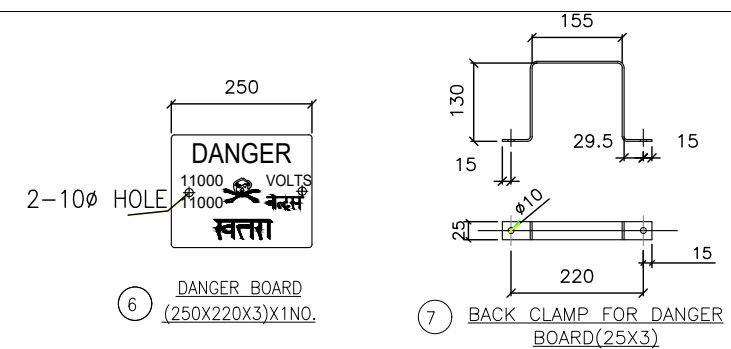


BOM OF GI ITEMS OF 11KV 11MTR INLINE DOUBLE POLE(FOR SPACE CONSTRAINT)

ITEM NO	DESCRIPTION (mm)	SECTION	MATERIALS	LENGTH (mm)	QTY (Nos)	WT (KG/MTR)	WT/ ITEM (KG)	TOTAL WT. (KG)
1	RSJ POLE/ WPB 160	150x150/160x152	JOIST	13000	2	34.6 / 30.44	449.8 / 395.72	899.6 / 791.44
2	DP TOP CHANNEL	100x50x6	CHANNEL	2300	2	9.5600	21.988	43.976
3	FISH PLATE	50x6	FLAT	280	6	2.3600	0.661	3.965
4	CROSS BRACING	75x40x4.8	CHANNEL	1660	4	7.1400	11.852	47.410
5	CROSS BRACING	50x50x6	ANGLE	2671	4	4.5000	12.020	48.078
6	DANGER BOARD	200x6	FLAT	250	2	9.4200	2.355	4.710
7	BACK CLAMP FOR DANGER BOARD	25x3	FLAT	510	2	0.5900	0.301	0.602
8	STAY CLAMP	50x8	FLAT	551	2	3.1400	1.730	3.460
9	PIPE EARTHING		PIPE	3000	2	0.0000	0.000	0.000
							TOTAL WT EXCEPT POLE	152.200

NUT & BOLTS REQUIRED

NUT & BOLTS	LENGTH (mm)	DP TOP CHANNEL	FISH PLATE	CROSS BRACING CHANNEL	CROSS BRACING ANGLE	DANGER BOARD	STAY CLAMP	EARTHING	TOTAL (No)	UNIT WT (Kg)	TOTAL WT. (Kg)
M16	50				10				12	0.134	1.608
M16	90						6		6	0.161	0.966
M16	200	4							23	0.331	7.613
M8	70		3	16					4	0.033	0.132
M16	FLAT WASHER								82	0.014	1.148
M16	SPRING WASHER								82	0.009	0.738
M8	FLAT WASHER								8	0.005	0.040
M8	SPRING WASHER								8	0.002	0.016
									TOTAL WEIGHT		12.261

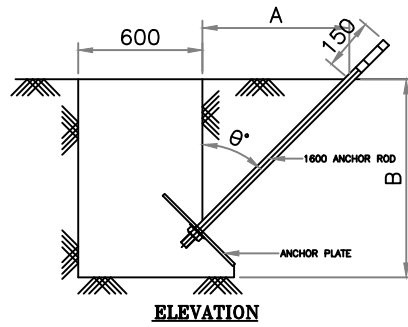
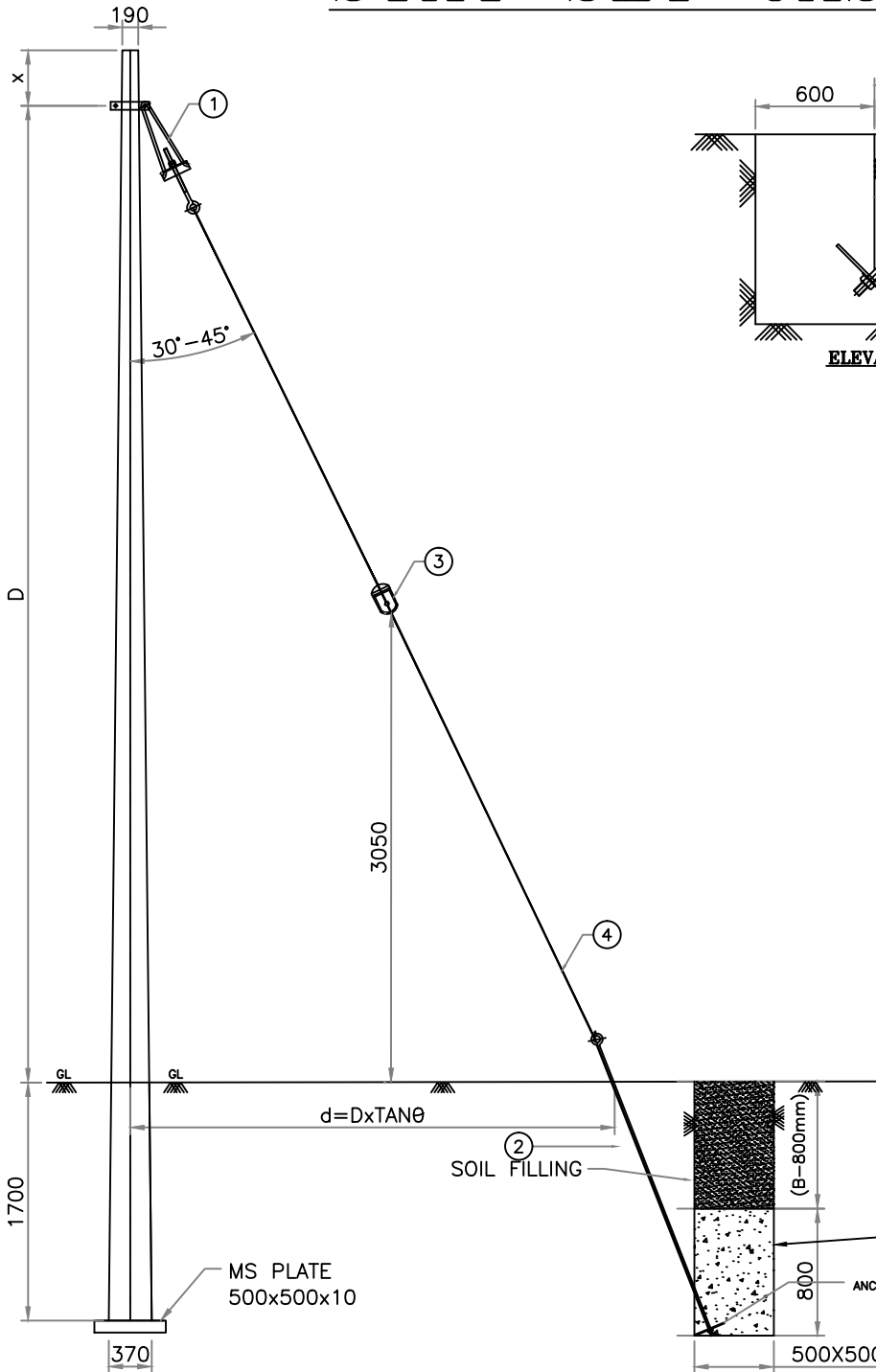


TPCODL
TP CENTRAL ODISHA DISTRIBUTION LIMITED

TATA POWER
CENTRAL ODISHA DISTRIBUTION LTD.

