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 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\SHB\2015-16\02	Fire Protection System works for Student\ Trainee Hostel building, IITM & IMD at IMD colony campus, Pashan, Pune-411008	1000/-	18/12/2015	05/01/2016	05/01/2016 at 12:30 Hrs	05/01/2016 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
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

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

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

PROPOSED FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE

Tender No. ENGG\MECH\SHB\2015-16\02

भारतीय उष्णदेशीय मौसम विज्ञान संस्थान
(पृथ्वी विज्ञान मंत्रालय, भारत सरकार का एक स्वायत्त संस्थान)
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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

TENDER FOR FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE FOR INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

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: FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE

Tender documents can be downloaded 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.1,000-/, (Rupees One Thousand only) [Non Refundable] by demand draft drawn in the favour of Director, IITM Pune.

Date of issue of tender documents : 18.12.2015

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

Last date of receipt of Tender at IITM, Pune: 05.01.2016 at 12.30 Hrs.
Opening of Tenders (Technical Bids only) : 05.01.2016 at 15.00 Hrs.

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

Mechanical Engineer
For Director
Email:ravindra@tropmet.res.in

TENDER FOR FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE FOR INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

1) Invitation for Bid
2) Instruction to bidders
3) Form of bid, Qualification information, Letter of Acceptance
4) Conditions of contract
5) Special conditions of contract
6) List of approved makes
7) Health and safety
8) Contract data
9) Form of Securities
10) Technical Specifications
11) Bill of Quantities
12) Tender Drawings

TENDER FOR FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE FOR INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

Tender No. **: ENGG\MECH\SHB\2015-16\02**

Name of work : FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE

Tender document fee: Rs.1,000-/ (Rupees OneThousand only) [Non Refundable] by Demand draft drawn in the favour of Director, IITM, Pune-411008.

Date of issue of tender documents : 18.12.2015

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

Last date of receipt of Tender at IITM, Pune: 05.01.2016 at 12.30 Hrs

Opening of Tenders (Technical Bids only) : 05.01.2016 at 15.00 Hrs

Estimated Cost: Rs. : 53.00 Lakhs

COMPLETION PERIOD : 3 Months from the date of L.O.I

Earnest Money Deposit (EMD) Rs.2.65 Lakhs by demand draft (DD) or Bank Guarantee (BG) from Nationalize/Schedule Bank in favour of The Director IITM, Pashan, Pune-411008.

IITM

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
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Dr. Homi Bhabha Road, Pashan, Pune - 411 008. India

ESSO

(SECTION-1)

INVITATION FOR BID

NOTICE INVITING TENDER FOR FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE FOR INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008

TWO COVER SYSTEM

Tender Notice No. :ENGG\MECH\SHB\2015-16\02

1 Indian Institute of Tropical Meteorology, Pune, Maharashtra is setting up Fire protection system works at Students Hostel Building at IMD colony, Pashan, Pune. Director Indian Institute of Tropical Meteorology, Pune Invites bid for the said work under the **Two Cover System** item rates composite Tender from the Contractors, who are eligible as per the minimum requirements defined in clause 2 & 3 below and who are on approved list of the appropriate class of PSUs or Government department

i) Average annual financial turnover during the last 3 years ending 31st March 2015 of the previous should be at least 30% of the estimated cost.

ii) Experience of having successfully completed similar works during last 5 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 60% of the estimated cost.

Or

One similar completed work costing not less than the amount equal to 80% of the estimated cost.

The bidder should produce Banker's Solvency Certificate or Revenue Solvency Certificate of The value of Rs. 16 LAKHS (Rs.Sixteen Lakh only). Solvency Certificate must have been obtained not earlier than 1st Apr 2015.

The successful bidder shall ensure that, the direct subcontractors engaged in the works, Complies with all conditions as specified in the Agreement between the employer and the Successful bidder.

1. Salient Features

Name of Work	FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE FOR INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008
Period of Completion	3 months from the date of LOI

2. Tender documents can be purchased from the Mechanical Engineering office, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL post, Pashan, Pune – 411008. INDIA

A	Cost of Tender Documents (Non – Refundable)	Rs.1,000/-(Rupees One Thousand only) by Demand Draft drawn from any Nationalized or Scheduled Banks In India payable at Pune in favors of Director, Indian Institute of Tropical Meteorology, Dr. Homi BhabhaRoad, NCL post, Pashan Pune – 411008. INDIA
B	Period of Issue of Tender Documents	Date of issue of tender documents :18.12.2015
C	Earnest Money Deposit (EMD)	**2.65 lakhs** By Demand Draft, drawn from any Nationalized Or Scheduled Banks in India payable at Pune in favor Of The Director, IITM (or) By Irrevocable Bank Guarantee from any Nationalized or Scheduled Banks in India.
D	Last date for submission of bids	Bids to be submitted on or before **05.01.2016** at **12.30 Hrs at —DISPATCH SECTION** Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL post, Pashan Pune – 411008. INDIA
E	Opening of Technical bid	Opening of Tenders (Technical Bids only) : **05.01.2016 at 15.00** Hrs.

*Interested bidder can download the tender document from website http://www.tropmet.res.in/Tenders . The Director, Indian Institute of Tropical Meteorology, reserves the right to accept/reject Anyone /all the tenders without assigning any reason thereof.

