INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM)
PASHAN, PUNE-411 008

Tender No. CE/IITM/WORKS/FDL/2014-15/06

e-TENDER NOTICE

Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune-411 008, (India). Invites sealed separate tenders for following work (Part-I – Technical Bid, Part-II – Commercial Bid) in separate sealed covers from Contractors registered in the approved list of contractors of PWD/MES/ CPWD/ Railways/P&T/Industrial Experienced contractors and any other government departments inappropriate class for following work:

Name of work: Site development works for installation of de-ionization plant for Fluid Dynamics lab at IITM, Pashan, Pune.

Tender documents can be down loaded from the institute website http://www.tropmet.res.in or e – procurement web site http://eprocure.gov.in and can also be obtained from the civil wing of the institute.

The tender document fee: Rs 500-/, (Rs Five hundred only) [Non Refundable] by demand draft drawn in the favour of Director, IITM Pune.

Date of issue of tender documents : 15/12/2014
Pre - Bid Meeting : 22/12/2014 (1100rs) .
Venue of Pre-Bid meeting : Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan - Pune 411 008

Last date of receipt of Tender at IITM, Pune : 07/01/2015 (1230hrs)
Opening of Tenders (Technical Bids only) : 07/01/2015 (1500hrs)

The Institute reserves the right to reject any or all tenders without assigning any reason thereof.

Civil Engineer
For Director
IITM, PUNE

TENDER FOR

SITE DEVELOPMENT WORKS FOR INSTALLATION

OF DE-IONIZATION PLANT FOR FLUID DYNAMICS

LAB AT IITM, PASHAN, PUNE.

VOLUME-I

(TECHNICAL BID)

INDIAN INSTITUTE OF TROPICAL METEOROLOGY,
DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

TENDER FOR

SITE DEVELOPMENT WORKS FOR INSTALLATION

OF DE-IONIZATION PLANT FOR FLUID DYNAMICS

LAB AT IITM, PASHAN, PUNE.

Tender No. **: CE/IITM/WORKS/FDL/2014-15/06**

Name of work : **Site development works for installation of de-ionization plant for Fluid dynamics lab at IITM, Pashan, Pune.**

Tender document fee: Rs 500/-, (Rs Five hundred only) [Non Refundable] by Demand draft drawn in the favour of Director, IITM Pune-411008.

Date of issue of tender documents from: 15/12/2014

Pre - Bid Meeting : 22/12/2014 at 1100 hrs.

Venue of Pre-Bid meeting : Indian Institute of Tropical, Meteorology, Dr. Homi Bhaba Road Pashan, Pune-411008

Last date of receipt of Tender at IITM, Pune: 07/01/2015 at 12 30 hrs.

Opening of Tenders (Technical Bids only) :07/01/2015 at 15 00 hrs.

Estimated Cost : **Rs. 6.00 Lakhs**

COMPLETION PERIOD : **02 Months** from the date of handing over of site to contractor by the Institute to commence the work

Earnest Money Deposit (EMD): **Rs.12,000/- (Rs. Twelve Thousand only)** by demand draft (DD) or Bank Guarantee (BG) from Nationalize/Schedule Bank in favour of The Director IITM, Pashan, Pune-411008.

NOTICE INVITING TENDER FOR
SITE DEVELOPMENT WORKS FOR INSTALLATION OF DE-IONIZATION PLANT FOR FLUID DYNAMICS LAB AT IITM, PASHAN, PUNE.

FOR

INDIAN INSTITUTE OF TROPICAL METEOROLOGY,
DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

TWO COVER SYSTEM

Tender Notice No. CE/IITM/WORKS/FDL/2014-15/06

Director, Indian Institute of Tropical Meteorology, Pune, Invites bid for the said work under the **Two Cover System** from the contractors who meet the following criteria.

1. Contractor shall produce definite proof of valid contractor license /enlistment certificate with the CPWD/State PWD/MES Railways issued by the respective enlistment authority of the concerned department for the amount not less than estimated amount of the work.

2. For Civil work, Fabrication and Plumbing works of similar nature

   i) Average annual financial turnover for similar works during the last 3 years ending 31st March 2014 of the previous should be at least 30% of the estimated cost.
   ii) Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-

   The BIDDER should have three similar completed works costing not less than the amount equal to 40% of the estimated cost.
   Or
   Two similar completed works costing not less than the amount equal to 50% of the estimated cost.
   Or
   One similar completed work costing not less than the amount equal to 80% of the estimated cost.