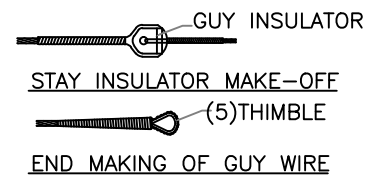
TITLE:- 11KV LINE DP USING 11 MTR 150X150 RSJ/WPB 160(FOR SPACE CONSTRAINT CASES)	NAME
DESIGN:-	PHIROJ UTTARAY, E&Q
DRAWN:-	J SANGRAM, E&Q
CHECKED:-	K BHARDWAJ, E&Q
APPROVED:-	P GARG, E&Q
SCALE : NTS	DRAWING NO: TPCODL-MVD-0012 REV NO:
ISSUE DT: 31/05/2021	

STAY SET CASTING

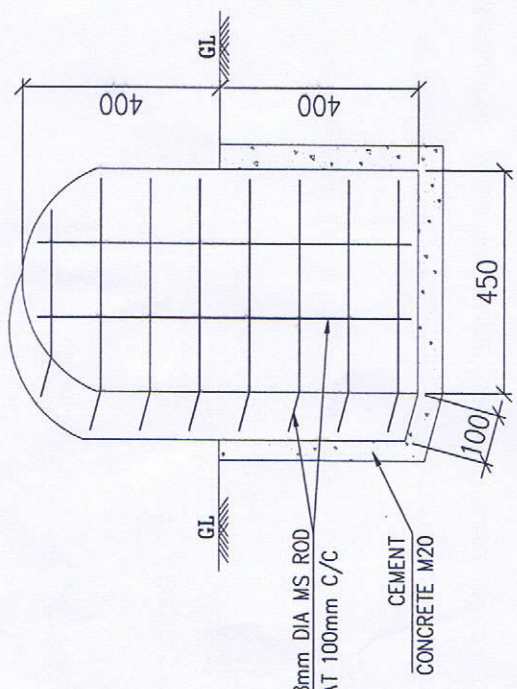


θ	30°	45°
A	750	1100
B	1500	1300

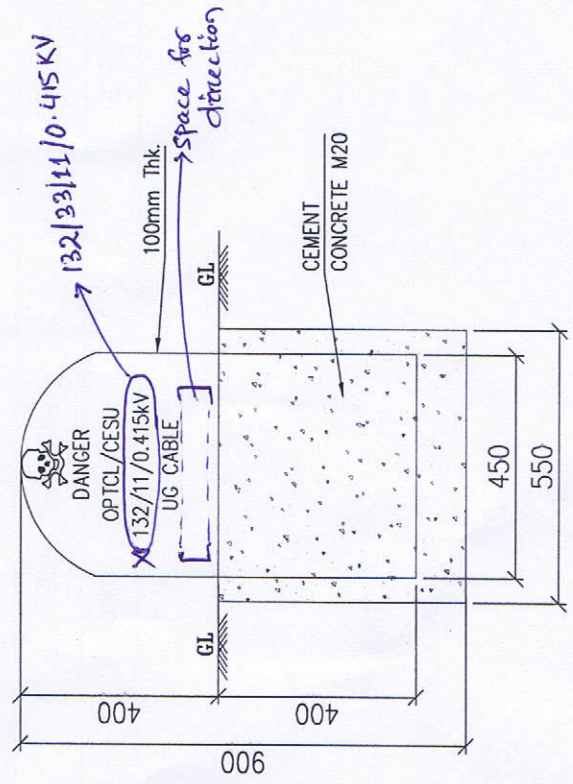
GUY ASSEMBLY (CONVENTIONAL ARRANGEMENT)



CONCRETING TO BE DONE
WHERE SOIL IS NOT FIRM

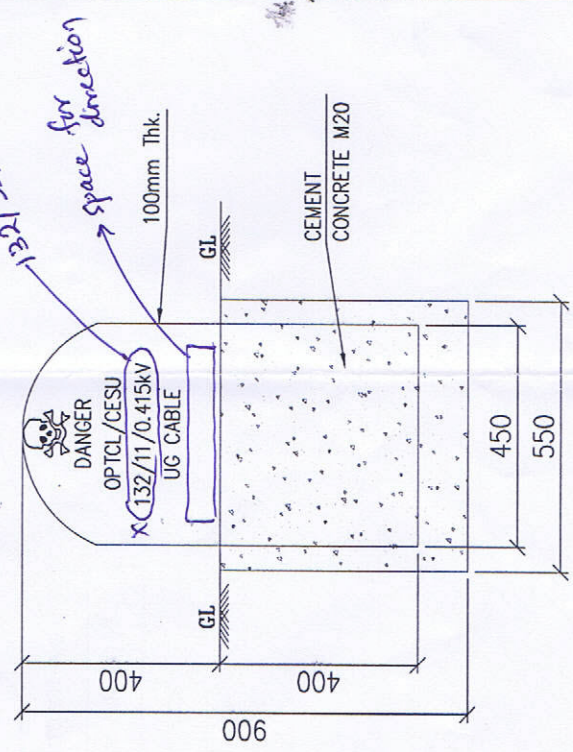


RCC DETAILS OF ROUTE MARKER



FRONT VIEW

(BLACK LETTER ON YELLOW BACKGROUND)



REAR SIDE

(BLACK LETTER ON YELLOW BACKGROUND)

LEGEND:-
 GL - GROUND LEVEL
 REINFORCEMENT IS DENOTED AS :
 8 @ 100 C/C
 SPACING OF BAR IN mm
 HYSD BARS CONFORMING TO IS:1786
 DIA OF BAR IN mm

REFERENCE DRAWING:-

1. GENERAL ARRANGEMENT DRAWING ROUTE MARKER -DRG No. OPTCL/SCRIPS/LINE/CRM/01.
2. GL CORRESPONDS TO GROUND LEVEL.
3. CONCRETE SHALL BE OF GRADE M20.
4. THE FOUNDATION SHALL BE PLACED ON COMPACTED EARTH.
5. MINOR ADJUSTMENTS MAY BE DONE AT SITE IN CONSULTATION WITH ENGINEER IN-CHARGE

NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. GL CORRESPONDS TO GROUND LEVEL.
3. CONCRETE SHALL BE OF GRADE M20.
4. THE FOUNDATION SHALL BE PLACED ON COMPACTED EARTH.
5. MINOR ADJUSTMENTS MAY BE DONE AT SITE IN CONSULTATION WITH ENGINEER IN-CHARGE

REV. No	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED
B	REVISED INLINE WITH PRDC COMMENTS DATED 17.07.17	HHD	GUN	TRP	DA
A	ISSUED FOR APPROVAL	HHD	GUN	TRP	DA

REVISIONS



L&T Construction
 Power Transmission & Distribution

CLIENT : ODISHA POWER TRANSMISSION CORPORATION LIMITED (OPTCL)
CONSULTANT : POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT. LTD. (PRDC)

PROJECT : UNDERGROUND CABLING SYSTEM IN FOUR MAIN LANES AND CONNECTING ROADS OF BHUBANESWAR CITY (SACHIVALAYA MARG, BIDYUT MARG, JANAPATH AND CUTTACK ROAD WITH CONNECTING ROADS RAJAPATH, GOPABANDHU MARG , PATEL MARG) UNDER ADVANCE SCRIPS ON EPC CONTRACT BASIS

SUPPLIER/CONTRACTOR :

JOB No. : 015187-C-SY		TITLE : DETAILS ROUTE MARKER		SCALE : 1:15
NAME : HHD	SIGN : HHD	DATE : 29.06.17	PROJECTION :	
DSGN : GDN	DRWN : GDN	TRP : TRP	REV. : A3 B	
CHKD : TRP	APPD : DA	DA : DA	SIZE : A3	
DRG. No. : 015187-C-SY-1037			SHEET : 01 OF 01	