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

Definitions
Terms which are defined in the Contract Data are not defined in the Conditions of Contract But keep their defined meanings. Capital initials are used to identify defined terms.

The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to Resolve disputes in the first instance. The name of the Adjudicator is defined in the Contract Data.

Bill of Quantities means the priced and completed **Bill of Quantities** forming part of the Bid.

Compensation Events are those defined in Clause 44 of Conditions of Contract (Vol-II).

The **Completion Date** is the date of completion of the Works as certified by the Architect and IITM Authorities in accordance with Sub Clause 55.1 of Conditions of Contract (Vol-II).

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.3 of Conditions of Contract (Vol-II).

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body who‘s Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; **months** are calendar months.

A Defect is any part of the Works not completed in accordance with the Contract.

Defects Liability Period is the period named in the Contract Data and calculated from the Date of handing over of site to the Institute.

The **Employer** is the party who will employ the Contractor to carry out the Works. In this Contract The Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL post, Pashan, Pune, is the Employer

The **Architect** shall mean the Consultants engaged by the Employer.
Contractor's Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

Drawings mean the employer's drawings of the works included in the contract and any Variations to such drawings given by an Architect.

Party means either employer or contractor.

Country means the country in which the site is located.

Employer's Liabilities means those mentioned in sub clause 11.1 of Conditions of Contract (Vol-II).

Force Majeure means an exceptional events or circumstance which is beyond a Party's control, which such Party could not reasonably have provided against before entering in to the contract; which, having arisen, such party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other party.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall Complete the Works. The Intended Completion Date is specified in the Contract Data. H **Materials** are all supplies, including consumables, used by the contractor for incorporation
in the Works.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Architect.

The **Start Date** it is the date from the date of receipt of handing over of site by IITM, Pune to commence the work (work order)

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to
carry out a part of the work in the Contract which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor which are needed for supply and installation of FPS Works.

A **Variation** is an instruction given by the Architect with the approval of IITM authorities which varies the Works.
The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

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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

(SECTION-2)

INSTRUCTIONS TO BIDDERS

A. General

1. Scope of Bid

1.1 On behalf of INDIAN INSTITUTE OF TROPICAL METEOROLOGY. The Director, INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008, India invites bids for Fire Protection system for Students Hostel building at IMD colony Pashan, Pune for Indian Institute of Tropical Meteorology, (IITM), Pune-411008.

1.2 The successful bidder will be expected to complete the works by the intended Completion date specified in the Contract data.

2. **Source of Fund:** INDIAN INSTITUTE OF TROPICAL METEOROLOGY,PUNE

3. Eligible Bidders`

3.1 This Invitation for Bids is open to all reputed well established and experienced Contractors, who satisfy the qualifying criteria stipulated in Clause 4

3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is not associated, nor has been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation of tender documents, supervision and certification of the works, and any of its affiliates, shall not be eligible to bid.

3.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by Government in accordance with sub-clause 34.1.

4 Qualification of the Bidder

4.1 All bidders shall be provided in Section 2 Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

4.2 Since the Employer has not undertaken pre-qualification of potential bidders, all bidders shall include the following information and documents with their bids in Section 2

(a) Copies of original documents defining the constitution or legal status, place of registration and principal place of business.

(b) Written power of attorney of the signatory of the Bid to commit the Bidder.

(c) Total monetary value of supply and installation work performed for each of the last five years.

(d) Experience in works of a similar nature and size for each of the last five years, and details of works under way or contractually committed; and clients who may be contacted for further information on those contracts;

(e) Major items of installation equipment proposed to carry out the Contract;

(f) Qualifications and experience of key site management and technical personnel proposed for the Contract;

(g) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past three years;

(h) Evidence of adequacy of working capital for this contract (access to line (s) of credit and availability of other financial resources);

(i) Information regarding any litigation or arbitration resulting from contracts executed by the Bidder in the last three years or currently under execution. The information shall include the names of the parties concerned, the disputed amount, cause of litigation, and matter in dispute;

(j) Proposals for subcontracting components of the Works which in aggregate add to more than 20 percent of the Bid Price (for each, the qualifications and experience of the identified sub-contractor in the relevant field should be annexed; no vertical splitting of work for sub-contracting is acceptable); and

(k) The proposed methodology and program of Installation including Environmental Management Plan backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

4.3 Bids from Joint ventures are not acceptable‘.

4.4 A. To qualify for award of the contract, each bidder in its name should have in the last three years i.e., 2012-13, 2013-14 and 2014-2015.

(a) The BIDDER should be a well-established and reputed Fire Protection System Contractor, registered as a legal entity in India for a minimum period of five years, and having experience of minimum five years in FPS works

(b) The BIDDER should have an annual turnover of Rs.16.00Lakh (Rupees Sixteen Lakh only) in all kinds of Fire Protection System works during past three years (2012-13, 2013-14, and 2014-15) of the financial years, ending on 31st March 2015

4.4 B The bidder should produce Banker‘s Solvency Certificate or Revenue Solvency Certificate of the value of **Rs. 16 Lakhs** . Solvency Certificate must have been obtained not earlier than 1st April 2015.

