

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

Sl. no	Tender Notice Number	Name of Work	Tender Document Fees in Rs.	Date of Issue of Tender Document		Last Date of receipt of tender	Date and time of opening the tender (Technical Bids Only)
				From	To		
1	ENGG\MECH\S HB\2015-16/01	Design, supply, installation and commissioning of solar water heaters at student Trainee Hostel building, IITM & IMD at IMD colony campus, Pashan, pune-411008	1500/-	10/09/2015	29/09/2015	30/09/2015 at 12:00 Hrs	30/09/2015 at 15:00 Hrs

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:** [Non Refundable] by demand draft drawn in the favour of Director, IITM Pune.

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

Mechanical Engineer  
For Director  
IITM, PUNE  
[ravindra@tropmet.res.in](mailto:ravindra@tropmet.res.in)



# TENDER DOCUMENT FOR

## Design, Supply, Installation and Commissioning of Solar Water Heaters at IITM IMD Student Hostel Building Pashan Pune

Including  
5 Years Warrantee/ Guarantee & AMC  
Tender Notice No: ENGG\MECH\SHB\2015-16\01

TENDER NO. ENGG\MECH\SHB\SOLAR\2015-16\01

NAME OF FIRM.....



भारतीय उष्णदेशीय मौसम विज्ञान संस्थान  
(पृथ्वी विज्ञान मंत्रालय, भारत सरकार का एक स्वायत्त संस्थान)  
डॉ. होमी भाभा मार्ग पाषाण, पुणे- ४११ ००८

**INDIAN INSTITUTE OF TROPICAL METEOROLOGY**  
(An Autonomous Institute of the Ministry of Earth Sciences, Govt. of India)  
Dr. Homi Bhabha Road, Pashan, Pune - 411 008. India



### TABLE OF CONTENTS

SECTION	TOPIC	PAGE No.
Part-1 General Details	1. Tender Notice	4
	2. Covering Letter	5
	3. Particulars of Tender	6
	4. General Particulars of tenderer	7
	5. Declaration by tenderer	8
Part-2 Instructions to Tenderers	1. Section 1 - Introduction	10
	2. Section 2 - The tender document	11-12
	3. Section 3 - Preparation of Tender	13-14
	4. Section 4 - Submission of Tender	15
	5. Section 5 - Tender opening and evaluation	16
	6. Section 6 - Award of Contract	17
Part -3	1. General conditions of contract & Payments Terms	19-27
Part-4	General Technical Specification.	29-31
Part-5	Scope of work	34
Part-6	Technical Bid	36-38
Part-7	Financial Bid	40-41
Enclosures/ Annexure	Annexure-I to IV :- Formats for various Bank Guarantees	42-44
	Drawing	45

# PART-I

## GENERAL DETAILS



**TenderNotice No. ENGG\MECH\SHB\2015-16\01**

Sealed (technical and commercial bid) tenders are invited from all eligible manufacturers and experienced contractors for Design, Supply, Installation & commissioning of Solar Water Heating Systems of 2000 LPD and above

The detailed notice, eligibility criteria and tender document can be seen/downloaded from <http://www.tropmet.res.in/Tenders>. In future, any further notice/information related to this tender shall be uploaded on the same website only. The undersigned reserves all the rights to reject any or all the tenders without assigning any reason.

Solar Water Heating System (SWH) systems, from MNRE/ JNNSM's approved manufacturers/channel partner of MNRE or their authorized representatives, fulfilling the eligibility criteria as per MNRE STD 01:2013 latest system specifications(up to date amended from time to time ) and conforming to MNRE's/JNNSM's guidelines/minimal technical requirements details enclosed /standards for SWH systems and amendments thereof. Tenderers who have obtained the valid test reports for SWH systems, issued by Solar Energy Centre /other Authorized Test Centres on the date of opening of technical bid and subsequently renewable up to period of validity of rates ie one year from the date of signing agreement, conforming to the above mentioned criteria would be eligible for participation. The Tenderers shall ensure full compliance with the below mentioned technical specifications for SWH systems, even in case of any further amendment(s) thereof in this regard, during the entire period of the Agreement signed under this Tender;

FROM :- (Full name and address of the tenderer)

M/s.....  
.....  
.....  
.....

To,

**The Director**  
Indian Institute of Tropical Meteorology,  
Pashan, Pune

Subject: - Offer in response to Tender Notice No. ENGG\MECH\SHB\2015-16\01

Sir,

We hereby submit our offer in full compliance with terms & conditions of the attached tender. The tender is being submitted in two separate and sealed envelopes marked Part I Technical bid & Part II Commercial bid.

(Signature of Tenderer)  
Seal

## PARTICULARS OF TENDER

1	Tender Notice No.	ENGG\MECH\SHB\2015-16\01
2	Particulars of the work	Design, Supply, Installation & Commissioning of Solar Water Heaters Capacity of 2000LPDX3 units with heat pumps at IITM IMD Student hostel in IMD colony Pashan Pune including 5 years Warrantee/ Guarantee & AMC
3	Quantity	2000LPDX3units + 3 heat pumps of 6.5KW each
4	Period of contract	Till the completion of all proposed works.
5	Cost of tender document	Rs1500
6	Last date/ time of submission	<b>30.09.15 up to 12:00 PM</b>
7	Estimated cost of work	14.5 Lakhs
8	Amount of Earnest money	Rs. 30,000( Thirty Thousand)
9	Validity of offer for acceptance	Six Months from the date of opening of the Technical bid
10	Date and Time of opening of tender	<b>30.09.15 up to 3:00 PM</b>
11	Place of opening of tender	IITM Office, Pune
12	Completion Period	2 Months from the date of LOI Work Order

### Note:-

- 1- The tender document can be obtained on any working day during office hours from the Mechanical Section of Engineering Division , IITM, Pune , till 29 Sept, 2015 after paying the cost of tender document through Bank draft in favour of Director IITM, Pune .
- 2- It can be downloaded also from <http://www.tropmet.res.in/Tenders> and the cost of tender document can be deposited along with the technical bid of the tender document.
- 3- Tender document issued by IITM or downloaded from the above website will only be considered valid.

### GENERAL PARTICULARS OF TENDERER

Sl	Particulars	Details
1	Name of Tenderer/Firm	
2	Postal Address	
3	E-mail address for communication	
4	Telephone, Fax No.	
5	Name, designation & contact number of the representative of the tenderer to whom all references shall be made.	
6	Nature of the firm (Individual/Partnership/Consortium/ Pvt. Ltd /Public Ltd. Co. /Public Sector etc.) Attach attested copy of Registration & Partnership deed/Memorandum of Association	
7	Amount and particulars of the earnest money deposited.	
8	Annual Turn over for last three years (Attach balance sheets from CA in this regard)	
9	Name and address of the Indian/foreign collaboration if any.	
10	Sales Tax Registration no.(Copies of Registration Certificates of trade tax/ sales tax to be enclosed)	
11	Has the tenderer/firm ever been debarred by any institution for undertaking any work?	
12	Any other information attached by the tenderer (Details and Annexure / page no. where its enclosed)	
13	Does tenderer have any relative working in IITM? If yes state the name and designation.	

Tenderers are requested to give their full particulars and legal and financial status.

(Signature of tenderer with Seal)



## DECLARATION BY THE TENDERER

I. /We .....

(Hereinafter referred to as Tenderer) being desirous of tendering for the work, under this tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document do here by declare that-

1. The tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.
2. The tenderer is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/ site, its local environment, approach road and connectivity etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labour etc. at site.
3. The tenderer is capable of executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The tenderer is sufficiently experienced and competent to perform the contract to the satisfaction of IITM. The tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.
4. The tenderer has no collusion with other tenderers, any employee of IITM or with any other person or firm in the preparation of the tender.
5. The tenderer has not been influenced by any statement or promises by IITM or any of its employees but only by the tender document.
6. The tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
7. The tenderer has never been debarred from similar type of work by any Government undertaking /Department. (An undertaking on Stamp paper in this regard shall be submitted)
8. The tenderer accepts that the earnest money may be absolutely forfeited by IITM if the tenderer fails to sign the contract or to undertake the work within stipulated time.
9. This offer shall remain valid for acceptance for 6 (Six) months from the proposed date of opening of the Technical Bid.
10. All the information and the statements submitted with the tender are true.

(Signature of Tenderer) SEAL

# PART-2

## INSTRUCTIONS TO TENDERERS

SECTION 1  
INTRODUCTION

ELIGIBLE TENDERERS

The tenderer shall provide sufficient documentary evidences to satisfy the following conditions that the tenderer:

(a) Is an indigenous manufacturer of the Solar Systems or experienced contractor in the field of Solar Water heater system?