<input type="checkbox"/> PRELIMINARY	<input type="checkbox"/> TENDER	<input type="checkbox"/> INFORMATION	<input checked="" type="checkbox"/> APPROVAL	<input type="checkbox"/> CONSTRUCTION
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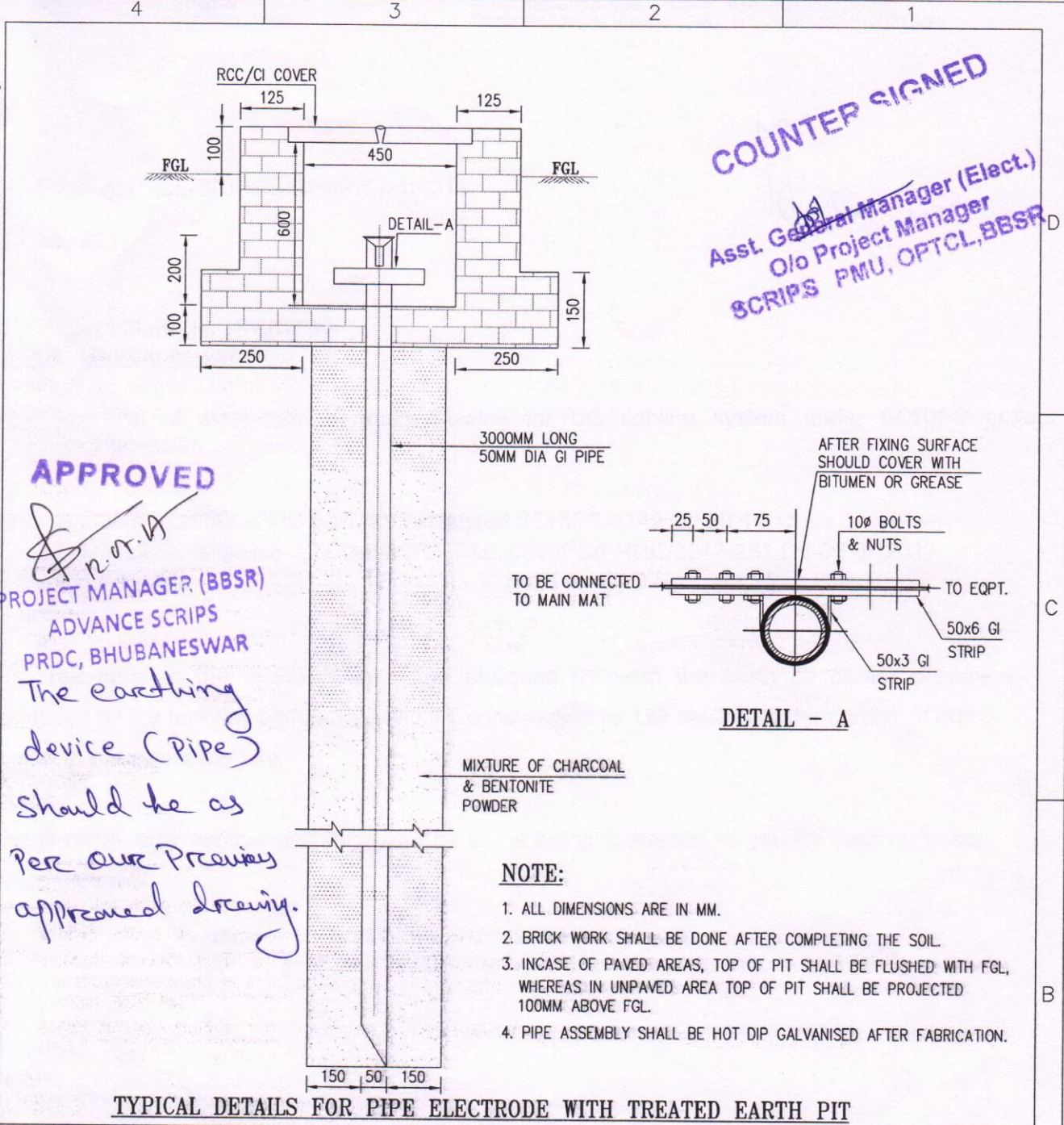
APPROVED

25.08.18

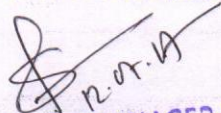
PROJECT MANAGER (BBSR)
 ADVANCE SCRIPS
 PRDC, BHUBANESWAR

\\intdotocenter\EAND\Electrical\Drawings\DEEPU\Operating Jobs\015187-SCRIPS_OPTCL\Working\Earth pit\015187-E-05-SY-GL-0003.dwg

This drawing is the property of L&T Construction, Power Transmission & Distribution and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use either in full or in part by such person or body without our prior permission in writing



COUNTER SIGNED
 Asst. General Manager (Elect.)
 O/o Project Manager
 SCRIPS PMU, OPTCL, BBSR

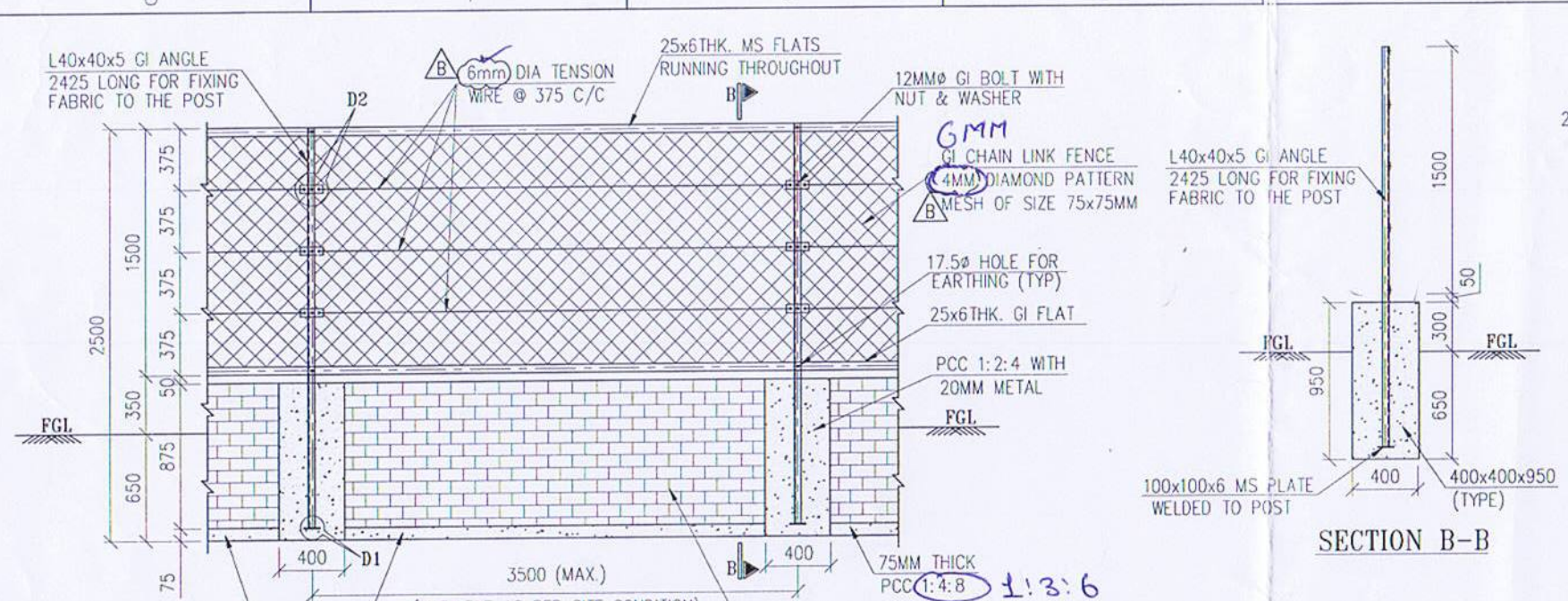
APPROVED

 PROJECT MANAGER (BBSR)
 ADVANCE SCRIPS
 PRDC, BHUBANESWAR
 The earthing
 device (Pipe)
 should be as
 per our previous
 approved drawing.

- NOTE:**
1. ALL DIMENSIONS ARE IN MM.
 2. BRICK WORK SHALL BE DONE AFTER COMPLETING THE SOIL.
 3. IN CASE OF PAVED AREAS, TOP OF PIT SHALL BE FLUSHED WITH FGL, WHEREAS IN UNPAVED AREA TOP OF PIT SHALL BE PROJECTED 100MM ABOVE FGL.
 4. PIPE ASSEMBLY SHALL BE HOT DIP GALVANISED AFTER FABRICATION.

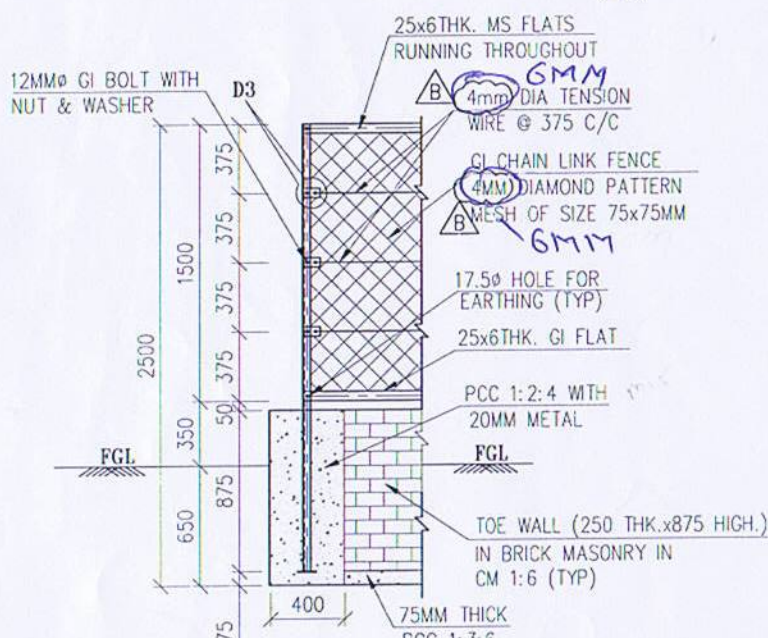
TYPICAL DETAILS FOR PIPE ELECTRODE WITH TREATED EARTH PIT

0	ISSUED FOR APPROVAL	V.M	SSDU	KKJK	KKJK
REV	DESCRIPTION	DSGN	DRWN	CHKD	APPD
CLIENT: ODISHA POWER TRANSMISSION CORPORATION LIMITED (OPTCL)		CONSULTANT: POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT. LTD. (PRDC)			
PROJECT: ENGINEERING, SUPPLY, ERECTION AND COMMISSIONING OF 33KV & 11KV UNDERGROUND CABLING SYSTEM IN FOUR MAIN LANES AND CONNECTING ROADS OF BHUBANESWAR CITY (SACHIVALAYA MARG, BIDYUT MARG, JANAPATH AND CUTTACK ROAD WITH CONNECTING ROADS RAJAPATH, GOPABANDHU MARG, PATEL MARG) UNDER ADVANCE SCRIPS ON EPC CONTRACT BASIS					
 L&T Construction Power Transmission & Distribution				NAME	DATE
TITLE: EARTH PIT DETAIL		SCALE	NTS	DSGN	VMM 04.07.17
DRAWING No. 0 1 5 1 8 7 - E - S Y - S Y - G L - 0 0 0 3		SHEET 01 OF 01		DRWN	SSDU 04.07.17
RELEASED FOR <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> TENDER <input type="checkbox"/> INFORMATION <input checked="" type="checkbox"/> APPROVAL <input type="checkbox"/> CONSTRUCTION		PROJECTION		CHKD	KKJK 05.07.17
4		3		APPD	KKJK 05.07.17
4		3		REV. 0	