4.4 C. **Each bidder should further demonstrate**:

(a) Availability (either owned or leased or by procurement) of the following key and critical equipment for this work:

NOTE: Based on the studies, carried out by the Engineer the minimum suggested major equipment to attain the completion of works in accordance with the prescribed Installation schedule are shown in the below list. The bidders should, however, undertake their own studies and furnish with their bid, with addition if any a detailed planning and methodology supported with layout and necessary drawings and calculations (detailed) as stated in clause 4.2 (k) above to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment

shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

(b) availability for this work of 1 Project Manager with not less than FIVE years' experience in Fire Protection of similar Mechanical, Electrical and allied works and other key personnel with adequate experience as required. The bidders are to produce organization chart for the execution of the project with responsibilities included.

4.5 Sub-contractors experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria except to the extent stated in 4.4 (a) (e to h) above.

4.6 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or

- Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or

- participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

4.7 Each bidder shall submit only one bid for one contract.

5. **Cost of Bidding**

5.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

6. **Site visit**

6.1 The Bidder, at the Bidder‘s own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for Fire Protection Work. The costs of visiting the Site shall be at the Bidder's own expense.

Bidding Documents

7. **Content of Bidding Documents**

7.1 The set of bidding documents comprises the documents listed in the table below and addenda issued in accordance with Clause 10:

1) Invitation for Bid

2) Instruction to bidders

3) Form of bid, Qualification information, Letter of Acceptance

4) Conditions of contract

5) Special conditions of contract

6) Technical Specifications

7) List of approved makes

8) Health and safety

9) Contract data

10) Form of Securities

11) Bill of Quantities

12) Tender Drawings

7.2 Bidding documents supplied should be completed and returned with the bid.

8. **Clarification of Bidding Documents**

8.1 A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing at the employers address indicated in invitation to Bid.

8.2 -Deleted-

9. **Amendment of Bidding Documents**

9.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addendum which will be available on IITM website only.

9.2 Any addendum thus issued shall be part of the bidding documents .Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.

9.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer shall extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 19.2 below.

10. **Language of the Bid**

10.1 All documents relating to the bid shall be in English language only.

11. **Documents comprising the Bid**

11.1 The bid submitted by the bidder shall comprise the following:

A. **Technical Bid. (Envelope One)**

(a) Technical Bid documents, tender drawings duly signed on each page with company seal.

(b) EMD, Tender fee;

(c) Bill of Quantities **without any price** duly signed on each page with company seal for compliance.

(d) Qualification Information Form Documents and company profile.

(e) Copy of Addendum if any duly signed on each page with company seal.

(f) Bar chart of 3 month to complete the work and handing over of completed work site to the IITM.

And any other materials required be completing and submitting by bidders in accordance with these instructions. The documents listed under Sections 2, 4 and 7 of Sub-Clause 8.1 shall be filled in without exception.

Note: EMD paid by successful bidder will be adjusted in performance security. Only difference in amount of performance security is to be deposited by successful bidder to institute.

B. **Commercial Bid. (Envelope Two)**

Commercial Quote hard copy and one soft copy in the form of C.D/Pen drive.

12. **Bid Prices**

12.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill Quantities submitted by the Bidder.

12.2 The bidder shall fill in rates and prices and line item total (both in figures and words) for all items of the Works described in the **Bill of Quantities** along with total bid price (both in figures and words). Items for which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed Covered by the other rates and prices in the Bill of Quantities. Corrections, if any, Shall be made by crossing out, initialing, dating and rewriting.

12.3 **The bidder shall quote the rates as per prescribed price bid format, the basic cost and taxes shall be shown separately.** All duties, taxes, and other levies payable by the contractor under the contract, or for any other cause shall be quoted as per prescribed price bid format.

12.4 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract.

12.5 The FPS work shall include guarantee for 2 years for after commissioning and handing over of the system to IITM which include preventive maintenance.

13. **Currencies of Bid and Payment**

13.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees.

14. **Bid Validity**

14.1 Bids shall remain valid for a period not less than **180 days** after the deadline date for bid submission specified in Clause 19. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

14.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable.

14.3 Bid evaluation will be based on the terms & condition of tender and bid prices.

15. **Bid Security**

15.1 The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This bid security shall be in favor of the **DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008. and may be in one of the following forms:

16.1 Demand draft/Bank Guarantee from nationalized / scheduled bank located in India in favor of. **DIRECTOR** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR. HOMI BHABA ROAD, PASHAN, PUNE-411008**.**

16.2 Bank guarantees issued as surety for the bid shall be valid minimum period of 4 months.

16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as nonresponsive.

16.4 The Bid Security of unsuccessful bidders will be returned after award of work to successful bidder.

16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid Security may be forfeited

(a) If the Bidder withdraws the Bid after Bid opening during the period of Bid validity;

(b) If the Bidder does not accept the correction of the Bid Price, pursuant to Clause 26; or

(c) In the case of a successful Bidder, if the Bidder fails within the specified time limit to

(i) sign the Agreement; or

(ii) furnish the required Performance Security.

17. **Format and Signing of Bid**

17.1 The Bidder shall prepare one original and one copy of the documents comprising the bid as described in Clause 12 of these Instructions to Bidders, bound with the volume containing the Form of Bid, and clearly marked "**ORIGINAL**" as appropriate. In the event of discrepancy between them, the original shall prevail.