(b) The tenderer fulfills the terms and conditions of eligibility as an indigenous manufacturer of Solar Systems in accordance with the directions of Ministry of New and Renewable Energy Government of India.

(c) Has adequate plant and manufacturing capacity available, to perform the works properly and expeditiously within the time frame specified in the tender document.

(d) Has established quality assurance systems and organization designed to achieve high level of equipment reliability in manufacturing of the Solar Water Heater Systems.

(e) Has adequate financial stability and status to meet the financial obligations pursuant to the scope of work. (The firm must have annual turnover of minimum 60 Lacs during last three years.)

(f) Has experience of manufacturing, supply and maintenance/after sale services in the field of solar water heater systems of more than 1, 00,000 LPD cumulative capacities in the last three years. The details must be submitted in the Performa given in Technical- Bid section of tender document. The tenderer should have a single work order for the installation, testing and commissioning of Similar Size Solar water heater systems.

(g) Has adequate field service setup to provide good after sale services including necessary repair and maintenance.

(h) Has provided good after sale services for the works done by him during past years.

(i) Has Valid Test Certificate of the solar water heater systems as specified and required in the Technical- Bid of this tender document.

(j) Except above has Fulfills all other requirements as per provisions under JNNSM.

The above stated requirements are compulsory to be fulfilled by the tenderer and IITM may also ask for any additional information as may be deemed necessary in public interest.

(K) No advance payment will be given by IITM.

SECTION 2  
**THE TENDER DOCUMENT**

2.1 **CONTENT OF TENDER DOCUMENT**

2.1.1 The tender procedure and contract terms are prescribed in the tender document. In addition to the invitation of tender, the tender document includes the various other documents as given in the table of contents at page no-2.

2.1.2 The tenderer is expected to examine all instructions, terms and conditions, specifications, forms and formats etc as mentioned/ enclosed in the tender document. Failure to furnish all information required in the tender document or submission of a tender not substantially responsive to the tender document in every respect will be at the tenderer's risk and is likely to result in out-right rejection of the tender.

2.2 **INFORMATION REQUIRED WITH THE PROPOSAL**

2.2.1 The tender must clearly indicate the name of the manufacturer, the types and model & make of each principal item of equipment proposed to be supplied. The tender may also contain details of specifications and other comprehensive descriptive materials in support of technical specifications.

2.2.2 The above information may be provided by the tenderer in the form of separate sheets, specifications, catalogues etc.

2.2.3 Any tender not containing sufficient descriptive material to describe the proposed equipment may be treated as incomplete and hence may be rejected. Such descriptive materials and specifications submitted by the tenderer will be retained by IITM. Any deviations from these will not be permitted during the execution of contract, without specific written permission of IITM.

2.3 **CLEARIFICATION OF TENDER DOCUMENT**

2.3.1 Any prospective tenderer requiring any clarification on the tender document regarding various provisions / requirements/ preparation/ submission of the tender, may contact IITM in writing by letter or fax/ email within one week (7 days) from the date of publication/up-loading of tender at Website. Queries received later shall not be entertained.

2.3.2 Verbal clarifications and information's shall not be entertained in any way.

2.4 **AMENDMENTS IN TENDER DOCUMENT**

2.4.1 At any time prior to the due date for submission of the tender or even prior to the opening of the financial bid, IITM may for any reason, whether at its own initiative or as a result of a request for clarification/ suggestion by a prospective tenderer, amend the tender document by issuing a notice.

2.4.2 The amendments will be notified on the website at least 3 days before the

proposed date of submission of the tender. IITM will bear no responsibility or liability arising out of non- receipt of the information in time or otherwise. If any amendment is required to be notified within 3 days of the proposed date of submission of the tender, the last date of submission shall be extended for a suitable period of time.

2.4.3 In case amendments is notified after submission of the tender (prior to the opening of financial bids), all the tenders received by IITM shall be returned in sealed condition to the concerned tenderers through registered post or courier, for getting their offer revised according to the amended terms and conditions.

2.4.4 All the notices related to this tender which are required to be publicized shall be uploaded only <http://www.tropmet.res.in/Tenders>

## 2.5 (To be submitted with Technical Bid)

**Manufacturers Authorization Letter for Representative** (On Manufacturer's Letter Head, duly notarized, to be submitted with Technical Bid)

Ref. No.-----

Dt.-----

To,  
The Director,  
Indian Institute of Tropical Meteorology  
Pashan, Pune 411008

Subject :Authorization for participation in the Tender for quoting our products as per tender requirements.

Ref.: Tender No. \_\_\_\_\_

Dear Sir,

We M/s \_\_\_\_\_, who are established and reputed Indian manufacturer/ of \_\_\_\_\_, having factory/company's registered office at \_\_\_\_\_ (full address, Phone/Fax/e-mail address etc.), do hereby authorize our representative to M/s \_\_\_\_\_ (full address, Phone/Fax/e-mail address etc.) to submit the Bid and subsequently negotiate and sign the agreement with IITM against above referred Tender for \_\_\_\_\_ (Name & Make of quoted products with details – designing, supplying, fixing, testing & commissioning), as per terms and conditions required under this RFP. We hereby extend our full guarantee and warrantee as per Terms & Conditions of the said tender for goods & services offered. We also confirm to provide the spares for at least five years from the date of supply/installation. We reiterate that goods ordered on the above firm shall be supplied in due time. We also hereby declare that we will be held fully responsible for any mischief/misconduct/non-supply or supply of sub-standard items by our authorized distributor. In such cases, the penalty may be recovered from us.

Thanking you,

For \_\_\_\_\_

Name & Designation of the Signatory

SECTION 3  
PREPARATION OF TENDER

3.1 LANGUAGE OF TENDER AND MEASURE

The tender prepared by the tenderer along with all the related documents shall be in English. Any printed literature furnished by the tenderer may be in another language so long as it is accompanied by an English translation of its pertinent passages. Unit measurements shall be metric in accordance with International System. All correspondence between the tenderer and IITM shall also be in English.

3.2 EARNEST AND SECURITY MONEY

3.2.1 The tenderer shall furnish earnest money as mentioned in the 'Particulars of Tender' in the form of DD/ Bank guarantee from any nationalized bank pledged in favour of Director, IITM, Pune , as a part of his tender. The bank guarantee should be valid for a period of 120 days beyond the validity of offer. Tenders without EMD shall be rejected by IITM as being non-responsive. The No interest shall be paid by IITM on the amount of earnest money deposit.

3.2.2 The earnest money may be forfeited:-

- a) If a tenderer withdraws his tender during the specified period of validity of offer.
- b) If the successful tenderer fails to sign the contract agreement within stipulated period.

3.2.3 The earnest money of the successful lowest tenderer shall be released at the time of signing of the agreement with IITM. At this time, the tenderer shall have to deposit security money amounting to 5% of the contract value in the form of DD/ Bank guarantee from any nationalized bank pledged in favour of Director, IITM, Pune . The bank guarantee should be valid for a period of 6 months. No interest shall be paid by IITM on the amount of security money deposit.

3.2.4 The earnest money of all other unsuccessful tenderers shall be released after receiving confirmation of acceptance from successful bidder.

3.3 PERIOD OF VALIDITY OF TENDER

3.3.1 Validity of the offer should be Six (06) months from the proposed date of opening of the Technical bid. Tenders without this validity the will be rejected.

3.3.2 In exceptional circumstances, IITM may solicit the consent of the tenderers to an extension of the period of validity of offer. The request and the response there of shall be made in writing.

### 3.4 FORMATS AND SIGNING OF TENDER

3.4.1 The tender must contain the name and places of business of the firm/person/persons participating in the tender and must be signed and sealed by the tenderer with his usual signature. The name and designation of all persons signing the tender document should be written below every the signature. Tender by a partnership firm must be furnished with full name of all partners with a copy of partnership deed.

3.4.2 The original copy of the tender should be typed or written in indelible ink and must be signed with the legal name of the corporation/ company by the President/ Managing Director/ Secretary of the firm or a person duly authorized to bid. In case of authorized person the letter of authorization by written power-of-attorney should be enclosed with the technical bid of the tender. The person or persons signing the tender shall initial all pages of the tender document.

3.4.3 The tender shall contain no interlink actions, erasers or overwriting except as necessary to correct the errors made by the tenderer in the preparation of tender. The person or persons signing the tender shall also sign at all such corrections.

### 3.5 PRICE AND CURRENCIES

The tenderer shall submit his rates in Indian Rupees only, on the format for Financial Bid attached to this tender document. The rates should include all applicable taxes, duties & surcharges. Once quoted price will not change during contact period.

