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प्लाज्मा अनुसंधान संस्थान
INSTITUTE FOR PLASMA RESEARCH
परमाणु ऊर्जा विभाग, भारत सरकार का एक सहायता प्राप्त
संस्थान
An Aided Institute of Department of Atomic Energy,
Government of India



इन्दिरा पुल के पास, भट, गांधीनगर - 382 428 भारत
दूरभाष: (079) 2396 2020/2021/2028
फैक्स: 91-079-23962277
वेब: www.ipr.res.in

NEAR INDIRA BRIDGE, BHAT
DIST. GANDHINAGAR - 382 428 (INDIA)
Phone: (079) 2396 2020/2021/2028
Fax : 91-079-23962277
Web : www.ipr.res.in

ENQUIRY

ENQUIRY NO : IPR/EQL/18-19/066
Date : 04-06-2018

Due on : 28-06-2018 by 1:00 PM IST

Please send your offer in sealed envelope specifying Enquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to localpurchase@ipr.res.in

Please ensure your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following documents properly before quoting which are available on the IPR web portal i.e., http://www.ipr.res.in/documents/tender_terms.html / attached herewith.

- 1) Instructions to the bidders & Terms and conditions (refer Form No: IPR-LP-01.V4)
- 2) Bidding format

GST for Goods and Services (IGST/CGST/SGST TAX BENEFITS): Please refer clause no: 8 of Form No: IPR-LP-01.V4

QUOTATION SHOULD BE ADDRESSED TO PURCHASE OFFICER ONLY

Sr No	Description	Quantity
1	Supply, installation, commissioning of 5 numbers of Earthing Pits and interconnection of Earthing Pits to create a Grid.	5.0 Nos.

Note: Earthing pit grid
Encl: As per attachment.

Sd/-

Mr. D. Ramesh
Purchase Officer-II

Information to Vendors: We are working towards a single platform for our future requirement. Hence, please refer IPR website i.e., <http://www.ipr.res.in/documents/tenderseng.html> for our future requirement.

Supply, installation, commissioning and interconnection of Earth Pits

1. **Scope of Work:** The scope of work shall be carrying out necessary excavation of earth Pit with proper size, providing and fixing of earth electrode with GI pipe and funnel, GI flat, GI nuts and bolts, providing and filling of soil enhancement material, construction of earth pit chambers, providing earth pit covers, painting of earth pit covers, measurement of earth pit resistance. The scheme consists of Earth Pits, Grid connected with each other through 50 mm*6mm GI flats.

Purpose: the purpose for the specification is to provide reliable electrical Earthing to 415VAC transformers and Panels.

2. **Applicable standards:** the below mentioned standards may be referred to.
1. IS 3043: code of practice for Earthing.
 2. IS 1239: Standards for Steel tube.
 3. IS: 2629 (latest): Recommended practice for hot dip galvanized of Iron Earthing Strips.
 4. IS: 2633: Methods of testing weight, thickness & uniformity of coating on hot dip galvanized articles
 5. IS: 5358: Specification for hot dip galvanized coating on fastness
 6. IS: 4759 : Specification for hot dip Zinc coating on structural and other allied products
 7. IS: 209: The zinc required for galvanizing
 8. Indian Electricity rule 1956.

3. **General requirements:**

Quantity: 5 **Number** of Earthing Pits to be installed, near utility building site (Location of the installation job will be as per Drawing provided). The distance between the consecutive earth electrodes shall be between 4 meters to 6 meters. The Job includes:

Sr.no	Work	Description
1	Excavation of Earth PITS	1. Excavation shall be carried out by means of digging or whatever practical. After excavation the broken lumps and stones, are to be removed from the Earth Pit to a nearby designated place.
2	Providing and fixing of earth electrode	<ol style="list-style-type: none"> 1. Providing GI Earth Electrode of 65mm nominal bore diameters, heavy gauge (wall thickness not less than 3mm) NB Class B, Hot dipped GI pipe of 3 meters length. Bottom portion of the GI Earth Electrode is to be made sharp (or cut tapered) for easy penetration into the soil. The pipe shall be of one piece. Staggered drills holes, at intervals of 10-15cm shall be made in the Pipe electrode. 2. Funnel with a mesh shall be provided on the top portion of the earth electrode for watering purpose. 3. A GI Earthing strip of 300mm (length)*6 mm (thickness)* 50mm (width) with Tapped holes shall be welded to the top portion of GI earth electrode.
3.	Providing and filling of earth enhancement material	<ol style="list-style-type: none"> 1. Providing and filling up the earth pits with earth enhancement materials after placing the earth electrode in the excavated Earth Pit. 2. The earth enhancement material shall be watered and rammed as tight as possible to carry out proper bonding of the electrode with adjacent soil. The earth electrode is to be kept at the centre of the earth pit and arranged to keep it vertical in the Pit. 3. Earth Enhancement material shall be filled not less than 300mm in diameter around the electrode. 4. The earth enhancement material shall be carbon based and of low resistance, low-corrosive nature (charcoal, salt etc).

4.	Construction of Earth Pit chamber, Providing earth pit covers	<ol style="list-style-type: none"> 1. The job includes providing Earth Pit chambers of size not less than 400mm*400mm*400mm (inside dimension) with wall thickness not less than 50mm and smooth plaster finish. 2. PVC sleeve of appropriate size shall be provided in the walls to take out Earthing connection 3. The job includes providing not less than 8mm thick Cast iron / Mild Steel plate cover on top portion of the Earth Pit chamber with suitable handle for the lifting arrangement, painted in Yellow colour. A base frame of suitable dimensions shall be fixed to the top portion of the earth Pit chamber to accommodate Earth Pit cover. (Cover according to Grade B-125/MD) 4. Complete arrangement shall be at ground level, inside portion of the Pit shall be cleaned properly
5.	Measurement of Earthing Pit resistance	<ol style="list-style-type: none"> 1. The job includes measurement of resistance of the new Earthing Pit. 2. If the individual earth pit resistance is not within limits (as per IS 3043), then soil enhancement material shall be added or a new earth pit is to be provided
6.	Construction of earth Pit Mesh by connecting all the constructed Pits	<ol style="list-style-type: none"> 1. The constructed earth Pits are to be interconnected using 50mm*6mm GI strip (Provided by IPR) to make an Earthing strip loop/ Grid. 2. The 50mm*6mm GI strip will be provided by IPR in form of long strip, cutting them making them good for fixing will be in vendor's scope. 3. Joints and taping in the main earth loop shall be made in such a way that reliable and good electrical connection are permanently ensured.