17.2 The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder, pursuant to Sub-Clauses 4.2. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid.

17.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

Submission of Bids

18. **Sealing and Marking of Bids**

18.1 The bid shall be two cover / two part Bid system.

Part-I Technical Bid (Volume-1) and Conditions of contract, Contract Data and Forms of Securities (Volume-2) and Part-II Price Bid. Both the parts each in separate sealed cover duly marked Part-I (Cover-1) and Part-II (Cover-2). Both the sealed covers have to be submitted together in a common third sealed cover.

Part-I: - Technical Bid (Volume-1) and Conditions of contract, Contract Data and Forms of Securities (Volume-2).

Part-II:-The Price bid along with Bill of Quantities (Volume-3), Drawings (Volume-4) and Technical specifications (Volume-5).

18.2 **The inner and outer envelopes / cover shall**

(a) be addressed to the Employer at the following address:

The Director,
Indian Institute of Tropical Meteorology,
Dr. Homi Bhabha Road, NCL post, Pashan, Pune– 411008. INDIA
so as to reach on or before 05.01.2016 at 12.30 Hours.

(b) bear the following identification:

- Bid for .....[name of contract]
- Bid Reference No.....[insert number]
- DO NOT OPEN BEFORE. 05.01.2016 at 3.00Hrs time and date for bid opening, per Clause 22]

18.3 In addition to the identification required in Sub-Clause 18.2, the inner envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared late, pursuant to Clause 20.

18.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

18.5 Bidder will be supplied with one set of Bid Document the Bidder should treat this as **Original.**

19. **Deadline for Submission of the Bids**

19.1 Bids must be received by the Employer at the address specified above. In the event of the specified date for the submission of bids declared a holiday for the Employer, the Bids will be received upto the appointed time on the next working day.

19.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

20. **Late Bids**

20.1 Any Bid received by the Employer after the deadline prescribed in Clause 20 will not be considered.

21. **Modification and Withdrawal of Bids**

21.1 Bidders may modify or withdraw their bids by giving notice in writing before the deadline prescribed in Clause 19.

21.2 Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 17 & 18, with the outer and inner envelopes additionally marked "**MODIFICATION**" or "**WITHDRAWAL**", as appropriate.

21.3 No bid may be modified after the deadline for submission of Bids.

21.4 Withdrawal or modification of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 may result in the forfeiture of the Bid security pursuant to Clause 16

21.5 Bidders may offer discounts to, or modify the prices of their Bids only by submitting Bid modifications in accordance with this clause, or included in the original Bid submission.

Bid Opening and Evaluation

22. **Bid Opening**

22.1 The Employer will open all the technical Bids received (except those received late), including modifications made pursuant to Clause 21, in the presence of the Bidders or their representatives, the technical bids will be opened on **05.01.2016 at 15.00 hours** at Indian Institute of Tropical Metrology, Dr.Homi Bhaba Road, Pashan, Pune-411008.

In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

22.2 Envelopes marked "**WITHDRAWAL**" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 21 shall not be opened. Subsequently all envelopes marked —Modification‖ shall be opened and the submissions therein read out in appropriate detail.

22.3 The Bidders' names, the Bid prices, the total amount of Bid, any discounts, Bid modifications and withdrawals, the presence or absence of Bid security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. No bid shall be rejected at bid opening except for the late bids pursuant to Clause 20. Bids [and modifications] sent pursuant to Clause 21 that are not opened and read out at bid opening will not be considered for further evaluation regardless of the circumstances.

22.4 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 22.3.

23. **Process to Be Confidential**

23.1 Information relating to the examination, clarification, evaluation, and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

24. **Clarification of Bids**

24.1 To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of the unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 26.

24.2 Subject to sub-clause 24.1, no Bidder shall contact the Employer on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

24.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders‘ bid.

25. **Examination of Bids and Determination of Responsiveness**

25.1 Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3; and 4.4 A, (b) has been properly signed; (c) is

accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding documents (e)Technical bid scrutiny, presentation and site visit.

25.2 A substantially responsive Bid is one which confirms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

25.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

25.4 During the process of technical evaluation if any query raised by IITM\Consultant shall be clarified by the bidder within 3 days by email or hard copy.

26. Correction of Errors

26.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

(a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and

(b) where there is a discrepancy between the unit and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

26.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub-Clause 16.6 (b).

27. Evaluation and Comparison of Bids

27.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 25

27.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

(a) making any correction for errors pursuant to Clause 26; or

(b) making an appropriate adjustments for any other acceptable variations, deviations; and

(c) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 21.5.

27.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.

27.4 The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of Contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

27.5 If the Bid of the successful Bidder is seriously unbalanced in relation to the Architect's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the execution methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 31 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

Award of Contract

28. **Award Criteria**

28.1 Subject to Clause 29, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 3, and (b) qualified in accordance with the provisions of Clause 4.

29. **Employer's Right to Accept any Bid and to Reject any or all Bids**

29.1 Notwithstanding Clause 28, the Employer reserves the right to accept or reject any Bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

30. **Notification of Award and Signing of Agreement**

30.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

30.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 31.

30.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the successful within 28 days following the notification of award along with the Letter of Acceptance.