## SECTION 4 SUBMISSION OF TENDER

### 4.1 SEALING AND MARKING OF TENDER

4.1.1 The tender must be complete in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the tender document.

4.1.2 First sealed envelope (Part-I) should contain cost of the tender document (In case it's downloaded from website), requisite earnest money, brochures, literature and other documents regarding technical specifications. It should be subscribed with TENDER NO. ENGG\MECH\SHB\2015-16\01 & 'Earnest Money and Technical Bid'.

4.1.3 The complete tender document in original (excluding financial bid) issued by IITM or downloaded from the website should be submitted by the tenderer in the first envelope (Part- I Technical) after furnishing all the required information on relevant pages. Each page of the tender document should be signed & stamped. Tenders with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the tenderer to furnish/ submit the required information.

4.1.4 Second sealed envelope (Part-II) should contain financial bid only. It should be subscribed with TENDER NO. ENGG\MECH\SHB\2015-16\01 and "Financial bid". The tenderer should submit his duly signed and stamped financial bid on the financial bid format attached with this tender document, after writing the price only.

4.1.5 Any term/condition proposed by the tenderer in his technical bid which is not in accordance with the terms and conditions of the tender document or any financial conditions, payment terms, rebates etc. mentioned in financial bid shall be considered as a conditional tender and will make the tender invalid.

4.1.6 Both the above sealed envelopes i.e. Part-I and Part-II will be sealed in another one envelope, subscribed with TENDER NO. ENGG\MECH\SHB\SOLAR\2015-16\01 and 'Name of Work'..... This envelope shall be addressed to the Director, Indian Institute of Tropical Meteorology, Pashan, Pune.

### 4.2 DEADLINE FOR SUBMISSION OF TENDER

4.2.1 Tender must be received by IITM till the date & time of submission as specified in tender document.

4.2.2 Any tender received after the specified date & time of submission will be rejected and returned unopened to the tenderer.



SECTION 5  
TENDER OPENING AND EVALUATION

5.1 OPENING OF TENDER

The procedure of opening of the tender shall be as under:

5.1.1 First envelop (Part-I) bearing TENDER NO. ENGG\MECH\SHB\2015-16\01 and subscribed 'Earnest Money and Technical Bid' shall be opened by IITM's representatives at the time and date mentioned in the 'Particulars of Tender', in the presence of tenderers who choose to be present. The financial and technical suitability of offers will be examined by IITM in detail. If required, clarifications regarding the suitability of the offers will be obtained.

5.1.2 Second envelope (Part-II) bearing TENDER NO. ENGG\MECH\SHB\2015-16\01 and subscribed "Financial bid" of only those tenderers shall be opened whose technical bid is found responsive, suitable and in accordance with the various requirements of the tender.

5.1. A suitable date for the opening of financial bid shall be announced or shall be communicated to tenderers by letter/ fax/ email (Either Mode). To avoid postponement of opening of financial bid, it is in the interest of the tenderers to send their authorized representatives who are well conversant with the tender and competent enough to take decisions on technical and financial matters at the time of opening of bids.

5.2 CLARIFICATIONS REGARDING THE SUBMITTED TENDERS

5.2.1 During the process of evaluation of the tender, IITM may at its discretion ask the tenderer for a clarification of his tender. The request for clarification and the response shall be in writing.

5.2.2 Any query regarding any clarification required by IITM on the information submitted by the tenderer, must be replied by the tenderer within the following time schedule.

- Email/ fax query should be replied by Email/ fax within 3 days.
- Query by letter must be replied by letter within 7 days of receipt of the letter.

SECTION 6  
AWARD OF CONTRACT

6.1 EVALUATION CRITERION

The whole work shall be on turn key basis. The tender shall be finalise on the basis of lowest total cost of Solar water heater system including guarantee and AMC as offered by tenderer in his financial bid.

6.2 NOTIFICATION OF AWARD

Prior to the expiry of validity period of offer, IITM will notify the successful tenderer by registered Letter/Email/ Fax that his tender has been accepted.

6.3 AWARD OF WORK CONTRACT

6.3.1 Before placement of supply\work orders, an agreement shall be signed between IITM and the lowest successful tenderer\bidder. Complete work shall ordinarily be awarded to the lowest tenderer only. The denial of the lowest bidder to undertake the whole work shall be treated as breach of contract and IITM may forfeit EMD/ Security amount submitted by him.

6.4 RIGHT TO VARY QUANTITIES

IITM may increase or decrease the quantity mentioned in the tender notice at the time of award of contract and to split the work among various tenderers without any change in price or other terms and conditions & without assigning any reason thereof.

6.5 RIGHT TO ACCEPT/REJECT ANY OR ALL TENDERS .

IITM reserves all the rights to reject any or all the tenders, accept any tender in total or in part.

6.6 EXPENSES OF AGREEMENT

The respective suppliers shall pay all the expenses of stamp duties and other requirements for signing the agreement with IITM.

# PART-3

## GENERAL CONDITIONS OF CONTRACT

## GENERAL CONDITIONS OF CONTRACT

### 1. DEFINITIONS

In the deed of contract unless the context otherwise requires:-

1.1 'IITM' shall mean The Director or his representative of 'Indian Institute of Tropical Meteorology. Govt. of India with its Head office at Pune Campus, at Pune and shall also include its successors in interest and assignees. The 'Contractor' shall mean the Firm/ Person (whose tender has been accepted by IITM) and shall include his legal representatives, successor in interest and assignees.

1.2 The contract shall be for Design, Supply, Installation & Commissioning of Solar Water Heater of 2000LPD (X 3 Units) with Heat pumps Capacity at Student hostel building roof top of IITM including 5 Years Warrantee/ Guarantee & AMC and shall be valid till the completion of all related works

1.3 The contractor shall be deemed to have carefully examined all the papers, drawings etc. attach to the contract deed. If he shall have any doubt as the meaning of any portion or any condition(s) /specifications etc.

### 2. COMPLETION PERIOD

2.1 The completion period of the entire work shall be **Two (02)** months after issue of work order. The work shall have to be completed within time and shall be binding on the contractor. In case of any urgency, the contractor may be asked to complete the work even earlier and contractor will be bound to fulfill the requirements.

2.2 In case the contractor fails to execute the said work or related obligations within stipulated time, IITM will be at liberty to get the work executed from the open market at the risk and cost of the contractor, without calling any tender and without any notice to the contractor. Any additional cost incurred by IITM during such execution of the work shall be recovered from the contractor.

2.3 If the cost of executing the work as aforesaid shall exceed the balance payments due to the contractor and the contractor fails to make good the 'additional cost', IITM may recover it from the contractor's pending claims against any work in IITM or in any other lawful manner. All risks & responsibilities related to the execution of the said work and fulfillment of related obligations directly or indirectly connected with the performance of the contract shall be the sole responsibility of contractor.

2.4 The calculation of aforesaid 'additional cost' will be finalized by the IITM at its sole discretion. The contractor shall have no right to challenge the mode or amount relating to calculation at any forum. For completion of the work

through any other agency, in case some changes are required in terms and conditions of the contract; the contractor shall not have any right to challenge the decision of IITM.

3. LIQUIDATED DAMAGES

If the contractor fails to perform the work within the time periods specified in the work orders or within the extended time period if any, IITM shall without prejudice to its other remedies under the contract, deduct from the contract price as liquidated damage, a sum equivalent to 1% of the price of the un-performed work/ services for each week of delay until actual completion of work, up to a maximum deduction of 10%. Once the maximum is reached, IITM may consider termination of the contract.

4. PERFORMANCE SECURITY

The amount of the performance security as mentioned in the 'Payment Terms' shall be forfeited in case of breach of any term or condition by the contractor. If required, the other balance payments may also be forfeited, depending on the liabilities on the part of the contractor.

5. FORCE MAJEURE

5.1 Notwithstanding the provisions of clauses contained in this deed; the contractor shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to force majeure circumstances.

5.2 For purpose of this clause, "Force majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by the Director of IITM, Pune & his decision shall be final and binding on the contractor and all other concerned.

5.3 If a force majeure situation arises, the contractor shall notify IITM in writing promptly (at the most within 5 days from the date such situation arises). After examining the cases IITM shall decide and grant suitable addition time for the completion of the work.

5.4 For other justified cases also, not covered under force majeure conditions, IITM may consider the request of contractor and additional time for completion of work may be granted.

## 6. QUALITY,WARRANTEE/GUARANTEE AND ANNUAL MAINTENANCE

6.1 The contractor shall warranty the Solar Water heater as per applicable standards of quality. Anything to be furnished shall be new, free from all defects and faults in material and workmanship. The manufacture shall be in accordance with the specified technical parameters and should be of the highest grade and consistent with established and generally accepted standards for material. It shall be in full conformity with the drawing or samples if any and shall operate properly if operable.