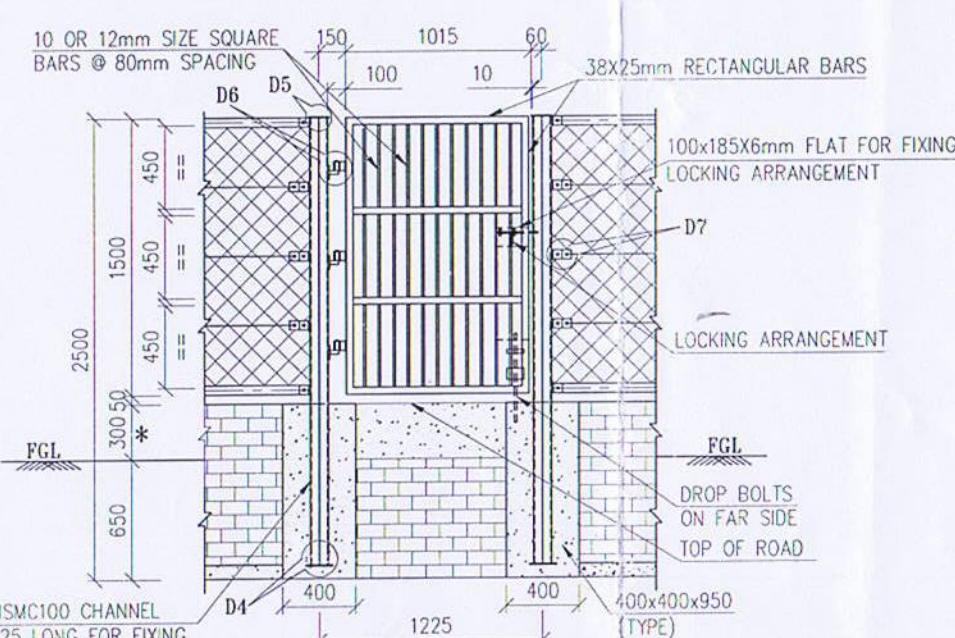
A:\JOB DIRECTORY\Operating Jobs\015187 - SCRIPS\DELIVERABLES\Fence\015187-C-SY-MS-1027-01-01-B.dwg
 This drawing is the property of L&T Construction, Power Transmission & Distribution and must not be passed on to any person or body not authorised as to receive it nor be copied or otherwise made use of there in full or in part by such person or body without the prior permission in writing of the author.



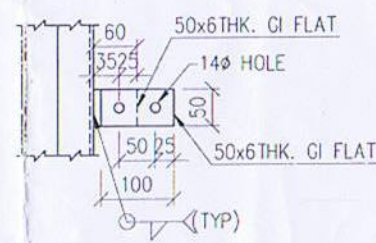
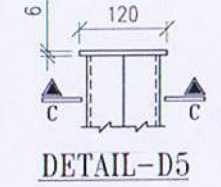
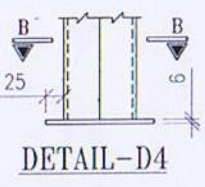
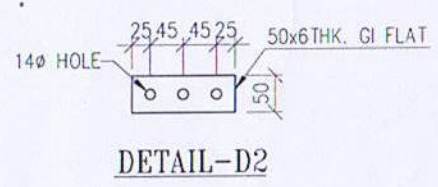
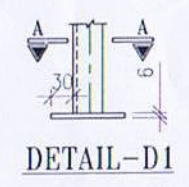
INTERMEDIATE POST (IP)



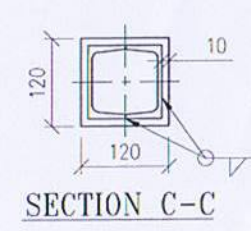
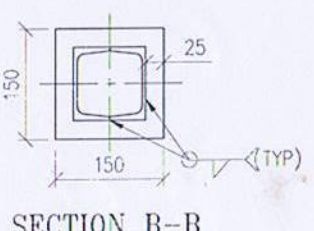
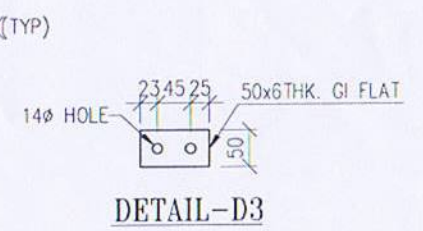
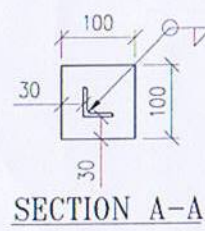
CORNER POST (CP)



DETAIL OF GATE POST (GP)



DETAIL-D7

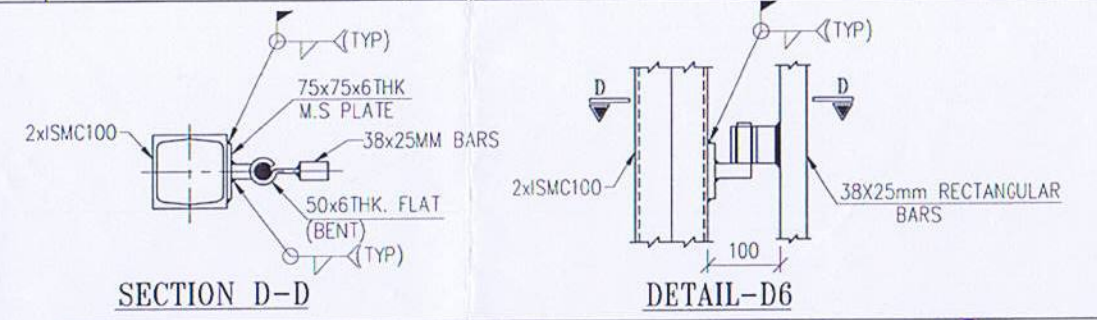


SECTION A-A

DETAIL-D3

SECTION B-B

SECTION C-C



SECTION D-D

DETAIL-D6

LEGENDS:-
 FGL - FINISHED GROUND LEVEL
 TYP. - TYPICAL

NOTES:-
 1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
 2. ALL ANGLES, CHAIN LINK MESH & FLAT SHALL BE GI.
 3. ALL STRUCTURAL STEEL SHALL BE OF MILD STEEL OF E250 GRADE A CONFORMING TO IS 2062.
 4. 2nos. COIL EARTHING TO BE PROVIDED IN FENCING.
 5. EXPOSED SURFACE OF CONCRETE & BRICK WORK SHALL BE PLASTERED 12mm THICK CEMENT PLASTER IN CM 1:6.

APPROVED
 PROJECT MANAGER
 ADVANCE SCRIPS
 PRDG, BHUBANESWAR

THIS DRAWING SHALL BE READ IN LINE WITH M/S OPTCL STANDARD DRAWING NO:
 1. OPTCL/SCRIPS/LINE/FL/01 (SHEET-1/5)

ITEM SHALL BE PAID UNDER PRICE SCHEDULE ITEM NO.

SCHEDULE VII(A) - LINE SUPPLY:	SL.No. D.3.7
	SL.No. D.3.8
	SL.No. D.5.5
	SL.No. D.8.3
SCHEDULE VII(B) - ERECTION LINE:	SL.No. D.3.6
	SL.No. D.3.8
	SL.No. D.5.5
	SL.No. D.8.3
FOR CIVIL WORKS	
SCHEDULE VII(B) - ERECTION LINE @ CIVIL WORKS:	SL.No. G.4
	SL.No. G.6
	SL.No. G.8
	SL.No. G.10

* - TOP LEVEL SHALL BE MATCH WITH TOP OF ROAD ACCORDINGLY DEPTH SHALL BE VARY.



