

BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES**Package A subsection A.1****Substation: 400/220kV Switchyard Extension for Bellary phase-III**

S. No	Description	Unit	Quantity	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 (either top of gravel or top of land as the case may be) 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-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level 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	70		
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB 4 333 509 004, Sh. no.-17 Rev 01. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL)	Nos.	100		
3	Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-STD-316-Pipe Electrode Rev 00 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 (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL.)	Nos.	6		
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL)	Nos.	2		
5	Installing of 40 mm diameter Rod Electrode without test pit 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.	47		
Total Amount (Rs.)					