6.2 After installation of the Solar Water heater at site, the contractor shall ensure satisfactory performance of the equipment's for a period of time as specified in the scope of work.

6.3 The contractor shall rectify defects developed in the Systems within Warrantee/Guarantee/AMC period promptly. In case the contractor does not rectify the defects within 2 days of the receipt of complaint, IITM may restore the System in working condition on contractor's expenses.

6.4 Frequent and unjustified delays in rectifying defects may lead to cancellation of the contract, recovery of losses and imposing of additional penalty. In such circumstance IITM shall have the full liberty to recover the losses/penalty from the contractor pending claims, security deposit or in other law full manner. The amount of losses/penalty shall be decided by Director, IITM, Pune and will be binding on the contractor.

6.5 The performance of the system installed & commissioned shall be warranted by the bidders for a minimum period of five years from the date of Design supply/commissioning of systems at site. This Warranty shall be for a minimum period of five year from the date of commissioning for the complete system.

6.6 The five year warranty period from the date of commissioning, for which no service/ maintenance charges will be separately paid to the contractor. Warranty Card for the same period must be issued by the Manufacturer/supplier to the beneficiary.

6.7 Preventive maintenance during warranty period, periodical checking of performance of system and servicing and replacement of any spares. All test to check the performance ( Capacity as well as temperature of hot water) of the system shall be carried out.

6.8 If the bidder fails to ensure 100% working status during warranty period, penalty will be imposed @ 1% of the cost of the system per week or part thereof for the first instance subject to a maximum limit of 10% of the same value and later on the maintenance shall be done at supplier's risk & cost and security deposit & EMD will also be forfeited.

## 7. STANDARDS

The goods supplied and works executed under this contract shall confirm to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be applicable.

## 8. INSPECTION AND TESTS

8.1 IITM or its duly authorized representatives shall have the right to inspect and /or to test the goods to confirm their quality according to the contract and shall have access to the contractor's works premises and the power to inspect and examine the materials and workmanship of the Solar Water heater at all reasonable times during their manufacture.

8.2 The contractor shall inform IITM through a written notice regarding any material being ready for testing at least 7 days in advance. The conditions of contract and/or the technical specifications shall specify what inspections and tests shall be conducted by IITM. All the arrangements of necessary equipments and expenses for such tests shall be on the contractor's account excluding the expenses of the inspector.

8.3 IITM's Inspector, unless the witnessing of the tests is virtually waived off, will inspect and attend such test within 7 days from the date on which the equipments are notified as being ready for test /inspection.

8.4 IITM shall within 7 days, give written notice to the contractor, about any objection regarding the quality of the system. The contractor shall either make the necessary modifications to remove the cause of such objection or shall clarify the objections in writing if modifications are not necessary to comply with the contract.

8.5 After satisfactory testing of the systems during inspection, IITM's Inspector shall issue of dispatch clearance for the supply of material at site.

8.6 The inspection by IITM and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the contractor in respect of the agreed and specified quality. Nothing in clause 8 shall in any way relieve the contractor from any Warrantee/ Guarantee or other obligations under this contract.

## 9. SPARE PARTS

The contractor shall make arrangement to maintain a sufficient stock of essential spares and consumable spare parts to ensure proper maintenance of the system promptly. 5% of total number of tubes should be provided at the time of supply of equipment to IITM as spares.

10. PACKING FORWARDING

10.1 Contractors, wherever applicable shall properly pack and crate all materials in such a manner as to protect them from deterioration and damage during transportation. The contractor shall be responsible for all damage due to improper packing.

10.2 The contractor shall inform the project Engineer of IITM, Pune regarding the probable date of each shipment of materials from his works.

11. TRANSPORTATION

The contractor is required to deliver the goods at various locations as defined in the scope of work.

12. DEMURRAGE WHARFAGE, ETC

All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be on the account of the contractor.

13. INSURANCE

13.1 The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition; transportation and the expenses shall be borne by the contractor.

13.2 The contractor shall arrange security & storage of their materials to avoid any theft or losses during execution of work. IITM will, in no case, shall be responsible for providing any security/storage for the materials & equipments lying at site during execution of work. Under the contract contractor shall be responsible for any loss or damage until the systems/ supplies are taken over.

14. LIABILITY FOR ACCIDENTS AND DAMAGES

During the Warrantee/ Guarantee period, the contractor shall assume all responsibilities for direct damages covering all type of accident, injury or property damage caused by manufacturing defects or faulty installation on the systems.

15. DUTIES AND TAXES

The rates/ prices mentioned in the price-schedule include all applicable taxes, duties & surcharges. No additional payments shall be made by IITM on this account.

16. PATENT RIGHT AND ROYALTIES:

The contractor shall indemnify IITM against all third party claims of infringement of patent, royalties, trademark or industrial design rights arising from use of the goods supplied/ installed by the contractor or any part thereof.



17. RIGHT TO VARY QUANTITIES

IITM reserves all the rights to increase or decrease the quantity of goods mentioned in the contract, at the time of placement of orders without any change in price or other terms and conditions.

18. LOCAL CONDITIONS

18.1 It will be imperative on contractor to have full information of all local conditions and factors which may have any effect on the execution of the works. The contractor shall be deemed to have collected all the relevant information regarding the proposed place of works/ site, its local environment, approach road and connectivity etc. and be well acquainted with actual working and other prevailing conditions.

18.2 If required, the contractor should pre-visit the site before starting the work. IITM shall not entertain any request of contractor for clarifications related to such local conditions and shall bear no responsibility in this regard.

19. TOOLS & TACKLES

The contractor shall provide all necessary tools & tackles for proper execution of work and operation/ maintenance of systems after installation. IITM shall in no way, responsible for supply of any tools & tackles.

20. TERMINATION FOR DEFAULT

IITM without prejudice to any other remedy for breach of contract, by written notice of default sent to the contractor, may terminate the contract in whole or in part:

21.1 If the contractor fails to deliver the Services within the allocated time period(s).

21.2 If the contractor fails to perform any other obligation(s) under the contract. However in the event of termination of the contract in part, the contractor shall continue performance of the contract to the extent not terminated.

21. TERMINATION FOR INSOLVENCY

IITM may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor if he becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to IITM.

22. TERMINATION FOR CONVENIENCE

IITM may vide a written notice sent to the supplier; terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of IITM.

23. COMPLETION OF WORK

On completion of the work, the contractor shall submit 3 sets of "As Executed Report" to IITM which will include photographs, drawings and as executed reports of various systems containing details of installation from the point of view of future maintenance of the installed systems. This report must also contain all Technical Details, Detailed Circuit Diagram of the components of all the system.

24. OTHERS CONDITIONS

24.1 The contractor shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of IITM in writing.

24.2 IITM may at any time either stop the work all together or reduce or cut it down by sending notice in writing to the contractor. If the work is stopped all together, the contractor will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. The decision of IITM regarding assessment of such expenses shall be final and binding on the contractor. If the work is cut down, the contractor will not be paid any compensation what to ever for the loss of profit which he might have made if he had been allowed to complete all the work awarded to him.

24.3 Fulfillment of various requirements, not particularly mentioned in the specifications or drawings but necessary for satisfactory and proper completion of the work shall be the contractor's responsibility within the prices offered by him. But additional works beyond the scope and essence of this contract shall be carried out by the contractor as extra items. For such works the rates shall be decided by IITM and shall be binding on the contractor.

24.4 Work carried out without IITM's approval shall not be accepted and IITM shall have rights to get it removed and to recover the cost so incurred from the contractor.

24.5 The contractor shall not display the photographs of the work and not take advantage through publicity of the work without written permission of IITM.

24.6 The contractor shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

24.7 IITM will not be bound by any Power of Attorney granted/ issued by the contractor or by any change in the composition of the firm made during or subsequent to the execution of the contract. However recognition to such Power of Attorney and change (if any) may be given by IITM after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

## 25. STATUTORY ACTS

25.1 All legal formalities/clearances are to be obtained by the contractor regarding the execution of the said work.

25.2 In respect of all labour directly or indirectly employed on the work by the contractor, the contractor shall comply with all the provisions of hiring the contract labour and rules of State/ Central Government or any other authority framed from time to time. The rules and other statutory obligations in this regard will be deemed to be the part of this contract.

25.3 The contractor shall comply with the all the Acts & rules and regulations, laws and by- laws framed by State/ Central Government/ Organization in whose premises the work has to be done. IITM shall have no liabilities in this regard.

## 26. APPLICABLE LAW

The contract shall only be interpreted under Indian laws. The station of IITM Headquarter Pune shall have exclusive jurisdiction in all matters arising under this contract.