B	THICKNESS OF CHAIN LINK FENCE & TENSION WIRE REVISED 6MM TO 4MM BASED ON AVAILABILITY OF MARKET.	TRP	RA	TRP	DA
A	ISSUED FOR APPROVAL	TRP	KMB	SV	DA
REV. No	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

REVISIONS




CLIENT: ODISHA POWER TRANSMISSION CORPORATION LIMITED (OPTCL) **CONSULTANT:**

PROJECT: UNDERGROUND CABLING SYSTEM IN FOUR MAIN LANES AND CONNECTING ROADS OF BHUBANESWAR CITY (SACHIVALAYA MARG, BIDYUT MARG, JANAPATH AND CUTTACK ROAD WITH CONNECTING ROADS RAJAPATH, GOPABANDHU MARG, PATEL MARG) UNDER ADVANCE SCRIPS ON EPC CONTRACT BASIS

SUPPLIER / CONTRACTOR:

JOB No.:	015187-C-SY	TITLE:	TYPICAL DETAILS OF FENCING & GATE FOR RMU, COMPACT SUBSTATION, CONSUMER MODULE, FEEDER PILLAR BOX	SCALE:	1:40
DRGN:	TRP	CHKD:	SV	PROJECTION:	First Angle
DRWN:	KMB	APPD:	DA	SIZE:	A3
CHKD:	SV			REV.:	B
APPD:	DA			DRG. No.:	015187-C-SY-MS-1027


CHECKED BY:	ARCHITECTURE	CIVIL & STRUCTURAL	PLUMBING & SANITARY	MECHANICAL	ELECTRICAL	INSTRUMENTATION
SIGN:	-	-	-	-	-	-
DATE:	-	-	-	-	-	-
RELEASED FOR:	<input type="checkbox"/> PRELIMINARY	<input type="checkbox"/> TENDER	<input type="checkbox"/> INFORMATION	<input checked="" type="checkbox"/> APPROVAL	<input type="checkbox"/> CONSTRUCTION	

 TP CODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Standard Technical Particulars for 33KV V-Cross Arm, Back Clamp & F Clamp(Pole Top Bracket) for 160x160 WPB / 150X150 RSJ		
Document No.			Eff. Date: 1.4.2021
Revision No.	ENG-HV-029		Page 1 of 7
Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

CONTENTS

1. SCOPE
2. APPLICABLE STANDARDS
3. CLIMATIC CONDITIONS OF THE INSTALLATION
4. GENERAL TECHNICAL REQUIREMENTS
5. GENERAL CONSTRUCTIONS
6. MARKING
7. TESTS
8. TYPE TEST CERTIFICATES
9. PRE-DISPATCH INSPECTION
10. INSPECTION AFTER RECEIPT AT STORES
11. GUARANTEE
12. PACKING
13. TENDER SAMPLE
14. QUALITY CONTROL
15. MINIMUM TESTING FACILITIES
16. MANUFACTURING ACTIVITIES
17. SPARES, ACCESSORIES AND TOOLS
18. DRAWINGS AND DOCUMENTS
19. GUARANTEED TECHNICAL PARTICULARS
20. SCHEDULE OF DEVIATIONS

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

 TP CODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Standard Technical Particulars for 33KV V-Cross Arm, Back Clamp & F Clamp(Pole Top Bracket)		
Document No.	ENG-HV-029	Eff. Date: 1.03.2021	
Revision No.	00	Page 2 of 7	
Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

1.0 SCOPE

The scope of this document is to give design & constructional features, inspection, supply and transportation guidelines for V Cross arm used in 33 KV lines

2.0 APPLICABLE STANDARDS

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with latest editions of the following standards/IEC and shall conform to the regulations of local statutory authorities.

- a) IS 2062:2011 - For Hot rolled medium and high tensile structural steel- specification
- b) IS 1852-1985 - For Rolling and cutting tolerances for hot rolled steel products
- c) IS 2629-1985 - For Recommended practice for hot dip galvanized of iron and steel
- d) IS 4759-1996 - For Hot dip zinc coatings on structural steel and other allied products- specification
- e) IS 808-1989 - Dimensions for Hot Rolled Steel Beam, Column, Channel and Angle Sections


3.0 CLIMATIC CONDITIONS OF THE INSTALLATION

- a) Maximum altitude above sea level 100m
- b) Max. Ambient Temperature: 50 deg. C
- c) Max. Daily average ambient temp: 35 deg. C
- d) Min. Ambient Temperature: 0 deg. C
- e) Maximum Relative Humidity: 95%
- f) Average No. of thunderstorm days per annum:70
- g) Average Annual Rainfall: 1500 mm
- h) Average No. of rainy days per annum: 120
- i) Earthquakes of an intensity in horizontal direction – equivalent to seismic acceleration of 0.3g.
- j) Earthquakes of an intensity in vertical direction – equivalent to seismic acceleration of 0.15g
- k) Wind velocity: 300/hr, 200 km/hr and 160km/hr

Environmentally, some of the regions, where the work will take place includes coastal regions, subject to high relative humidity, which can give rise to condensation. On shore winds will frequently be salt laden. On occasions the combination of salt and condensation may create pollution conditions for outdoor insulators. Some places are in heavily industrial polluted areas. Therefore, Outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty corrosive and humid coastal atmosphere. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1g.

4.0 GENERAL TECHNICAL REQUIREMENTS

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

 TP CODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Standard Technical Particulars for 33KV V-Cross Arm, Back Clamp & F Clamp(Pole Top Bracket)		
Document No.	ENG-HV-029	Eff. Date: 1.03.2021	
Revision No.	00	Page 3 of 7	
Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

5.0 GENERAL CONSTRUCTIONS

The material shall be-

- a) V Cross-arms shall be made out M S Channel 100 x 50 x 6 mm, along with dimensions 100 x 50 x 6 mm at Pole top bracket and 65 x 65 x 6 mm plate welded at both ends, for 33KV, suitable for WPB 13mt, to be used in 33KV. (for details refer attached drawing)
- b) The cross arm shall be hot dipped galvanized generally conforming to IS –2633/72.
- c) The V Cross-arm should not be welded/ jointed at any place except as specified.
- d) The clamps for the V Cross-arm shall be of G.I. & shall be hot dipped galvanized generally conforming to IS – 2633/72.
- e) The clamps shall be designed to fit for the specified rail.
- f) Hot dip galvanizing to be done after fabrication only.
- g) The design shall be suitable for the climatic condition stated above.
- h) The constructional details shall be as per the attached drawing.
- i) Dimensional tolerance shall be limited to 2% except tolerance on thickness until and unless otherwise specified.
- j) Zinc electroplated/painted material will not be accepted
- k) Approximate weight shall be 22kg

6.0 MARKING

The unit shall be appropriately marked as "**PROPERTY OF TPCODL, BHUBANESWAR**" and with the name of the vendor and year of manufacturing at suitable location.


7.0 TESTS

All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the purchaser/his authorized representative. All components shall also be type tested as per the relevant standards.

Tests	IS to be referred
Visual test	As a routine test
Dimensional tests	As per the drawing
Tensile strength	IS 2062
Bend test	IS 2062
Impact test	IS 2062
Hot dip galvanizing	IS 4759 : 1996

8.0 TYPE TEST CERTIFICATES

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

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The bidder shall furnish the type test certificates of the V Cross Arm for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at NABL accredited labs as per the relevant standards. Type tests should have been conducted during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TPCODL.

9.0 PRE-DISPATCH INSPECTION

Equipment shall be subjected to inspection by a duly authorized representative of TPCODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPCODL's representatives at all times when the work is in progress. Inspection by TPCODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPCODL.

Following documents shall be sent along with material.

- a) Test reports
- b) MDCC issued by TPCODL.
- c) Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable)


10.0 INSPECTION AFTER RECEIPT AT STORES

The material received at TPCODL, Bhubaneswar, Odisha store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Engineering and contracts department.

11.0 GUARANTEE

Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Company up to a period of at least 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract whichever is later. In the event any defect is found by the Company up to a period of 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract, whichever is earlier, supplier shall be liable to undertake to replace/rectify such defects at his own costs.

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12.0 PACKING

Bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.

13.0 TENDER SAMPLE

Not required.

14.0 QUALITY CONTROL

The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TPCODL's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections.

15.0 MINIMUM TESTING FACILITIES

Bidder shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards

16.0 MANUFACTURING ACTIVITIES

The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.

