

## ANNEXURE-II

**BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES****NAME OF PROJECT :** 400/220KV SWITCHYARD- Rayalseema TPP Stage-IV

S. No	Description	Unit	Qty.	Rate	Amount
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of 600 mm measured from the top of FGL for bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-4-344-509-013-Sheet 26 & 27 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod for equipments. Risers shall be raised from the earthmat (at 600mm depth) to 150 mm above FGL to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL. )	MT	165		
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of <b>300</b> mm from top of FGL including excavation & backfilling as per Drg No. TB-4-344-509-013-Sheet 20. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL.)	Nos.	64		
3	Installing of 40 mm Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-4-344-509-013-Sheet 15 including following works: - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (Only GI Pipe, its cap, GI flat, Nuts, Bolts & Washers and test link will be supplies by BHEL. Other items like CI frame, CI Cover, charcoal, salt etc shall be supplied by contractor)	Nos.	6		
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-4-344-509-013-Sheet 17 including following works: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers with provision of Cast Iron Covers - any other work necessary to complete the work (Only 40 Diameter MS rod, test link, flats, nuts and washers will be supplied by BHEL. All other items like CI frame, CI cover, etc shall be supplied by contractor)	Nos.	22		
5	Installing of 40 mm diameter Rod Electrode without test pit as per Drg. No. TB-4-344-509-013-Sheet 16 including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL.)	Nos.	40		
<b>Total Amount (Rs.)</b>					