## 27. RESOLUTION OF DISPUTES/ARBITRATION

27.1 The purchaser and the supplier shall make every effort to resolve any disagreement or dispute arising between them under or in connection with the contract, amicably by direct informal negotiation.

27.2 If after thirty (30) days from the commencement of such informal negotiations, the purchasers and the supplier are unable to resolve a contract dispute amicably; the matter may be referred in writing by either party to the sole arbitration of the Director of IITM Pune or to a person nominated by him.

27.3 Subject to aforesaid, the arbitration and conciliation Act 1996 and rules made thereafter or any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings. Under this cause, the 'Award' given by the Arbitrator shall be binding on all the parties. The contractor shall not have right to challenge the Award.

27.4 Work under the contract shall if reasonably possible, continue during the arbitration proceedings and dues if any, payable by IITM to the contractor with respect to the work not in dispute shall not ordinarily be withheld on account of such proceedings unless it becomes necessary to withhold the same.

27.5 The proceedings, if any, in relation to the arbitration referred to above, shall be held by the arbitrator aforesaid at Pune and courts at Pune shall have jurisdiction to entertain and decide the matter involved.

27.6 No decision given by the officer in charge of the work under this contract, in accordance with the forgoing provisions shall disqualify him as being called as a witness or giving evidence before the arbitrators on any matter whatsoever relevant to the dispute of difference referred to the arbitrator as aforesaid.

27.7 In case during the Arbitration proceedings the appointed Arbitrator becomes unable, due to any reason whatsoever, to continue with the proceedings or making of Award; it will be prerogative of IITM to nominate any other person as sole Arbitrator instead thereof. The contractor shall not raise any objection to such appointment having been made by IITM.

27.8 The High court of Pune or Courts subordinate at Pune to it as the case may be, shall alone have jurisdictions to the exclusion of all other courts.

## 28. NOTICES

29.1 Any notice to be given by one party to the other, pursuant to the contract shall be sent in writing. A notice shall be effective when delivered or from the effective date mentioned in the notice, whichever is later.

29.2 Notices, statements and other communications sent by IITM to the contractor at his specified addresses through registered post/ email/ fax shall be deemed to be delivered to the contractor.

## 29. APPLICATION

These general conditions shall apply to the extent that provisions in other parts of the contract do not supersede them.

## 30. PAYMENT TERMS

30.1 70% against delivery of material at site against invoice\Delivery challan

30.2 20% of contact value against satisfactory installation and commissioning of system

### Note

b) Balance 10% of the contract value shall be paid after completion of guarantee period (Five year's Warrantee/Guarantee ). This amount shall be released on submission of bank guarantee valid for 63 months from the date of erection and commissioning of systems at site.

1. No price escalation due to any reason (including any change in the applicable taxes, duties, surcharge etc.) shall be considered by IITM during the validity/ extended validity of the contract agreement

2. All the bank guarantees should be made from nationalized bank.

# PART-4

## GENERAL TECHNICAL SPECIFICATIONS

## TECHNICAL SPECIFICATION

### Technical specification for Solar Water Heating System

<b>Technical specification for Solar Water Heating System</b>		
<b>Sr No</b>	<b>Description</b>	<b>Specs systems</b>
	<b>Total system capacity required</b>	<b>6000</b>
	<b>EVACUVATED TUBE MANIFOLD</b>	
<b>1</b>	<b>ETC Tubes</b>	<b>Tripple Layer</b>
1.1	Capacity of each manifold	500
1.2	Nos of Manifolds required	12
1.3	Size of Each manifold (L x W ) in mm	4000x 2000 MM
1.4	No of Tube in each manifold	50
1.5	Glass material	Borosilicate glass 3.3
1.6	Outer tube diameter in mm	58
1.7	Inner tube diameter in mm	47
1.8	Tube Length in mm	1800
1.9	Coating Material	Aluminium nitrite ( Triple layer)
<b>2</b>	<b>Manifold</b>	
2.1	Manifold Inner MOC	SS 304
2.2	Manifold Inner material Thickness in mm	0.6
2.3	Manifold Outer MOC	Powder coated steel
2.4	Manifold Outer material Thickness in mm	0.45 of GI power coated
<b>3</b>	<b>Insulation</b>	
3.1	Material of insulation	PUF
3.2	Density of insulation	45 KG/M3
3.4	Thickness of insulation	50 mm
<b>4</b>	<b>Solar Tank</b>	
4.1	Tank capacity (net Volume without ETC tube & Manifold)	2000Liter
4.2	Nos of tanks proposed	3
4.3	Net capacity of all Tanks	6000
<b>5</b>	<b>Solar Inner tank</b>	
5.1	MOC	GI 4mm in case of hard water
5.2	Thickness of main shell in mm	2
5.3	Thickness of Cone /Dish	2
5.4	Type of Welding	MAG ( Automated)
5.5	Pressure bearing capacity	1.00 Bar Working Pressure & 1.5 bar testing Pressure
<b>6</b>	<b>Solar Outer cladding /cover</b>	
6.1	MOC	aluminum

6.2	Make	Standard(Jindal or equivalent)
6.3	Thickness of main shell in mm	22SWG
6.4	Thickness of Cone /Dish	22 SWG
<b>7</b>	<b>Ports</b>	
7.1	Nos. of ports	IO Port : 2 Nos,(1.5") System Connector : 2(1") No, EB port : 2nos.(1.25") , 1" BSP 2ports
7.2	MOC of ports	GI in case of hard water
7.3	Size of ports	IO Port : 1.5Inch, System Connector : 1 Inch, EB port : 1.25 inch
<b>8</b>	<b>Insulation</b>	
8.1	Material of insulation	Rockwool
8.3	Thickness of insulation	100mm
<b>11</b>	<b>Support Stand</b>	
11.1	MOC of support stand	MS with painted Asian or Burger
11.2	Type & Size of support stand	75mmx40mm C channel
<b>9</b>	<b>Piping (meter)</b>	
9.1	Pipe Type	Composit
9.3	Pipe make	Kitec
9.4	Pipe Fittings	Kitec Composit
9.5	Pipe Size in mm 2532	170m RMT
9.6	Pipe Size in mm 2025	90m RMT
9.7	Ball valve & Accessories	Make -Zoloto/Honeywell/OR
9.8	Ball valve 32mm	6
9.9	Ball valve 25mm	12
9.10	NRV 32mm	6
<b>10</b>	<b>control Valves</b>	
10.1	make	Honeywell ,Motorised,Danfoss
10.2	size	1.25" 230v
10.3	quantity	3 nos
<b>11</b>	<b>Reverse Circulation system</b>	
11.1	Pipe size in mm 1216	Kitec composite
11.2	Reverse Circulation Pumping system with control panel of temp. & time based	Wilo Pr. Pump or Grundfos for 50 m head suitable for hot water application 3 set
12	<b>Heat Pump 6.5KW capacity</b>	<b>3 sets</b>

**Recommended makes:** Bosch, Tata BP, Honeywell, Videocon, Racold or equivalent brands.

### **Heat Pump Specification:**

1. Delta T (temperature) required in single circulation is 30 degree centigrade
2. 6.5KW heating capacity of three units with not less than 5 star rated energy efficiency
3. All automation required to keep water temperature around 55 degree centigrade in tank
4. Refrigerant R410A
5. With pump make may be Wilo or Grundfos
6. COP 3.8 or better
7. Power supply 220-240V\1PH\50Hz
8. Sound level 65dba or less
9. Working temperature -5 deg to 40 deg. Centigrade
10. Outdoor air source type
11. Warranty 5 years with all spares + 3 year AMC including all spares.

Recommended Make : Unitech, Air Tech or equivalent brand

### **STANDARDS**

The details of these Standards which contain minimum performance requirements along with test methods are as follows:

#### **1. REFERENCES**

IS 6392:1971 Steel pipe flanges

IS 6911: 1992 Stainless steel plate, sheet and strip –specification

IS/ ISO 9488:1999 Solar energy – Vocabulary

MNRE STD 01:2013 All glass (glass in glass) evacuated solar collector tubes

MNRE STD 02:2013 Storage water tank for all glass (glass in glass) evacuated tubes solar collector

DOC: MED 04(1050) F Test procedure for thermo syphon type domestic solar hot water heating systems (under print) -Specification, Part 5 -Test methods.

#### **2. MNRE Specifications for Test Procedure**

Test procedure for Thermo-siphon-type domestic solar Hot Water Systems Available on MNRE website [www.mnre.gov.in](http://www.mnre.gov.in) should be followed.

#### **14. OPERATION MANUAL**

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar Water Heater and all necessary details of the system related to proper operation and maintenance. Details of electrical wiring and circuit/ connection diagrams of the installed system will also be provided with the manual.