17.0 SPARES, ACCESSORIES AND TOOLS


Bidder shall provide a list of recommended spares with quantity and unit prices for 3 years of operation after commissioning. The bidder shall provide a list of complete set of accessories and tools required for erection & maintenance along with the installation procedure.

18.0 DRAWINGS AND DOCUMENTS

Following drawings & documents shall be prepared based on Purchaser's specifications and statutory requirements with complete BOM and shall be submitted with the bid:

Sl. No.	Description	For Approval	For Review	Final Submission
1	Technical Parameters	✓		✓
2	GA Drawing	✓		✓
3	Installation Instruction			✓
4	Manuals, Catalogues & Drawings		✓	✓

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

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Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

5	Dimension drawing		✓	✓
6	QA & QC Plan	✓	✓	✓
7	Routine, Acceptance & Type Test Certificates	✓	✓	✓

- a) General description of the equipment and all components including brochures
- b) General arrangement drawings
- c) Type Test Certificates.
- d) Experience List
- e) Manufacturing schedule and test schedule.

After the contract, four (4) copies of the drawings, drawn to scale, describing the equipment in detail shall be forwarded for approval and shall subsequently provide four (4) complete sets of final drawings, one of which shall be auto positive suitable for reproduction, before the dispatch of the equipment. Soft copy (Compact Disk CD) of all the drawing, test certificates shall be submitted after the final approval of the same to the purchaser.


Following Drawings/Documents shall be submitted after the award of the contract:
Drawings/documents to be submitted after the award of the contract:

19.0 GUARANTEED TECHNICAL PARTICULARS

Sl.no.	Particulars	Bidder's Offer
1	Type of cross arm	
2	Grade of steel	
3	Steel standard	
4	Fabrication standard	
5	Dimensions	
6	Steel section utilized	
7	Steel tensile strength	
8	Working load	
9	Details of Galvanizing methods utilized and Standard/ Specification	
10	Weight of Cross Arm	
11	Whether Drawing has been submitted with the Bid	

20.0 SCHEDULE OF DEVIATIONS

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

 TPCODL <small>TP CENTRAL ODISHA DISTRIBUTION LIMITED</small>	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
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All deviations from this specification shall be set out by the bidder, clause by clause in the below mentioned tabular format. Unless specifically mentioned in this schedule, the tender shall be deemed to confirm TPDDL's Specification.

Sl. No.	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.

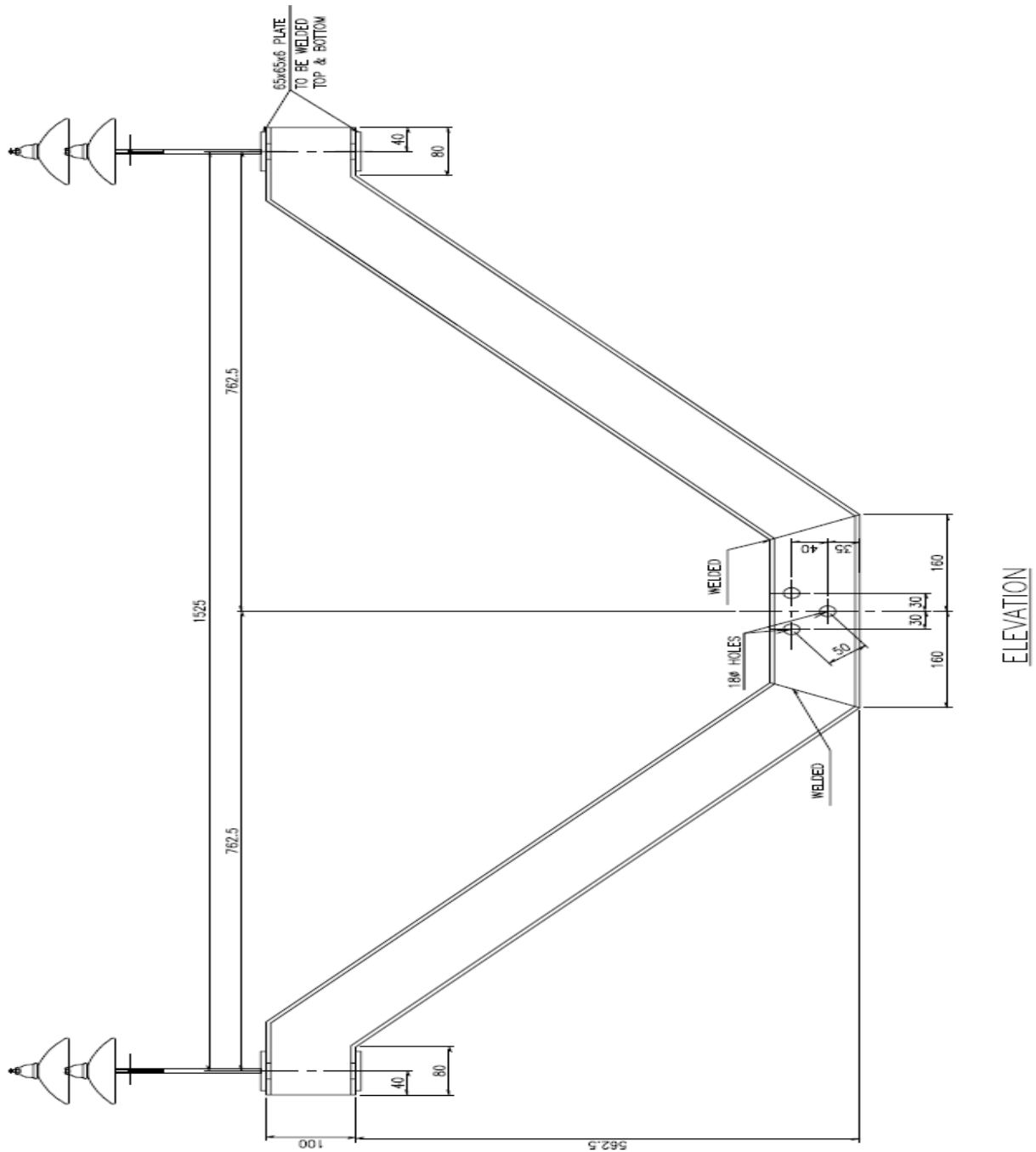
Seal of the Company
Signature
Designation

Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg


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ANNEXURE-1

DRAWING OF V CROSS ARM WITH DETAILED DIMENSIONS



Prepared By Suchismita Nayak	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg
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TPCØDL <small>TP CENTRAL ODISHA DISTRIBUTION LIMITED</small>	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of V Cross Arm for 11KV line WPB,RSJ & PSC pole		
Document No.	ENG-HV-010	Eff. Date: 1.03.2021	
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Prepared By Priyanka Dash	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

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12. PACKING
13. TENDER SAMPLE
14. QUALITY CONTROL
15. MINIMUM TESTING FACILITIES
16. MANUFACTURING ACTIVITIES
17. SPARES, ACCESSORIES AND TOOLS
18. DRAWINGS
19. SCHEDULE OF DEVIATIONS

Initiator		HOG (Plant Engineering)	
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TPCØDL <small>TP CENTRAL ODISHA DISTRIBUTION LIMITED</small>	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
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Prepared By Priyanka Dash	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

1.0 SCOPE

The scope of this document is to give design & constructional features, inspection, supply and transportation guidelines for V Cross arm used in 11 KV lines.

2.0 APPLICABLE STANDARDS

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with latest editions of the following standards/IEC and shall conform to the regulations of local statutory authorities.

- a) IS 2062:2011 - For Hot rolled medium and high tensile structural steel- specification
- b) IS 1852-1985 - For Rolling and cutting tolerances for hot rolled steel products
- c) IS 2629-1985 - For Recommended practice for hot dip galvanized of iron and steel
- d) IS 4759-1996 - For Hot dip zinc coatings on structural steel and other allied products- specification
- e) IS 808-1989 - Dimensions for Hot Rolled Steel Beam, Column, Channel and Angle Sections

3.0 CLIMATIC CONDITIONS OF THE INSTALLATION:

The service conditions shall be as follows:

1. Maximum altitude above sea level 1,000m
2. Maximum ambient air temperature 50°C
3. Maximum daily average ambient air temperature 35°C
4. Minimum ambient air temperature 0°C
5. Maximum relative humidity 95%
6. Average number of thunderstorm days per annum (isokeraunic level) 70
7. Average number of rainy days per annum 120
8. Average annual rainfall 150cm
9. Earthquakes of an intensity in horizontal direction - equivalent to seismic acceleration of 0.3g
10. Earthquakes of an intensity in vertical direction - equivalent to seismic acceleration of 0.15g (g being acceleration due to gravity)
11. Wind velocity: 300 km/hr, 200 km/hr and 160 km/hr.