30.4 Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

31. **Performance Security**

31.1 Within 7 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent to 5% of the Contract price plus additional security for unbalanced Bids in accordance with Clause 27.5 of ITB and Clause 52 of Conditions of Contract:

- a bank guarantee in the form given in Section 8; or Demand draft/Bank Guarantee, from nationalized / scheduled bank located in India in favour of **DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008**.**

31.2 Failure of the successful bidder to comply with the requirements of sub-clause 31.1 shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security and any such other remedy the Employer may take under the contract, and the Employer may resort to awarding the contract to the next ranked bidder.

32. **Advance Payment and Security**

32.1 No advance payment will be made.

32.2 Running payment will be made towards completed work up to value not less than of Rs.15 lakhs and above. Total number of bill not more than 4 numbers upto final bill.

33. **Corrupt or Fraudulent Practices**

33.1 The Employer requires that Bidders, Suppliers, Contractors, and Consultants observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the Employer

(a) Defines, for the purposes of this provision, the terms set forth below as follows:

(i) — Corrupt practicell means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;

(ii) — Fraudulent practicell means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;

(iii) — Collusive practicell means a scheme or arrangement between two or more Bidders, with or without the knowledge of the employer, designed to establish bid prices at artificial, non competitive levels.

(iv) — Coercive practicell means harming or threatening to harm, directly or indirectly persons or their property to influence their participation in the procurement process or affect the execution of a contract;

(b) Will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;

(c) will have the right to require that a provision be included in Bidding Documents and in contracts requiring Bidders, Suppliers, Contractors to permit the Employer to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Employer

34. Penalty Clause:

If the work is not completed within the aforesaid period the contractor shall pay liquidated damage of 1% per week subject to a maximum 10% of value of work order in case of delays beyond the accepted completion period for reasons solely attributed to him.

35. Extra Items

The rate of extra items shall be worked out in accordance with the following rules.

a. The rates for the extra items shall be derived from the rate of an appropriate item of the similar class for which the rate has already been accepted, where same can be directly derived.

b. The contractor shall be bound to carry out any extra items of work as per site requirement. The rate for extra items shall be derived from the rate already quoted. Where the items are not specified in the BOQ the rate shall be worked out at cost of material+labour+ Taxes +10% overheads, wastage and transportation & profit.

c. Wherever applicable the basic rate difference in materials (mentioned in tender) shall be payable plus-minus without any profits, overheads etc., on said rate difference.

d. Variation and Non- Tendered items, if any, shall be carried out under specific written instruction by architects and prior sanction by the Institute. Sanction for all extra items shall be sought by the contractor within seven days from the occurrence such necessity. Maximum limit of non tender items/extra items shall be 10% of the ordered value.

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
IITM
ESSO

(SECTION-3)

FORMS OF BID, QUALIFICATION INFORMATION AND LETTER OF ACCEPTANCE

TABLE OF FORMS:

- **CONTRACTOR'S BID**
- **QUALIFICATION INFORMATION**
- **LETTER OF ACCEPTANCE**
- **NOTICE TO PROCEED WITH THE WORK**
- **AGREEMENT FORM**

CONTRACTORS BID

NAME OF WORK: TENDER FOR FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE

To : **THE DIRECTOR,**
Address : **INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008.**

Sir,

Having examined the bidding documents including addendum, we offer to execute the Works Described above in accordance with the Conditions of Contract, Specifications, Drawings and Bill of Quantities accompanying this Bid.

This Bid and your written acceptance of it shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any Bid you receive.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

We also undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely —Prevention of Corruption Act 1988‖.

We hereby confirm that this Bid complies with the Eligibility, Bid Validity and Bid Security required by the Bidding documents.

Yours faithfully,

Authorized Signature:
Name & Title of Signatory:
Name of Bidder:

Qualification Information

The information to be filled in by the Bidder in the following pages will be used for purposes of qualification criteria as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract.

To be eligible for Qualification, BIDDERS shall provide evidence to suitability of their meeting the Criteria indicated in Clause 4.0 and furnish details giving their full bio-data, organizational set up, technical experience, availability of plant and equipments etc. to establish their capacity and competence, and possession of adequate resources to carry out the contracts effectively and for this, the BIDS submitted shall include the following:

1. Letter of tender ; as in Appendix A

2. **For Individual Bidders**

2.1 Constitution or legal status of Bidder
Information shall be submitted in the **Statement –A attached** separately

2.2 Total value of FPS works 2012-2013 _____
works executed and payments received in the 2013-2014 _____
last three years (in Rs. Crores) 2014-2015 _____

2.3.1 Year wise work performed as prime contractor (in the same name) on works of a similar nature over the last five years. Information shall be submitted in the **Statement –D attached** separately

- Attach certificate(s) from the Employer
- Immediately preceding the financial year in which bids are received.
- Attach certificate from Chartered Accountant.

2.4 Information on Bid Capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) Existing commitments and on-going works:
Information shall be submitted in the **Statement–E** attached separately.

(B) Works for which bids already submitted but yet to be finalized. Information to be given in the statement given below.