# PART-5

## SCOPE OF WORK

PART 5  
SCOPE OF WORK

The work shall include Design, Fabrication, Manufacturing, Supply, Installation, Testing & Commissioning of 2000LPD X 3 units with Heat pumps capacity Solar Water Heater on turnkey basis in accordance with the technical specifications, at Student hostel in IMD Colony Campus Pashan in Dist.-Pune . Student hostel building is stilt floor + 10 floors with 3 wings. Down comer work of pipeline was done by civil contractor for all wings.

Sl	System Details	Qty.	Proposed of Use
1	<b>EVACUVATED TUBE type Solar water heater system with heat Pump capacity 2000LPD</b>	3 Nos.	For Hot water Domestic requirments

Scope of works shall include:

- A. All works required for proper installation of Solar Water Heater shall be done by the contractor. The entire work shall be performed on turnkey basis. All the works related to the proper installation and functioning of the systems shall have to be carried out by the contractor in the prices offered by him.
- B. Civil works /welding works related to foundation of mounting structure of the system shall be done by the contractor.
- C. All the required hot and cold water pipe lines shall be executed by the contractor for which additional payments shall be made at the rates offered by him.
- D. The complete Solar Wolar Heater shall be warranted by the contractor against any manufacturing/ design/ installation defects for a minimum period of 5 years from the date of installation and commissioning.
- E. The contractor will be responsible for satisfactory performance, operation & regular maintenance of the Solar Water Heaters for a period of 5 years from the date of commissioning. All the necessary arrangements required in this regard during 5 year's period shall be made by the contractor.
- F. Rectification of all the defects developed in the Solar Water Heater during Warrantee/Guarantee period 5 years shall have to be done by the contractor promptly, at the most within 2 days from the date of receipt of compliant.
- G. AMC will include rectification /replacement of all the defective and consumable components/items including batteries. During Warrantee/Guarantee and AMC period, all the arrangements for keeping all the Solar Water Heater functional shall be the sole responsibility of the contractor.
- H. After completion of the proposed works, clearances of all temporary works/ materials shall be the sole responsibility of the contractor and this shall

be removed immediate after the requirement of such temporary work is completed.

I. General Aesthetics & cleanliness in regard to the installation of various systems shall have to be maintained.

J. Supply and Installation of Display board showing all technical information of Solar Water Heater. The matter written on these boards shall be finalized with IITM,Pune .

K. All the non functional parts/ materials/ items replaced during the Warrantee/Guarantee and AMC period shall be the property of the contractor.

L. The contractor will conduct on-site training of the purchaser's/user's personnel regarding the assembly, start-up, operation, maintenance and repairs of the Solar Water Heater.

M. During Warrantee/Guarantee and AMC period, the contractor shall have to submit annual performance report from user agency regarding functionality of the system.

# PART-6

## TECHNICAL BID

**PART –6**  
**TECHNICAL BID**

**DETAILS OF EXPERIENCE**

Please fill in information About Solar Water Heater installed in last three years.

Details	Year		
	(11-12) Installed	(12-13) Installed	(13-14) Installed
Solar Water Heater ( LPD)			
Total value of the work			

(Signature of Tenderer)  
Seal

**NOTE:** 1. Above details without copies of work orders, completion certificates and satisfactory performance reports from the users will not be considered.

2. **Bar chart** for 2 months required and bidder has to submit along with tender in technical bid.

BOQ to be filed by contractor for compliance

Sr.No	Item Description	Unit	Quantity	Remark Yes\No
I	<b>SOLAR WATER HEATING SYSTEM</b>			
1	Supplying , erecting, testing and commissioning of solar water heating system complete with Borosilicate glass 3.3 glass material ETC tubes tripple layer aluminum nitrite coating material collector with SS 304 manifold , the manifold inner material Thickness 0.6 mm Outer material Thickness 0.45 mm and Powder coated steel for outer manifold with suitable flow rate and capacity of insulated pre heater storage solar tank in SS304 construction with minimum 2 mm thick shell and cone and outer, Outer cladding /cove is aluminum , thickness of cone and shell 22 SWG,. The tank shall be insulated with minimum 100mm thick rock wool material, minimum density of 48 kg/cum. support stand shall be Galvanized MS channel and SS ports etc completed the tank shall be provided with inlet and out let connection to the storage tank and back to the collector, The storage tank shall be suitable for 1.00 Bar Working Pressure & 1.5 bar testing Pressure. The system as required by Clint / consultant with following capacity.			
	Note: (quoted price shall be inclusive of piping between storage tanks to solar panels)			
	Capacity : 2000 Ltrs/ day	Lot	3	
2	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-ALPE) Composite Pressure Pipes conforming to IS - 15450, U.V. stabilized with carbon black having thermal stability for hot & cold water supply, capable to withstand temperature up to 80 0C, including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc., with clamps at 1.00 meter spacing. This includes testing of joints complete as per direction of the Engineer in charge.			
	Internal work –Exposed on wall			
a	Pipe size in mm 1216 mm OD) (Reverse Circulation system)	met er	375	

b		met er	90	
	Pipe Size in mm 2025 (25 mm OD)			
c		met er	170	
	Pipe Size in mm 2532 (32 mm OD)			
3	Providing and fixing <b>ball valve</b> (brass) of approved quality with all Accessories , high or low pressure, etc complete			
a		Nos	12	
	25 mm nominal bore			
b		Nos	6	
	32 mm nominal bore			
4	Providing and fixing <b>Non return valve (NRV) of approved quality</b> with all Accessories , etc complete			
		Nos	6	
	32 mm nominal bore			
5	Providing and fixing <b>control Valves</b> of approved quality with all Accessories, etc complete			
		Nos	3	
	size 1.25" 230v			
6	Supplying, erecting, testing and commissioning of <b>Reverse Circulation Pump</b> with necessary cable, control panel of temperature, based and time based , starter /on off switches. With all accessories etc, complete.	Nos	3	
7	Supplying, erecting, testing and commissioning of <b>Heat Pump</b> with necessary cable, control panel, starter /on off switches with auto start and off timer (6.00am to 10am) including all accessories etc, complete.	Nos	3	

# PART-7

## FINANCIAL BID



**PART-7 (FINANCIAL BID)**

**TenderNo.ENG\MECH\SHB\2015-16\01**

Name of work Design, Supply, Installation & Commissioning of Solar Water Heater of Various Capacities at Student Hostel Building IMD Colony Pashan , Dist.-Pune including 5 Year's Warrantee/ Guarantee and AMC for 3 Years after Warrantee Period (As defined in the tender document)

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, IITM PUNE												
PROPOSED CONSTRUCTION OF HOSTEL FOR STUDENTS AT IMD COLONY, PASHAN, PUNE												
BILL OF QUANTITIES												
SOLAR WATER HEATING SYSTEM WORKS												
Sr.No	Item Description	Unit	Quantity	Supply				Installation				
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						ED	VAT					
<b>I SOLAR WATER HEATING SYSTEM</b>												
1	Supplying , erecting, testing and commissioning of solar water heating system complete with Borosilicate glass 3.3 glass material ETC tubes tripple layer aluminum nitrite coating material collector with SS 304 manifold , the manifold inner material Thickness 0.6 mm Outer material Thickness 0.45 mm and Powder coated steel for outer manifold with suitable flow rate and capacity of insulated pre heater storage solar tank in SS304 construction with minimum 2 mm thick shell and cone and outer, Outer cladding /cove is aluminium , thickness of cone and shell 22 SWG., The tank shall be insulated with minimum 100mm thick rock wool material, minimum density of 48 kg/cum. support stand shall be Galvanized MS channel and SS ports etc completed the tank shall be provided with inlet and out let connection to the storage tank and back to the collector, The storage tank shall be suitable for 1.00 Bar Working Pressure & 1.5 bar testing Pressure. The system as required by Clint / consultant with following capacity.											
Note: (quoted price shall be inclusive of piping between storage tanks to solar panels)												
	Capacity : 2000 ltrs/ day	Lot	3								-	
2	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-ALPE) Composite Pressure Pipes conforming to IS - 15450, U.V. stabilized with carbon black having thermal stability for hot & cold water supply, capable to withstand temperature up to 80 OC, including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc., with clamps at 1.00 meter spacing. This includes testing of joints complete as per direction of the Engineer in charge.											
Internal work –Exposed on wall												
a	Pipe size in mm 1216 mm OD) (Reverse Circulation system)	meter	375							-	-	
b	Pipe Size in mm 2025 (25 mm OD)	meter	90							-	-	
c	Pipe Size in mm 2532 (32 mm OD)	meter	170							-	-	
3	Providing and fixing ball valve (brass) of approved qualitywith all Accessories , high or low pressure, etc complete											
a	25 mm nominal bore	Nos	12							-	-	
b	32 mm nominal bore	Nos	6							-	-	
4	Providing and fixing Non return valve (NRV) of approved qualitywith all Accessories , etc complete											
	32 mm nominal bore	Nos	6									
5	Providing and fixing control Valves of approved qualitywith all Accessories, etc complete											
	size 1.25" 230v	Nos	3									
6	Supplying, erecting, testing and commissioning of Reverse Circulation Pump with necessary cable, control panel of temperature, based and time based , starter /on off switches. With all accessories etc, complete.	Nos	3									
7	Supplying, erecting, testing and commissioning of Heat Pump with necessary cable, control panel, starter /on off switches with auto start and off timer (6.00am to 10am) including all accessories etc, complete.	Nos	3									
<b>Total : Rs.</b>												

B). Cost of AMC of Solar Water Heating Systems after warranty

12. First year of AMC with necessary spares and all taxes : Rs.  
13. Second year of AMC with necessary spares and all taxes : Rs.  
14. Third year of AMC with necessary spares and all taxes : Rs.