Environmentally, some of the regions, where the work will take place includes coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor insulators. Some places are in heavily industrial polluted areas.

Therefore, Outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive and humid coastal atmosphere

The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1 g.

4.0 GENERAL CONSTRUCTION:

The material shall be-

- a) MS channel shall be ISMC 75*40*4.8 (7.14Kg/Mtr)
- b) Hot dip galvanizing to be done after fabrication only.
- c) The design shall be suitable for the climatic condition stated above.
- d) The constructional details shall be as per the attached drawing.
- e) Dimensional tolerance shall be limited to 2% except tolerance on thickness until and unless otherwise specified.
- f) Zinc electroplated/painted material will not be accepted

Initiator		HOG (Plant Engineering)	
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g) Approximate weight shall be 10.64 kg

5.0 MARKING:

The unit shall be appropriately marked as "**PROPERTY OF TPCODL, BHUBANESWAR**" and with the name of the vendor and year of manufacturing at suitable location.

7.0 TESTS

All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC.

All routine/acceptance tests shall be witnessed by the purchaser/his authorized representative. All components shall also be type tested as per the relevant standards.

Tests	IS to be referred
Visual test	As a routine test
Dimensional tests	As per the drawing
Tensile strength	IS 2062
Bend test	IS 2062
Impact test	IS 2062
Hot dip galvanizing	IS 4759 : 1996

8.0 TYPE TEST CERTIFICATE

The bidder shall furnish the type test certificates of the V cross Arm for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at NABL accredited labs as per the relevant standards. Type tests should have been conducted during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TPCODL.

9.0 PRE DISPATCH INSPECTION

Equipment shall be subjected to inspection by a duly authorized representative of TPCODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPCODL's representatives at all times when the work is in progress. Inspection by TPCODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPCODL.

Following documents shall be sent along with material.

- a) Test reports
- b) MDCC issued by TPCODL.
- c) Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable)

Initiator		HOG (Plant Engineering)	
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10.0 INSPECTION AFTER RECEIPT AT STORES

The material received at TPCODL, Bhubaneswar, Odisha store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Engineering and contracts department.

11.0 GUARANTEE

Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Company up to a period of at least 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract whichever is later. In the event any defect is found by the Company up to a period of 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract, whichever is earlier, supplier shall be liable to undertake to replace/rectify such defects at his own costs.

12.0 PACKING

Bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.

13.0 TENDER SAMPLE

Not required.

14.0 QUALITY CONTROL

The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TPCODL's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections.

15.0 MINIMUM TESTING FACILITIES

Bidder shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards

16.0 MANUFACTURING ACTIVITIES

The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.

17.0 SPARES, ACCESSORIES AND TOOLS

Bidder shall provide a list of recommended spares with quantity and unit prices for 3 years of operation after commissioning. The bidder shall provide a list of complete set of accessories and tools required for erection & maintenance along with the installation procedure.

Initiator		HOG (Plant Engineering)	
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18.0 DRAWINGS

Following drawings & documents shall be prepared based on Purchaser's specifications and statutory requirements with complete BOM and shall be submitted with the bid:

- a) General description of the equipment and all components including brochures
- b) General arrangement drawings
- c) Type Test Certificates.
- d) Experience List
- e) Manufacturing schedule and test schedule.

After the contract, four (4) copies of the drawings, drawn to scale, describing the equipment in detail shall be forwarded for approval and shall subsequently provide four (4) complete sets of final drawings, one of which shall be auto positive suitable for reproduction, before the dispatch of the equipment. Soft copy (Compact Disk CD) of all the drawing, test certificates shall be submitted after the final approval of the same to the purchaser.

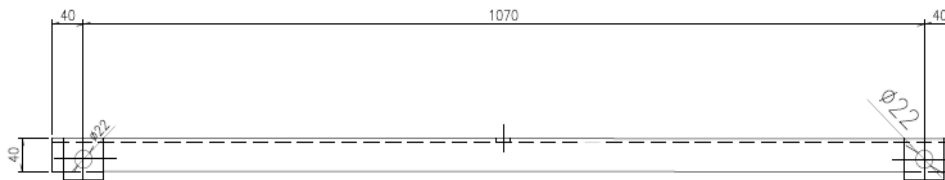
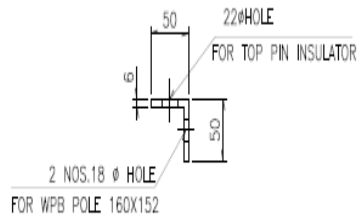
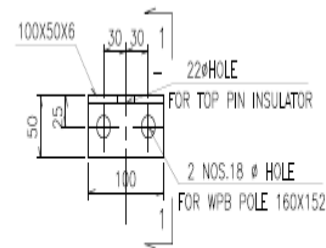
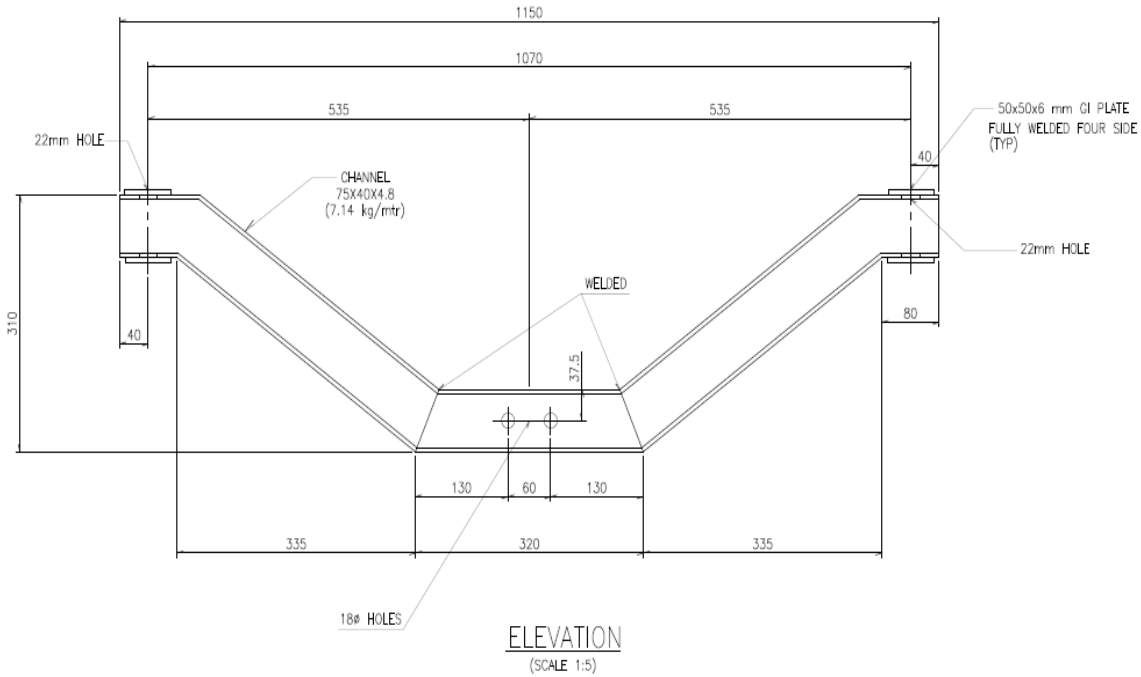
Following Drawings/Documents shall be submitted after the award of the contract:
 Drawings/documents to be submitted after the award of the contract:

S.No	Description	For Approval	For Review Information	Final Submission
1	Technical Parameters	√		√
2	General Arrangement drawings	√		√
3	Manual/Catalogues/drawings		√	
4	Installation Instructions (if any)		√	√
5	QA &QC Plan	√	√	√
6	Routine, Acceptance & Type Test Certificates	√	√	√

All the documents & drawings shall be in English language.