4. A sum of Rs. 500/- (Non – Refundable) for the cost of tender documents DD drawn in favour of Director, IITM.

5. This tender is not transferable.

6. The rates for BOQ items total cost of work should be mentioned clearly in the Commercial Offer (Part-II) as per commercial bid format only.

7. Tenders received through Fax / E-mail / Telegraphic / Telex will not be considered.

8. Tenders addressed to the Director, Indian Institute of Tropical Meteorology, Pune 411008 are to be submitted under two bids system. Super scribed with Tender Notice No., name of work, due date and time and it should submitted before due date at time.

9. The tenders must be clearly written or typed without any cancellations / corrections or overwriting.
   a) Tenders, which are submitted without following the Two-Bid Offer System, will summarily be rejected.
   b) Unsigned Tenders will also be rejected.
   c) Part and incomplete tenders are liable to be rejected.

10. The tenders will be received in the Institute till **07/01/2015** up to **12:30 hrs** and shall be opened on **07/01/2015** at **15:00 hrs** (Technical Bids only) in presence of the tenderers or their authorized person who wish to be present.

11. IITM will not be responsible:
   a) For delayed / late quotations submitted / sent by Post / Courier etc.
   b) For submission / delivery of quotations at wrong places other than the Office of Director, IITM, Pune,

12. The tender / quotation / offer submitted by the firm should be valid for a minimum period of One hundred twenty days **(120) days** from the date of opening the tender.

13. If required technical evaluation committee of IITM will visit to bidder's completed site and submit the report to IITM Pune. Based on IITM Committee report bidders will be qualified/disqualified.

14 The commercial bids of only technically qualified bidders will be opened by the Institute.

15 Delivery Period – As the time is the essence of the contract, period of completion of work should be strictly adhered to.

16 The Tenderer is required to furnish the Permanent Account Number (PAN) and Service Tax no. if any allotted by the Income Tax Department. If registered with the National Small Industries Corporation, the registration number, purpose of registration and the validity period of registration' etc. should also be provided in Technical Bid.

17 A copy of latest Income Tax Clearance Certificate from Income Tax Department (INDIA) for in Technical Bid.

18 The bidders are requested to submit their bank details required for RTGS Payment

19) **PAYMENT**:

a) No advance can be paid.

b) Running payment with total bill limit two. RA bills not less than 2.00 lakhs each.

20) **Performance security 5**% of order value in the form of DD/BG drawn on Nationalized Bank/Scheduled bank in favour of Director IITM, Pune payable at Pune.

21) **Retention money:** 5% security deposit will be recovered & retained from each running bill which will be refunded after defect liability period of 12 months from the date of handing over the clear site

22) **Non tendered items**: The Rate for non-tendered items will be arrived as per following material cost at site + labour cost + taxes + 10% overhead & profit. Non tendered items will be executed only with prior approval of Institute's authority.

23) **DEVIATION:** Additional work/any deviation beyond work order quantities requires prior approval of the IITM authorities before execution of such work. The permissible overall deviation from the work order value is 10% and such deviation should not be executed at site without prior approval of Institute's authority.

24) **DEFECT LIABILITY PERIOD**: Defect liability period of the work will be 12 months from the date of actual completion of work and clear handing over of the site by the contractor to the Institute.

25) The successful bidder will be responsible for all activities on the site as per safety norms and building code

26) Government/labour Act- The successful bidder will follow all the government labour acts which are in force at present and introduce from time to time.

27) The prices quoted should be firm and irrevocable and not subject to any change whatsoever, even due to increase in cost of raw material components and fluctuation in the foreign exchange rates and excise duty.

28) IITM will not provide any accommodation / transportation for the Engineers/Representatives.

29) No sub-contracting will be allowed for installation or maintaining system/ equipment/ instrument during or after warranty period.

30) Discount if any offered should be mentioned clearly in the commercial bid only.

31) The Earnest Money Deposit of **Rs. 12,000/- (Rs. Twelve Thousand only) must** be paid / sent along with your technical bid in the form of a Demand Draft, or Bank Guarantee drawn on Nationalized Bank drawn in favour of **The Director, Indian Institute of Tropical Meteorology, Pune payable at Pune**, otherwise your technical & financial bids will not be considered at all.

32) The Earnest Money of the unsuccessful bidder whose technical bid has not been found suitable will be returned within 30 days after award of work to successful bidder.

33) Tenders not accompanied with Demand Draft / Bank Guarantee towards "Earnest Money Deposit" and tender fee will summarily be rejected.

34) **PENALTY:** If the Contractor fails to carry out the work as per specifications mentioned in the BOQ within the due date, the contractor is liable to pay liquidated damages of one percent, per every week delay subject to a maximum of 10% of work order value and such money will be deducted from any money due or which may become due to the supplier. Completion period will be calculated from the date of handing over the site to the contractor for execution of work.