Over all Amount	Amount (in figures)	Amount (in words)
Grand Total (A) + (B)		

Note: The tender shall be finalized on the basis of Grand Total (A) + (B)

Certified that:

- 1- The per meter rates for pipe line include of all required accessories such as NRV, gatevalves/nipple/tees/bends/taps etc as defined in technical specifications of this tender document & are in accordance with the specifications & various terms & conditions mentioned in the tender document.
- 2- The above cost of pipe line is being given for the specified tentative lengths, for the purpose of comparison of offers. However the work shall be done for actual required length at site on the above rates of pipeline.
- 3- The rates are inclusive of all taxes and duties what so ever.
- 4- AMC will be awarded only after successful completion of 5 year with satisfactory services.

(Signature of Tenderer)  
Seal

FORMAT FOR BANK GUARANTEE FOR –EARNEST MONEY DEPOSIT

This deed of Guarantee made on ..... day of Month & Year by Name & Address of the bank (hereinafter called the 'GUARANTOR') on the one part, on behalf of M/s Name & address of the Firm (hereinafter called the 'Firm') ) in favour of Director, Indian Institute of Tropical Meteorology,(IITM), Pune (hereinafter called 'IITM') on the other part, on the following terms and conditions.

Whereas the FIRM is submitting its tender for Name of the work and this guarantee is being made for the purpose of submission of Earnest money deposit with the tender document.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep IITM indemnified up to the extent of Rs.....during the validity of this bank guarantee and authorize IITM to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and IITM with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by IITM during the currency period of this guarantee. The GUARANTOR shall pay IITM immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of IITM in writing.

Notwithstanding anything contained herein-

- 1 Our liability under this bank guarantee shall not exceed Rs. ....
- 2 This Bank guarantee shall be valid up to .....
- 3 We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before .....

Sealed with the common seal of the bank on this .....day of Month and Year

Witness

- 1..... (Signature and seal of the bank)
- 2.....

FORMAT FOR BANK GUARANTEE FOR –SECURITY MONEY DEPOSIT

This deed of Guarantee made on ..... day of Month & Year by Name & Address of the bank (hereinafter called the 'GUARANTOR') on the one part, on behalf of M/s Name & address of the Firm (hereinafter called the 'FIRM') ) in favour of Director, Indian Institute of Tropical Meteorology,(IITM), Pune (hereinafter called 'IITM') on the other part, on the following terms and conditions.

Whereas the FIRM is entering into a agreement with IITM for the 'Name of work'..... and this guarantee is being made for the purpose of submission of Security money required to be deposited at the time of signing of the agreement between IITM and FIRM.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep IITM indemnified up to the extent of Rs.....during the validity of this bank guarantee and authorize IITM to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and IITM with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by IITM during the currency period of this guarantee. The GUARANTOR shall pay IITM immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of IITM in writing.

Notwithstanding anything contained herein

- Our liability under this bank guarantee shall not exceed Rs. ....
- This Bank guarantee shall be valid up to .....
- We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before .....

Sealed with the common seal of the bank on this .....day of Month and Year

Witness

1.....  
bank)

(Signature and seal of the

2.....

FORMAT FOR BANK GUARANTEE FOR -PERFORMANCE SECURITY

This deed of Guarantee made on ..... day of Month&Year by Name &Address of the bank (hereinafter called the 'GUARANTOR') on the one part, on behalf of M/s Name &address of the Firm (hereinafter called the 'FIRM') ) in favour of Director, Indian Institute of Tropical Meteorology,(IITM), Pune (hereinafter called 'IITM') on the other part, on the following terms and conditions.

Whereas the FIRM has executed the 'Name of Work'..... under Agreement No..... between FIRM & IITM and whereas in pursuance of the terms of the agreement, IITM having agreed to pay the amount for performance security against bank guarantee, this guarantee is being made for the purpose of release of the performance security amount.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep IITM indemnified up to the extent of Rs.....during the validity of this bank guarantee and authorize IITM to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and IITM with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by IITM during the currency period of this guarantee. The GUARANTOR shall pay IITM immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of IITM in writing.  
Notwithstanding anything contained herein-

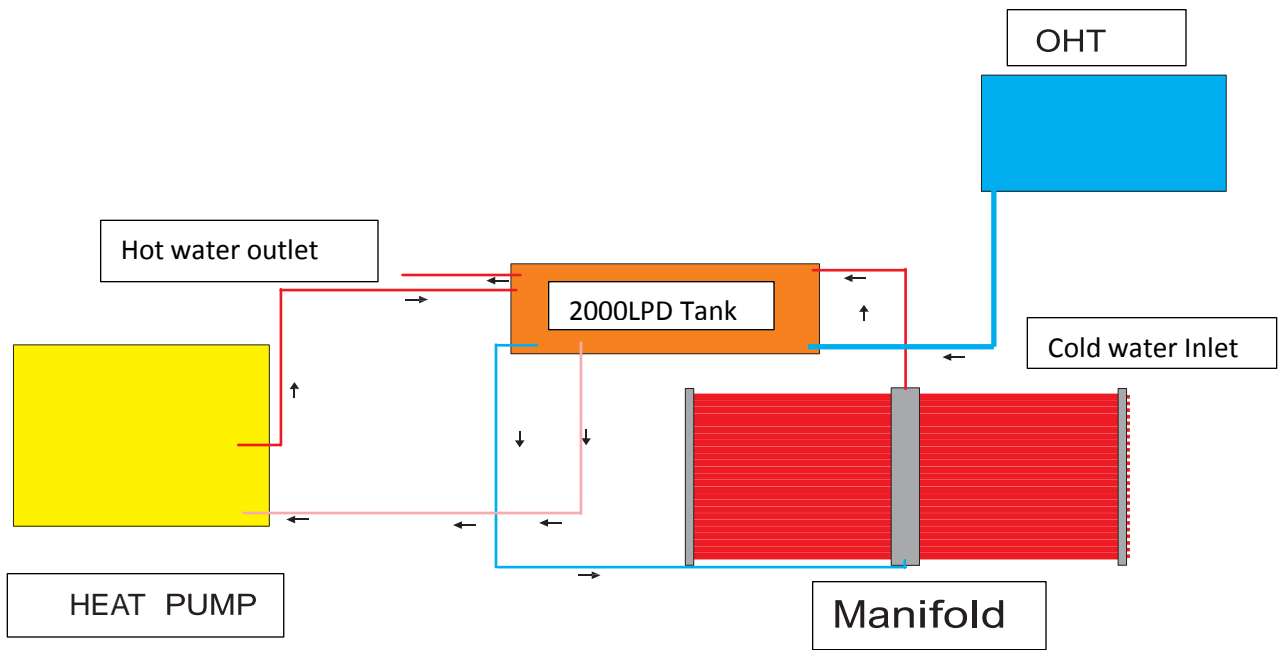
- 1 Our liability under this bank guarantee shall not exceed Rs. ....
- 2 This Bank guarantee shall be valid up to .....
- 3 We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before .....