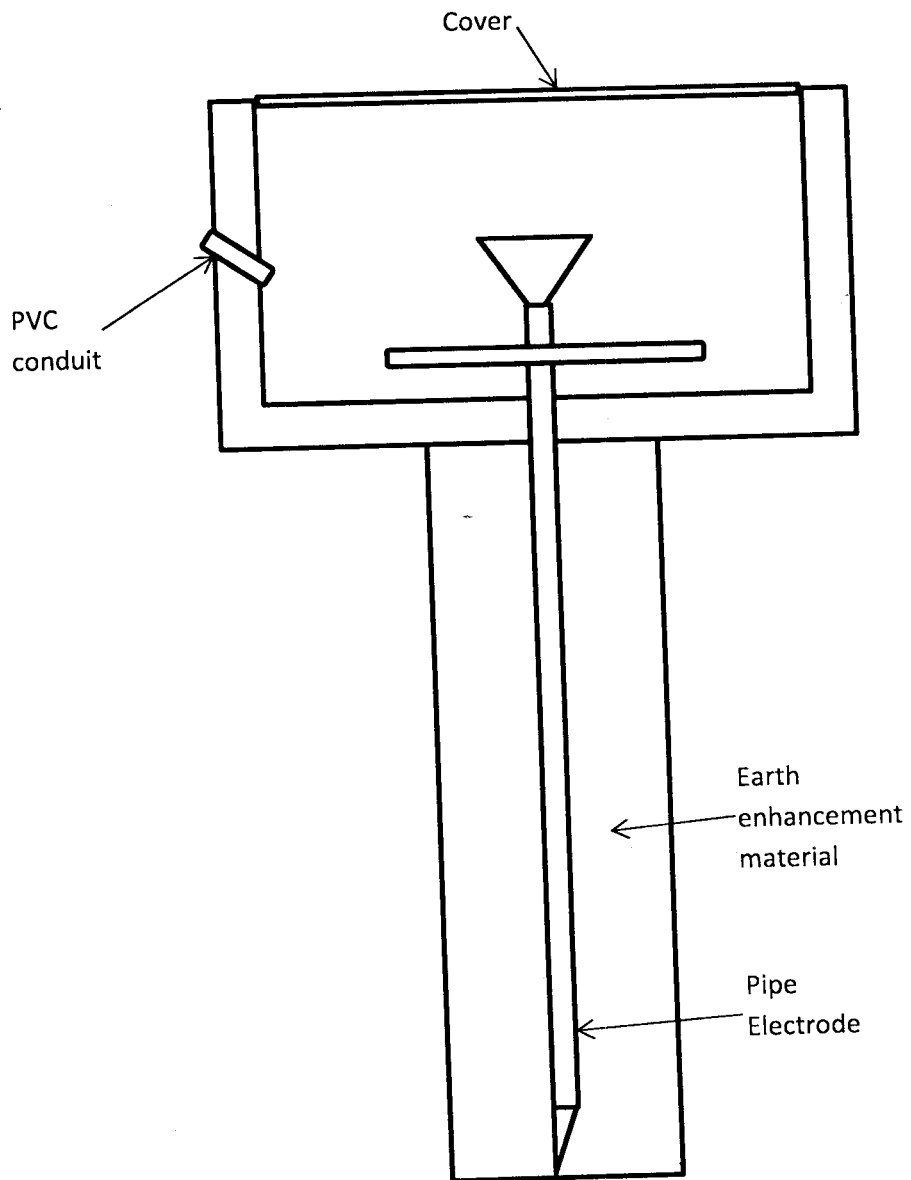
4. Other requirements:

1. The vendor may visit the site before quoting for the job.
2. All the work mentioned shall be completed under the supervision of IPR personal, as per IS-3043.
3. The necessary tools, tackles; consumables, installation material, welding machine and labour required for the works, Earthing Measurement material is in the scope of the contractor.
4. Points for Rated Electric power at (230/415 VAC) and Water Tap will be provide to the vendor near by the site.
5. Where ever Welding is employed for joining and bonding the earth strip, it should be free from defects, and the joints are to be cleaned properly after the job, all welded joints shall be suitably protected by applying red oxide paint.
6. After the laying of earth strip road/concrete/brick and soil shall be restored; at location like wall or concrete structures the earth strip shall be fixed/ clamped to the surface.
7. The contractor has to follow all the civic and electric rules for execution of the work allotted, it is the responsibility of the contractor to take the necessary permission/ permits.
8. The vendor can suggest addition/removal of items in the specification, if it serves the best purpose of the Job.
9. The contractor has to follow all the safety rules and regulations etc. and guide his manpower for the safe working condition.