35) Corrupt or Fraudulent Practices.

A) IITM requires that the bidders/contractors under this tender observe the highest standards of ethics during the procurement and execution of such contracts. In pursuance of this policy, IITM:

i) Defines for the purposes of this provision, the terms set forth as follows:

a) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of the public official in the procurement process or in contract execution; and

b)"Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or a execution of a contract to the detriment of IITM, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive IITM of the benefits of the free and open competition;

ii) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt of fraudulent practices in competing for the contract in question;

B) IITM will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt and fraudulent practices in competing for, or in executing, a contract.

36) Conditional Offers will not be considered.

37) All disputes are subject to exclusive jurisdiction of Competent Court and Forum in Pune, India only.

38) The Director, Indian Institute of Tropical Meteorology, Pune 411 008, India reserves the right to accept any tender in full or in part or to reject the lowest or any or all tenders without assigning any reason.

39) The Director, Indian Institute of Tropical Meteorology, Pune will be the final authority to decide the appropriate action and it will be binding on the Vendor.
*Only one set of document will be issued. Contractors have to take additional copies.

40) **BID SUBMISSION**

Technical Bid-I along with forwarding application on their company letter head, complete tender documents, blank BOQ, related documents duly signed and stamped on each page in sealed ENVELOPE superscribe with TECHNICAL BID and Part - II Commercial Bid duly filled and signed in separate sealed ENVELOPE superscribed with COMMERCIAL BID and Both the sealed bids should be sent in another sealed envelope superscripted with Tender notice no., due date and time addressed to the Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, IITM Post, Pashan, Pune – 411 008, INDIA so as to reach on or before **07/01/2015 (12:30hrs). The technical bids will be opened on the same day at 15:00 hrs.**

[Note: Late received bids will not be considered for tender opening and further evaluation]

41) The Director, Indian Institute of Tropical Meteorology, reserves the right to accept/reject Anyone /all the tenders without assigning any reason thereof.

CIVIL ENGINEER
FOR DIRECTOR,
INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR. HOMI BHABHA ROAD,NCL POST, PASHAN
PUNE – 411008.INDIA

-AGREEMENT-

This agreement, made the day of ,2014 between Indian Institute of Tropical Meteorology, Homi Bhabha road, Pashan, Pune (hereinafter called _ the Employer) II of the one part and M/s. ------- II of the part

Whereas the Employer is desirous that the Contractor execute ----------at Indian Institute of Tropical Meteorology, Pashan, Pune (hereinafter called _ the Works II) and the Employer has accepted the Bid by the Contractor for the execution

And completion of such works and the remedying of any defects therein, at a Contract Rs. ---------

THIS AGREEMENT WIRNESSETH as follows:

1. In this Agreement, words and expression shall have the same meaning as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein conformity in all aspects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying the defects wherein the contract Price or such other sum as may become payable under the provisions of the Contractor at the times and in the manner prescribed by the contract.
4. The contractor shall not be responsible for any delays due to changes in drawings, specifications, scope of work or any other reasons attributable to the client, his representatives and other contractors. The contractor shall also not be responsible for any delays occurring due to force majeure situations during the execution of the work.
5. **PENALTY CLAUSE:** If the Contractor fails to carry out the work as per specifications mentioned in the BOQ within the due date, the contractor is liable to pay liquidated damages of one percent, per every week delay subject to a maximum of 10% of work order value and such money will be deducted from any money due or which may become due to the supplier. Completion period will be calculated from the date of handing the site to contractor for execution of work.

6. Other terms and conditions will be applicable as per Tender document and issued LOI dated on--------

In witness whereof the parties thereto have caused this Agreement to be executed the day and Year first before written.

Signed and delivered for and on behalf of M/s. ---------	Signed and delivered for and on behalf of Indian Institute of tropical Meteorology, Pashan
1) Signature Name: Address:	1) Signature Name:
2) Signature Name:	2) Signature Name:

REFERENCE BOQ TO BE SUBMITTED BLANK DULY SIGNED AND STAMPED

ALONG WITH TECHNICAL BID:

BOQ for site development work for installation of de-ionization plant for fluid dynamics lab at IITM, Pashan, Pune.