Description of Work (1)	**Place& State (2)**	**Name and Address of Employer* (3)**	**Estimated value of works (Rs. Crores) (4)**	**Stipulated period of completion (5)**	**Date when decision is expected (6)**	**Remarks if any (7)**

***** Attach certificate(s) from the Employer.

2.5 Information of Contractor's Equipment, available Plant and Machinery is essential for carrying out the Works. The Bidder should list all the information requested below.

Refer also to Sub Clause 4.2 (d) of the Instructions to Bidders.
Information shall be submitted in the **Statement –F** attached separately

2.6 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer also to Sub Clause 4.2 (e) and 4.4 (B) (b) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract. Information shall be submitted in the **Statement –B** attached separately

2.7 Proposed subcontracts and firms involved. [Refer ITB Clause 4.2 (j)] Information to be given in the statement given below.

Sr. No.	Sections of the works	Value of Sub-contractor	Sub-contractor (name and address)	Experience in similar work

2.8 Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports (in case of companies/corporation), etc Information shall be submitted in the **Statement –C** attached separately

2.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List them below and attach copies of support documents [sample format attached].

2.10. Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.

2.11 Information on litigation history in which the Bidder is involved. Information shall be submitted in the **Statement –H attached** separately

2.12 Details of termination of contract by previous client if any in last five years Information shall be submitted in the **Statement –G attached** separately

2.13 Statement of compliance under the requirements of Sub Clause 3.2 of the Instructions to Bidders.

2.14 Proposed work method and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents. [Refer ITB Clause 4.1 and 4.2 (k)].

3.0 Additional Requirements

3.1 Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.

3.2 Certificates in support of suitability, technical know-how and capability for having successfully completed the works during the last five years under Annexure A‘.

3.3 A detailed description on the approach, methodology to the Installation technology proposed, schedule and type of equipment to be used, names and responsibilities and detailed qualifications of the proposed subcontractors, if any etc.

3.4. A detailed description of any method of approach specially devised by the contractor to speed up the work.

3.5 Current solvency certificate or letter of support from the BIDDER'S Banker for an amount of Rs 30 Lakhs, not older than three months from the last date of submission of Bid.

3.6 Details of cases of having been barred or black listed from the Bidding process, if any. Black-listed Agencies'Tender is liable to be rejected.

3.7 The tender should be submitted in English only. Supporting documents such as Annual accounts, Balance sheets, Client's certifications, Testimonials etc., if attached in any other language, should be translated in English.

4.0 The BIDDERS must provide evidence of having adequate experience. This should include supporting certificates of reports relating to financial, technical and other capability of the BIDDERS. At least three certificates to be produced.

5.0 The BIDDERS for qualification shall provide all facilities to **THE DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008**.** for verification of the information / details furnished by them and also for inspection of their works carried out / in progress if requested.

6.0 **Nature of Submissions:**

6.1. The submissions from the BIDDER in response to the Clause-4 shall be in the form of a statement signed by the authorized signatory on behalf of the BIDDER, who shall hold the Power of Attorney to sign such documents. The Power of Attorney documents shall also be attached.

Note **: The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 or his authorized representatives reserves the right to verify any part of the information furnished by the BIDDER in the above statements without any prejudice to the terms and conditions of the Contract. The BIDDER is deemed to have given his consent for the right of verification by the **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 or his authorised representative when the BIDDER submits the above statements. If it comes to the notice of **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 that the BIDDER has suppressed any information or furnished misleading or inaccurate information, or in case whether any litigation currently in progress at the time of submission of BIDS lead to the decree by the Court of Law against the BIDDER, the **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 reserves the right to nullify the Qualification and to disqualify the BIDDER. If such information becomes available to **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 prior to issue of Letter of Intent, the BIDDER will be disqualified and will not be considered for award of work. If such information comes to the knowledge of the Client after the award of work, **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY,DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 of the BIDDER and such action would include but not Ltd to forfeiture of all deposits, guarantees etc. furnished in any form. **The DIRECTOR,** INDIAN INSTITUTE OF

TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 will also reserve the right to recover any Retention Money, Mobilization Advance paid by invoking of Bank Guarantees submitted, including invoking of the Performance Bond.

The entire work executed upto the stage of such termination including materials procured and delivered at site will be taken over by **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 and adjusted towards any payment due, as per contract conditions **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 can thereafter arrange for a bidding process for completion of the balance works, for which any additional financial burden to be met by **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 will also be recovered from the Contractor, who has been terminated, without prejudice to the other rights of **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 under the Contract.

7.0 PARTICULAR ATTENTION

7.1 Employer reserves its rights to disqualify any BIDDER if:

- The BIDDERS have made untrue or false representation in the forms, statements and attachments submitted in proof of the qualification and requirements ;

- The BIDDER‘s track record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion or financial failures etc.

- The BIDDERS have suits lodged / admitted / pending against it in a Court of Law for proceedings for declaration of Bankruptcy, etc or any suit which challenges the basic existence of the BIDDER and substantially influences its capacity to implement the **Works** satisfactorily. Information on the legal matters is to be submitted as per Statement-I.

- The BIDDER shall unconditionally waive all rights in respect of challenging in any court any matter concerning this BID evaluation and award / termination of Contract. The aggrieved bidder can approach **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 for their appeal against any order.