Initiator		HOG (Plant Engineering)	
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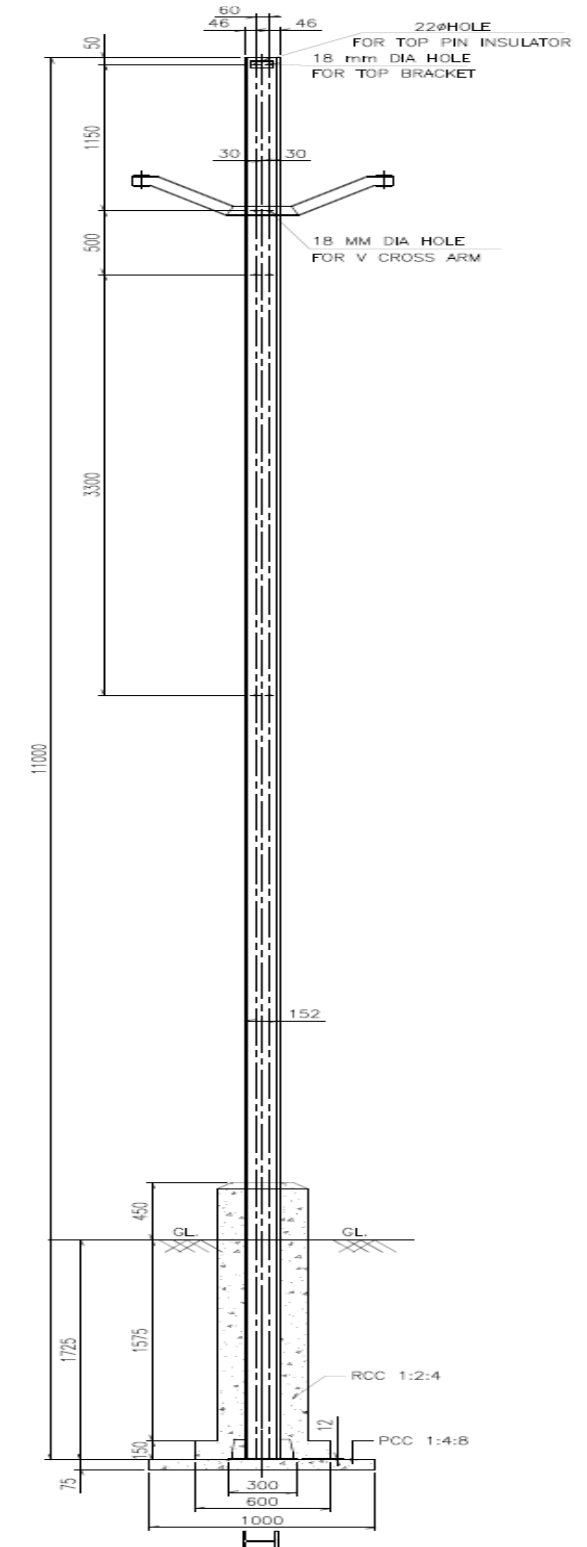
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Prepared By Priyanka Dash	Reviewed By Niranjana Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg



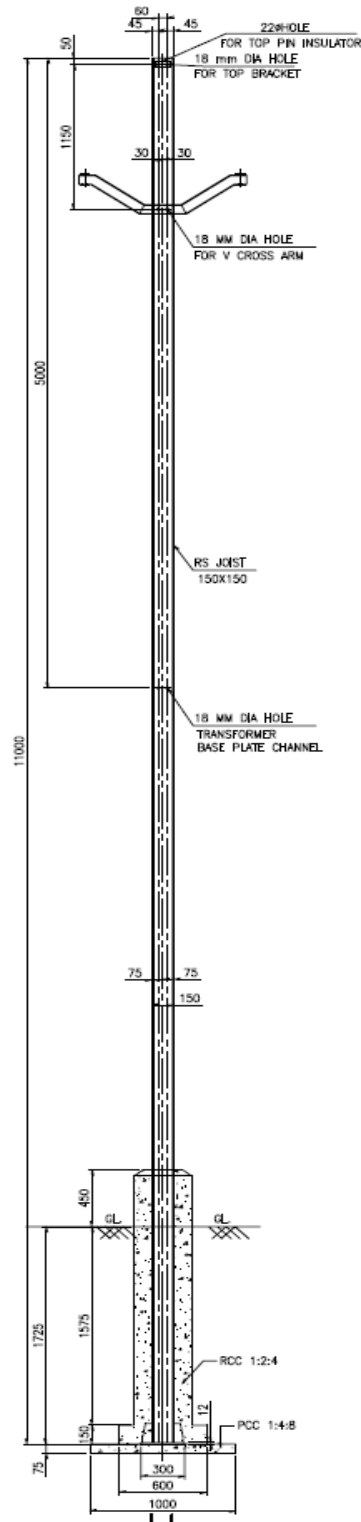
11KV V-CROSS ARM(75x40x4.8)
(SCALE 1:5)

Initiator		HOG (Plant Engineering)	
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TPC_{ODL} TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of Specification of V Cross Arm for 11KV line WPB,RSJ,PSC		
Document No.	ENG-HV-010	Eff. Date: 1.03.2021	
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Prepared By Priyanka Dash	Reviewed By Niranjana Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg



11KV LINE WITH WPB 160X152
SINGLE POLE STRUCTURE

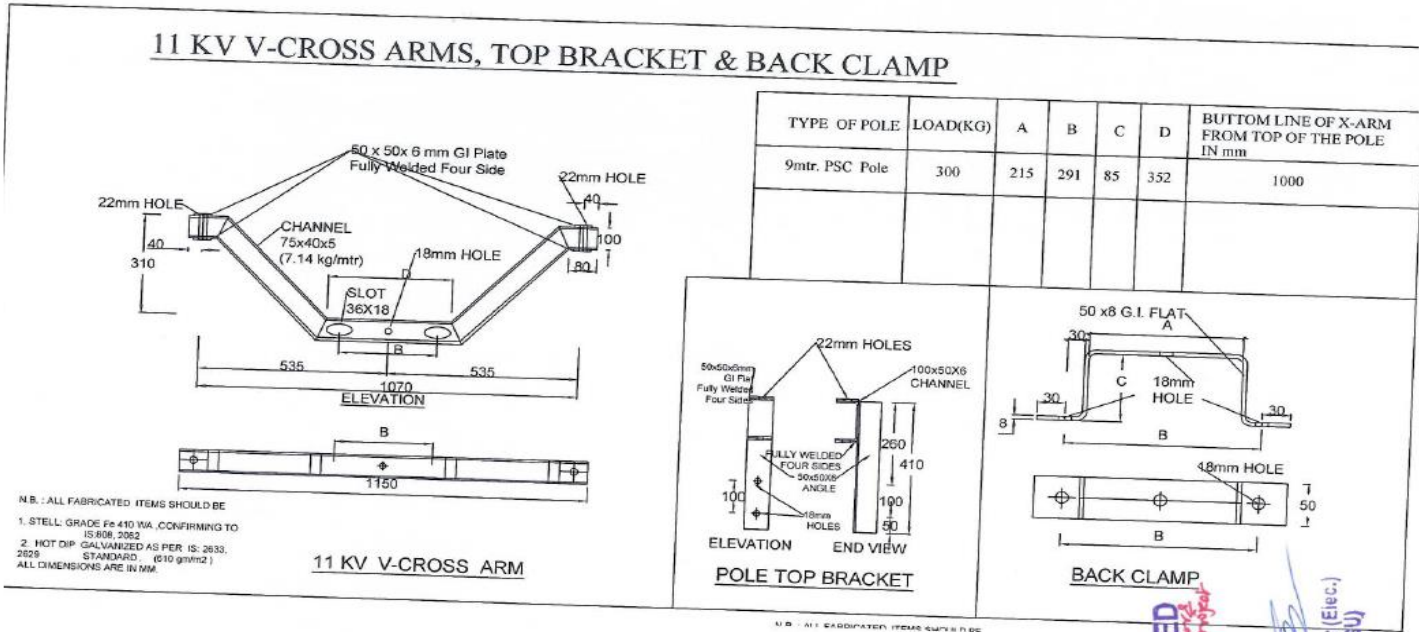


11KV LINE WITH RS JOIST 150X150
SINGLE POLE STRUCTURE

Initiator		HOG (Plant Engineering)	
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TPCØDL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of Specification of V Cross Arm for 11KV line WPB,RSJ,PSC		
Document No.	ENG-HV-010	Eff. Date: 1.03.2021	
Revision No.	00	Page 8 of 8	
Prepared By	Reviewed By	Approved By	Issued By
Priyanka Dash	Niranjan Khuntia	Khajan C. Bhardwaj	Pourush Garg

11KV V Cross Arm to be used in 9Mtr PSC Pole 300Kg



19. SCHEDULE OF DEVIATIONS

SCHEDULE OF DEVIATIONS

(TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

S.No	Clause No.	Details of deviation with justifications

Initiator		HOG (Plant Engineering)	
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TPC_{ODL} <small>TP CENTRAL ODISHA DISTRIBUTION LIMITED</small>	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
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Document Title	Specification of Specification of V Cross Arm for 11KV line WPB,RSJ,PSC		
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Revision No.	00	Page 9 of 8	
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We confirm that there are no deviations apart from those detailed above.

Seal of the Company:

Signature
Designation

Initiator		HOG (Plant Engineering)	
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