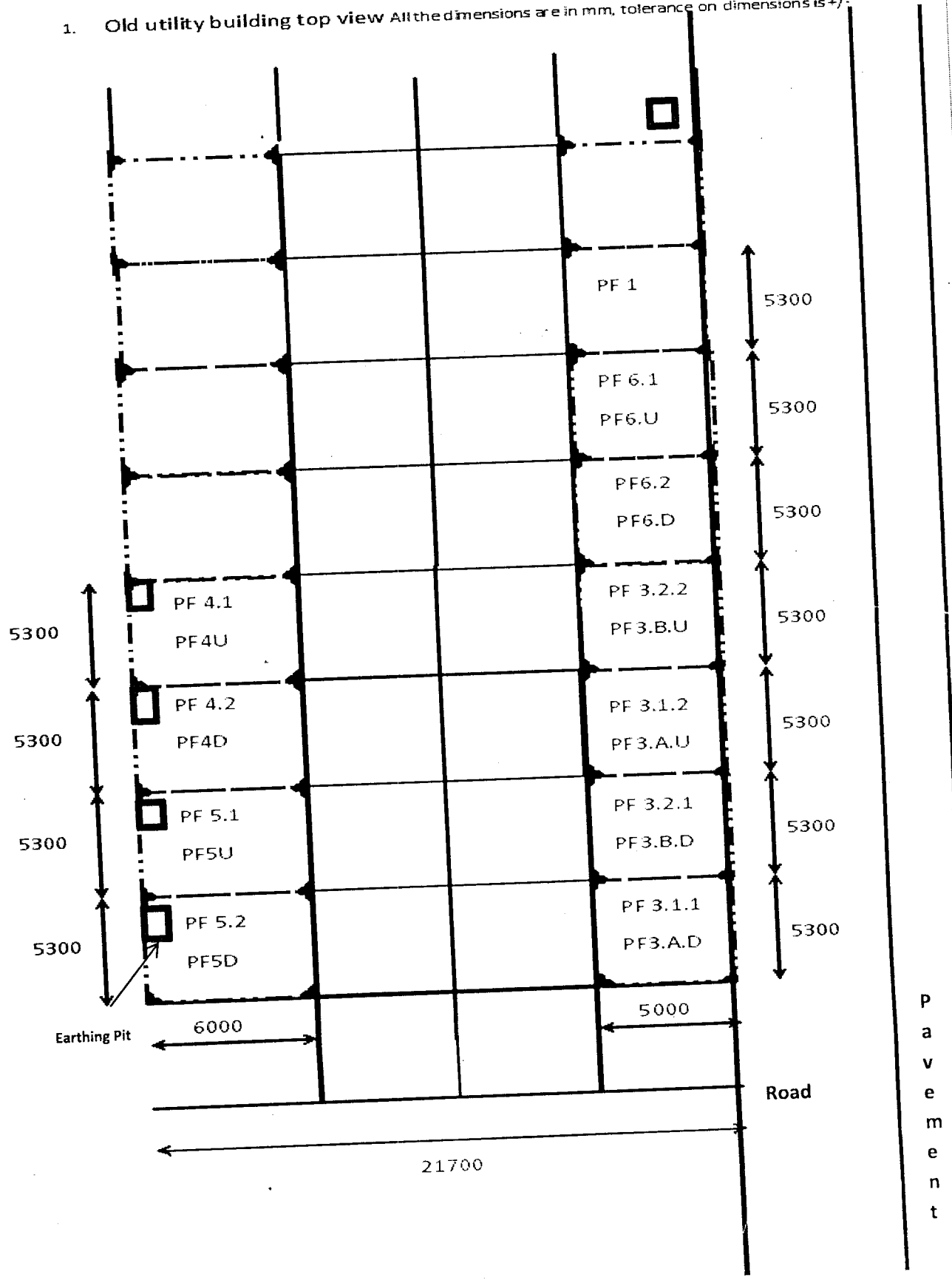
5. Certificates and warranty:

1. Calibration certificate for the testing equipment used for earth resistance measurement.
2. Minimum warranty of the earth Pit shall be 4 month from the date of acceptance.

General view of Earth Pit



1. Old utility building top view All the dimensions are in mm, tolerance on dimensions is +/-



Technical compliance form



Sr.No.	Particulars	IPR requirements	Vendors Specification
1.	Supply of Earthing Electrode	GI pipe 65 mm diameter, 3 Meters length, with staggered holes and tapered end along with a mesh funnel.	
2.	Earth excavation and back filling.	Excavation of earth Pit of proper size, providing and filling of soil activation material, installation of Earthing electrode. And Other charges.	
3.	Construction of inspection chamber with cover	Earth inspection chamber not less than 400*400*400mm along with CI /MS cover.	
4.	Interconnection of the Earthing Pits	Interconnecting the Earthing Pit to create a grid of Earthing Pits using the IPR supplied 50*6 mm GI Flat strip	
6.	Measurement of Earth Resistance of Earthing Pits.	Measurement of Earth Resistance of Earthing Pits, for each Pit and once after interconnection of Pits	

Vendors Seal and Stamp