Sealed with the common seal of the bank on this .....day of MonthandYear

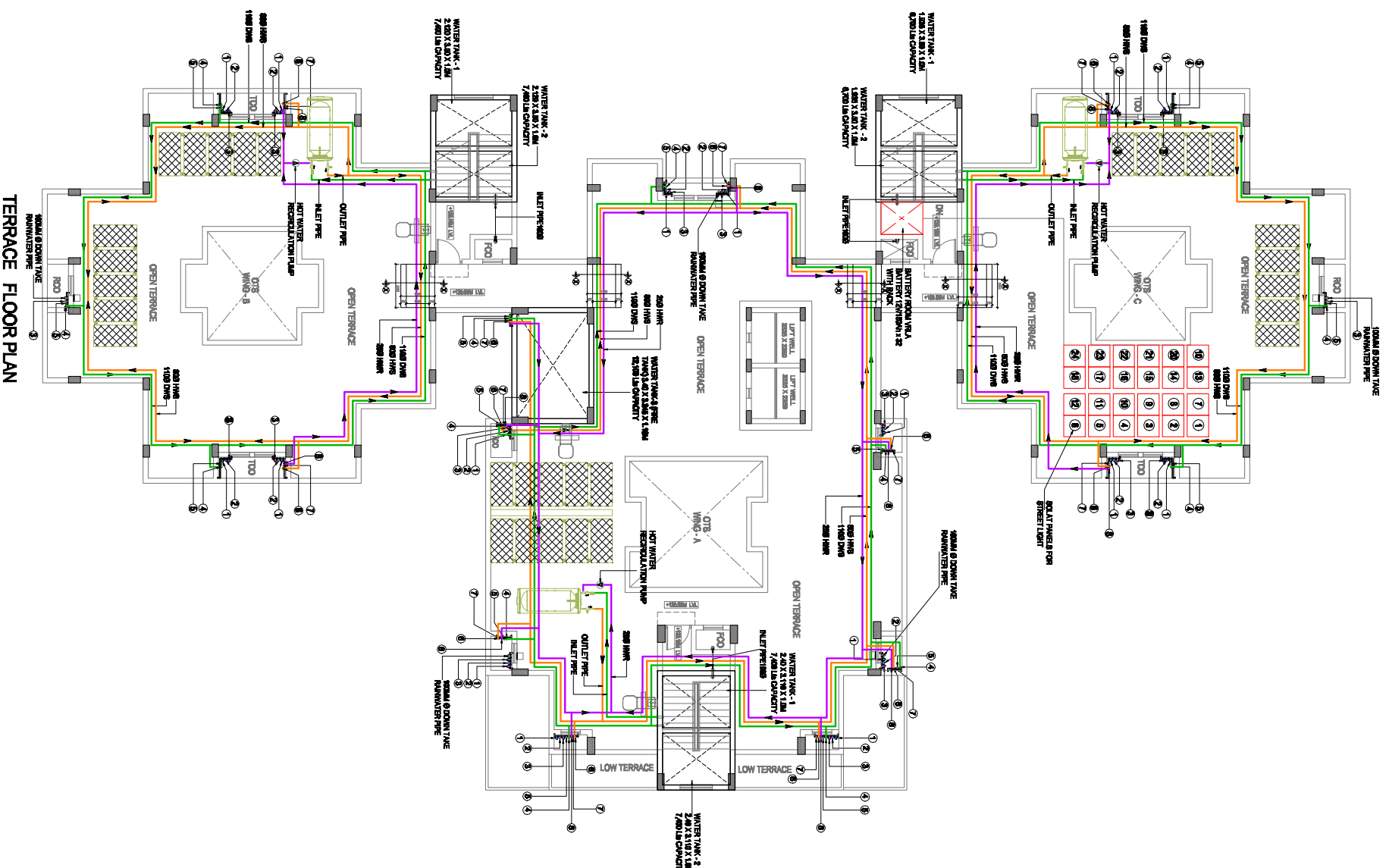
Witness

1..... (Signature and seal of the bank)

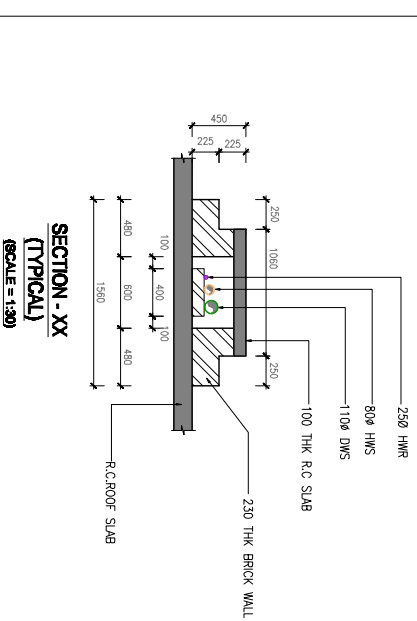
2.....



Systematic Layout of solar water heat system



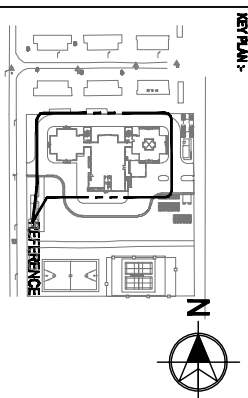
TERRACE FLOOR PLAN



SECTION - XX  
(TYPICAL)  
(SCALE = 1:30)

- LEGEND:-**
- ① SOIL PIPE 1100
  - ② SOIL VENT PIPE 750
  - ③ WASTE PIPE 1100
  - ④ DOMESTIC WATER SUPPLY DISTRIBUTION (Main)
  - ⑤ DOMESTIC WATER SUPPLY BRANCH
  - ⑥ HOT WATER SUPPLY DISTRIBUTION (Main)
  - ⑦ HOT WATER SUPPLY BRANCH
  - ⑧ HOT WATER RETURN PIPE

**NOTE:-**  
DOMESTIC AND HOT WATER SUPPLY VERTICAL PIPE SIZING SHALL BE REFER WATER SUPPLY LAYOUT DRG NO - ITM-P-HST-SP00-01-168043



REFERENCE

**LEGEND:**

DWS	DOMESTIC WATER SUPPLY PIPE - (C/W)
HMR	HOT WATER SUPPLY PIPE - (C/W)
HWR	HOT WATER RETURN PIPE - (C/W)

- GENERAL NOTES FOR WATER SUPPLY**
- ALL WATERSUPPLY PIPE RUN AT ABOVE FINISH LEVEL. FURTHER DROP TO FITTURE AT 400MM ABOVE FINISHED LEVEL.
  - ALL WATERSUPPLY LINES CONCEALED IN THE WALL.
  - DOMESTIC AND FLUSHING WATERSUPPLY PIPE SHALL BE C/PVC WITH SOLVENT CEMENT JOINT. THE CLASS OF PIPE UP TO 50MM SDR -11 AND ABOVE 50MM SCHEDULE-80.
  - ISOLATION VALVE SHALL BE PROVIDED FOR ALL THE DISTRIBUTION MAIN IN THE BUILDING.
  - BALL VALVE SHALL BE UP TO 50MM AND BUTTERFLY VALVE ABOVE 50MM.
  - MINOR MODIFICATION SHALL BE MADE SURE SITE CONDITION WITHOUT CHANGING THE DIMENSION AND SLOPE.

REV.	ISSUED FOR CONSTRUCTION	DATE	BY	CHKD.
R1	ISSUED FOR CONSTRUCTION	22.08.15	MJC	TSS

**CLIENT:**  
INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE.

**PROJECT:**  
PROPOSED STUDENTS HOSTEL AT IMD COLONY, PUNE

**DRAWING TITLE:**  
STUDENTS HOSTEL BLOCK TERRACE FLOOR PLAN WATER SUPPLY LAYOUT

**SCALE:** 1:175  
DATE: 22.08.15  
DRAWN: M.Dhoreji  
CHKD: T.Srinivasan

**DRAWING NO:** ITM-P-HST-SP02-R1-01-168525

**REV:** R1

**Design | Interiors | Engineering | Construction management**  
**C.R. Narayana Rao (Consultants) Private Limited**  
No. 10, Kalyandurga Nagar, Mysore, Chennai-600 004, India.  
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**ITM-HOSTEL**

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Construction work shall be executed only as per the latest revision drawing. Once a revision drawing is issued, the validity of the previous revision drawing stands cancelled and as such construction shall not be carried out as per superseded revisions. The Contractor is expected to maintain a register of Drawing Register, listing drawing number & revision number, date, from whom received, date received, number of copies received, details of transmittal from the issuer & any other relevant details to be added from time to time.

All previous revision issues immediately upon receipt of a new revision and no superseded drawing shall remain in the site of works except in the Contractor's archives for record and reference purposes only.

While drafting superseded drawing, the Contractor is expected to stamp all previously issued drawings / prints appropriately, mentioning the date and revision number of the new revision on account of which the previous revision is archived.

The Contractor shall allow the representative of Client / P.M.C / Architect to inspect Contractor's archives for ensuring compliance.

Any work carried out by the Contractor using a superseded drawing after the issue of a new revision is liable for rejection and reinstatement as per new revision at Contractor's risk and cost without any entitlement to extension of time.