SR. NO.	ITEM DESCRIPTION	QTY.	UNIT	Basic Rate Rs.	Tax Rs.	Total rate (basic+tax) Rs.	Amount Rs.
1	Dismantling tile work in floors, steps, kota etc. laid in cement mortar including stacking serviceable material and disposal of unserviceable material outside office premises lead. For thickness of tiles 10 mm to 25 mm	30	sq.m.				
2	Excavation for foundation in earth , murum, road, soil of all types including spreading and leveling , preparing the bed for foundation and necessary back filling , ramming ,watering including shoring and strutting etc.(Lift upto 1.5m) including disposing off excavated soil out of office premises.	35	cum				
3	Filling with contractor murum in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering etc. complete all as directed.	17	cum				
4	Providing and laying in position cement concrete of specified grade including the cost of centering and shuttering - All work up to plinth level :1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in foundation, floor/plinth sub base and coping etc.	9	cum				

5	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	55	kg				
6	Providing and fixing precoated galvanized iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge)0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required with necessory champer at joint of sheet and wall for proper way to rain water wherever required.	55	sq.m.				

7	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) angle, trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer and synthetic enamel paint including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	2000	kg				
8	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings such as hinges, tower bolt , locking system etc. complete, including applying a priming coat of approved steel primer and synthetic enamel paint etc. Using M.S. angels 40x40x6 mm for diagonal braces	8	sq.m.				
9	Providing and laying non-pressure NP2 class R.C.C. pipes in cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete : 150 mm dia. R.C.C. pipe	22	mtr.				
10	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes(half round) including bed concrete as per standard design : 200 mm diameter S.W. pipe	20	mtr.				

11	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2	each				
12	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings(tee, elbow, reducers, connectors etc.) including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. 25 mm nominal outer dia Pipes	280	mtr.				
13	Providing & fixing various types of valve & other fittings etc complete.						
	A)brass stop cock of approved quality 25mm	15	no.				
	B) Gun metal non-return valve of approved quality (screwed end) : 25 mm nominal bore Horizontal	7	no.				
	C)ball valve (brass) of approved quality, High or low pressure, with plastic floats complete 25mm nominal outer dia.	3	no.				
14	Providing and fixing 'Sintex' water storage tank of approved make and of required capacity including all necessary foundation bed in concrete 1:2:4 of height 300mm connections , accessories, transportation, hoisting erection etc. complete	5000	litr.				

15	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in : Cement mortar 1:3 (1 cement : 3 coarse sand)	17	sq.m.				
16	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand)	1	cum				
17	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand)	20	sq.m.				
18	Providing and laying cement concrete 1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in coping and for fixing MS Angle etc. including necessary shuttering all as directed	1	cum				
19	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 5	30	each				
20	1 to 1.5 HP monoblock pump whichever is approved (Make-Crompton/ Kirloskar/Jyoti) as approved by engineer-in-charge.	1	each				
21	Supply and fixing Slow roll on mosquito net sliding up/down curtain fitted with aluminium white powder coated white framing support system as per approved sample.	150	sq.ft.				
					Total		

VOLUME-II

COMMERCIAL BID

COMMERCIAL BID BOQ

BOQ for site development work for installation of de-ionisaton plant for fluid dynamics lab at IITM, Pashan,Pune.

SR. NO.	ITEM DESCRIPTION	QTY.	UNIT	Basic Rate Rs.	Tax Rs.	Total rate (basic+tax)Rs.	Amount Rs.
1	Dismantling tile work in floors, steps, kota etc. laid in cement mortar including stacking serviceable material and disposal of unserviceable material outside office premises lead. For thickness of tiles 10 mm to 25 mm	30	sq.m.				
2	Excavation for foundation in earth , murum, road,soil of all types including spreading and leveling , preparing the bed for foundation and necessary back filling , ramming ,watering including shoring and strutting etc.(Lift upto 1.5m) including disposing off excavated soil out of office primises.	35	cum				
3	Filling with contractor murum in layers not exceeding 20cm in depth,consolidating each deposited layer by ramming and watering etc. complete all as directed.	17	cum				
4	Providing and laying in position cement concrete of specified grade including the cost of centering and shuttering - All work up to plinth level :1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in foundation, floor/plinth sub base and coping etc.	9	cum				

5	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	55	kg				
6	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge)0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required with necessory champer at joint of sheet and wall for proper way to rain water wherever required.	55	sq.m.				

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8	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings such as hinges, tower bolt , locking system etc. complete, including applying a priming coat of approved steel primer and synthetic enamel paint etc. Using M.S. angels 40x40x6 mm for diagonal braces	8	sq.m.				
9	Providing and laying non-pressure NP2 class R.C.C. pipes in cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete : 150 mm dia. R.C.C. pipe	22	mtr.				
10	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes(half round) including bed concrete as per standard design : 200 mm diameter S.W. pipe	20	mtr.				