8.0 FINAL DECISION MAKING AUTHORITY

8.1 The main criteria for the selection of Contractors for the work will be on the consideration of their ability to fulfill their obligations under the contract. And competence to do good quality works within specified time schedule resources committed evaluation of technical submission etc. in addition to consideration given for competitiveness of bid price.

8.2 Selection for qualification will be made by a Tender evaluation committee on the basis of competence of individual bidders.

8.3 **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 reserves the right to accept or reject any Bid or to reduce the scope/ cancel the exercise without having to incur any cost or to assign any reason for its decision to any party whatsoever and **The DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 decision on qualifying contractors will be final and binding on all the contractors.

APPENDIX – A

LETTER OF TENDER

Date:

To
The Director,
Indian Institute of Tropical Metrology,
Dr.Homi Bhaba Road,
Pashan, Pune.

Sub: SUBMISSION OF BID FOR, FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE

Sir,

1 I / We ……..having examined the details given in the Invitation to BIDDERS, we hereby submit the following information and relevant documents.

a I/We hereby certify that all the statements, information and data provided in the enclosed Statements A to G. and accompanying sheets are true and correct to the best of my / our knowledge.

b I/We …….. have read the instructions appended with the qualification document and I/We understand that any contract made between ourselves and **THE DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 on the basis of the information given by me / us is liable to be cancelled if any false information is detected at a later date.

c I/We ……..have also no objection if enquiries are made on all the projects and works listed by me / us in the accompanying sheets or any other enquiry on the information furnished herewith in the accompanying sheets.

d I/We have furnished all information and details as asked for and have no further pertinent information to provide.

e I/We submit the requisite certified solvency certificate and authorize **THE DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 to approach the Bank issuing the solvency certificate to verify the correctness thereof. I/We also authorize **THE DIRECTOR,** INDIAN INSTITUTE OF TROPICALMETROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 to approach individuals, employers, companies, and corporation to verify my / our competency and general reputation.

f I/We submit in Annexure ‘A‘ the certificates in support of my / our suitability, technical know-how and capability for having successfully completed the works during the last five years.

g I/We also agree that the decision of THE DIRECTOR**,** INDIAN INSTITUTE OF TROPICALMETROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 in the Qualification and selection of Contractors will be final and binding upon me / us.

h I/We agree that **THE DIRECTOR,** INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008 reserves the right to qualify any contractor or to cancel the exercise without assigning any reason for doing so or to incur any liability to any party whatsoever.

i I/We agree not to withdraw from the contract after issue of LOI and before signing the agreement. If so we abide by the condition that liquidated damages shall be claimed against us by THE DIRECTOR, INDIAN INSTITUTE OF TROPICAL METROLOGY,DR.HOMI BHABA ROAD,PASHAN,PUNE-411008

j The following are enclosed as enclosures to the letter of tender

1. Certificate of Incorporation from Registrar of Companies

2. Memorandum of Association

3 Annual Report / Audited Balance Sheet & Profit and Loss Statement for the past5 years

4. Solvency Certificate from Bankers for the value of Rs ------ LAKHS, current and dated not earlier than three months from the last date of submission of bid.

5. Support Certificate from Bankers for Credit facilities available and cash flow of Rs ------- LAKHS per month.

6. Proof of filing Income Tax returns for the previous three years.

7. Sales Tax /Works Contract Tax / VAT / PAN Registration and Clearance certificate.

8. PERT/BAR Charts and quality Formats used at site such as pour card for Concrete etc.,

9. Testimonials from Clients / Consultants for completion of works included inStatement -D

10 LOI / Work Order issued by the Clients for ongoing works included in Statement E‘

11. Organization Chart of Company showing the Officer in-Charge who will have direct link with and control of, site organization.

12. Organization Chart and Curriculum Vitae of top two officers, viz, .Project Manager and Coordinator.

13. Method Statement : Programming & Planning and Progress monitoring plan, weekly and monthly ; Management of direct subcontractors from selection through execution of work; Coordination with Specialist contractors like Electrical, Air-conditioning, lifts etc.; Quality control & quality Assurance at site; Safety Plan;

14. Statements A to H with complete details., and any certificates other than that listed above.

15. Bidder should separately specify % of VAT and service tax as applicable.

16. Final offer shall be submitted in number as well as word format.

I / we hereby agree to abide by the decisions of The Director, INDIAN INSTITUTE OF TROPICAL METROLOGY, DR.HOMI BHABA ROAD, PASHAN, PUNE-411008. in all matters relating to this Qualification

Date of Submission **Signature of BIDDER with Official Seal**

FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES –CLAUSE 4.5 [B] [c] OF ITB

BANK CERTIFICATE

This is to certify that M/s. …… is a reputed company with a good financial Standing.

If the contract for the work, namely …… is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. to meet their working capital requirements for executing the above contract.