11	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2	each				
12	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings(tee, elbow, reducers, connectors etc.) including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. 25 mm nominal outer dia Pipes	280	mtr.				
13	Providing & fixing various types of valve & other fittings etc complete.						
	A)brass stop cock of approved quality 25mm	15	no.				
	B) Gun metal non-return valve of approved quality (screwed end) : 25 mm nominal bore Horizontal	7	no.				
	C)ball valve (brass) of approved quality, High or low pressure, with plastic floats complete 25mm nominal outer dia.	3	no.				
14	Providing and fixing 'Sintex' water storage tank of approved make and of required capacity including all necessary foundation bed in concrete 1:2:4 of height 300mm connections , accessories, transportation, hoisting erection etc. complete	5000	lit.				

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17	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand)	20	sq.m.				
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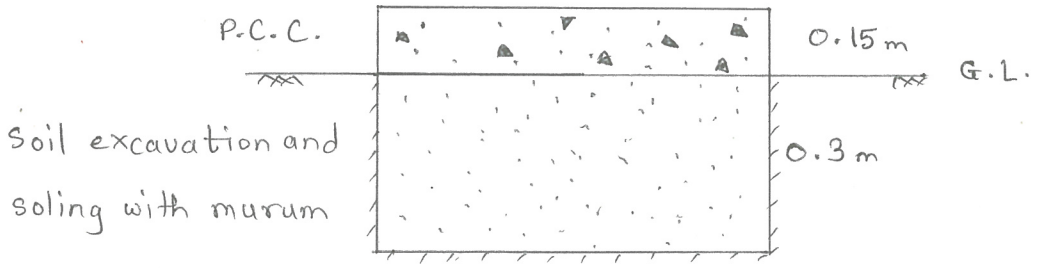
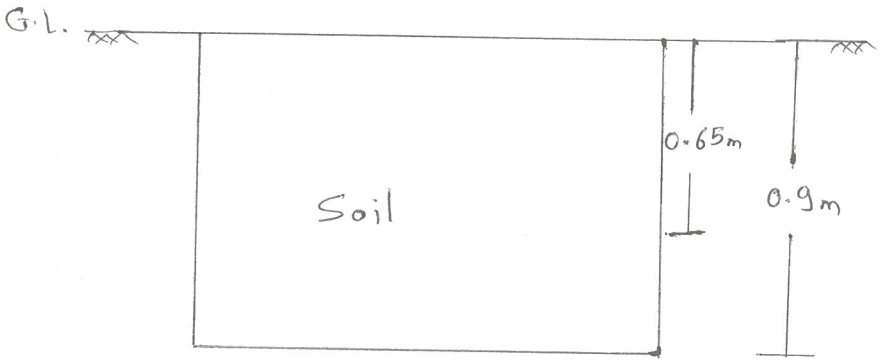
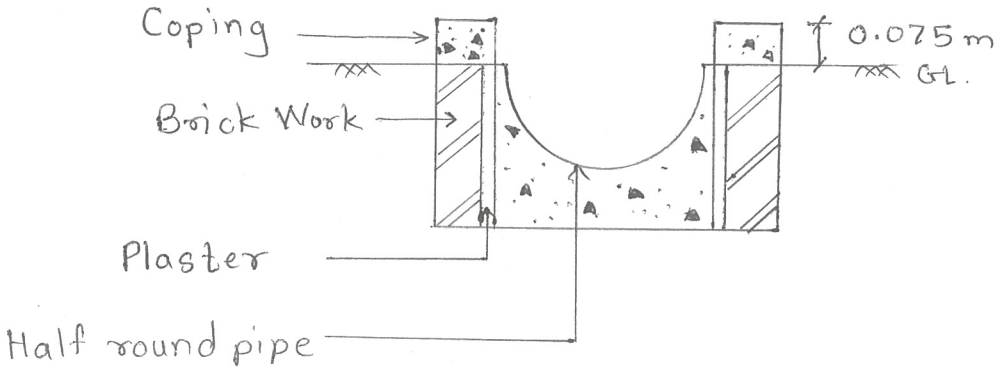
19	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 5	30	each				
20	1 to 1.5 HP monoblock pump whichever is approved (Make-Crompton/ Kirloskar/Jyoti) as approved by engineer-in-charge.	1	each				
21	Supply and fixing Slow roll on mosquito net sliding up/down curtain fitted with aluminium white powder coated white framing support system as per approved sample.	150	sq.ft.				
					Total		



c/s of excavation and P.C.C.



c/s of excavation for laying pipe at various depth



c/s of half round pipe