__ Sd. __

Name of Bank
Senior Bank Manager
Address of the Bank

STATEMENT – A

ORGANISATION STRUCTURE (BIDDER)

S.No	Details required	To be filled by the Bidder
1	Name of the Bidder's Company	
2	Nationality of Bidder	
3	Establishment of the Company	
	i) Year	
	ii) Location	
4.	The Bidder is a company (Please enclose attested copy of registration / incorporation under appropriate laws of the Bidder's country)	Yes / No Enclosed/ Not enclosed
5	Address of the Bidder :	
i)	Registered Office Address Telephone Number Fax Number E-mail Address Web site	
ii)	Local office address: Telephone Number Fax Number E-mail Address	
iii)	Office address through which this work will be handled and name of officer in-charge. Telephone Number Fax Number E-mail Address	
iv)	The Bidder has to furnish a detailed note on how it will handle the project in India, if successful bidder, in terms of (i) Finance, (ii) Manpower, (iii) Tools & equipment, (iv) Use of local agencies and labour, (v) Project control and management plan	
6	Details of the Board of Directors i) Name of the Director ii) Qualification iii) Organization iv) Office address v) Telephone Number vi) Fax Number vii) E-mail Address	
7	Enclose Company's Organization Chart	Enclosed / Not Enclosed

S.No	Details required	To be filled by the Bidder
	showing the structure of the organization including the names of the Directors / Chief Executive Officer and position of Officers.	
8	Number of years of experience and other Details.	
a.	As a Principal Contractor (Contractor shouldering major responsibility)	Yes / No
	i. In own country	Yes / No No. of Years :
	ii. Other countries (If yes, pl. specify country)	Yes / No No. of Years : Country :
9	Average number of permanent employees in the last 12 months.	
	i) Managerial	Nos.
	ii) Technical iii) Administration	Nos. Nos.
	iv) Financial	Nos.
	v) Quality Control and Quality Assurance Engineer	Nos.
	vi) Safety Officer	Nos.
	vii) Industrial Relations Officer	Nos.
	viii) Supervisors	Nos.
	ix) Foreman	Nos.
	x) Skilled Labours	Nos.
	xi) Un Skilled Labours	Nos.
	xiii) Others (to specify)	1. Nos. 2. Nos. 3. Nos.
10	i) How many years has your Company been in business of similar work under its present name & address.	…….Years
	ii) What were your fields of activities from when your Company was established?	1. 2.

S.No	Details required	To be filled by the Bidder
		3.
	iii) Whether any new fields were added in your Company? and if so, when and in what fields?	1. 2. 3.
11	Area of business activities other than FPS works, if any. (If yes please furnish specific information).	Yes / No
12	In which fields of FPS engineering works do you claim specialization and interest?	1. 2. 3.
13	Whether registered with any Government / Public Sector Undertaking / Local bodies like CPWD / MES / PWD or equivalent applicable in the Bidder's country. If yes, please furnish details class and type of Registration.	1. 2.Yes / No. 3.
14	Registration Details : i) Sales Tax Registration No or equivalent applicable in the Bidder's country & Valid up to ii) PF Registration No or equivalent applicable in the Bidder's country & Valid up to iii) ESI Registration No or equivalent applicable in the Bidder's country & Valid up to iv) Service Tax registration No or equivalent applicable in the Bidder's country & Valid up to	
15	Whether adequate and satisfactory evidence to indicate financial capacity of the organization to undertake the said FPS work is enclosed.	Yes / No
16	Do you have plans for sub-contracting the work including specialized nature of building / infrastructure works? If yes, pl specify the quantum of contract in terms of percentage of works. Also, pl furnish the value of work sub-contracted in various works. Details of credentials of the subcontractors proving their ability to handle the component of this project.	Yes / No % Rs……
17	Do you have Latest Survey instruments and Equipment to set out levels at any heights and all type of Special structures?	Yes / No If yes mention the name of equipment and the quantity possess.
18	Do you material in stock? If yes, pl. furnish details of your own plant. If no, please specify name of manufacturer	Yes / No

S.No	Details required	To be filled by the Bidder
	for sourcing and the dependency of the manufacture by the Bidder.	
19	Do you have R & D department?. If yes, give details.	Yes / No
20	i) Do you have and adopt Quality Control and Quality Assurance Manual?	Yes / No Enclose QA Plan
	ii) Is your company an ISO certified Company? If yes, please furnish the ISO certification no.	Yes / No
	iii) Do you follow Quality Assurance System as per the appropriate ISO series of standards?	Yes / No
21	i) Do you have and follow Safety Manual? If yes, please give details of health and safety facilities available with you.	Yes / No Enclose Environmental Health and Safety Plan.
	ii) Was there any major, fatal accident during execution in the last five years? If yes, furnish Details.	Yes / No
	iii) Whether corrective action taken immediately and first-aid facilities provided in the site?	Yes / No
22	Propose Methodology:	Enclose Statement
	i) Whether the Programming and planning plan will be prepared in the form of Pert Chart or Bar Chart?	Yes / No
	ii) Whether the coordination plan & report plan will be prepared in the standard format?	Yes / No
	iii) Whether the technically qualified Sub-Contractors are engaged to carry out the work?	Yes / No
	iv) Please specify method for control and management of Sub-Contractors.	
23	Were you ever required to suspend work for a period of more than three months continuously after you started? If yes, Please furnish the name of project and reasons thereof.	Yes / No. 1. Name of Project : Reasons 2. Name of Project : Reasons
24	Have you ever left the work awarded to you incomplete? If yes, Please furnish the name of project and reasons thereof.	Yes / No. 1. Name of Project : Reasons 2. Name of Project : Reasons
25	Were any penalties imposed for delays on the completion of the project? If yes, Please furnish the name of project and	Yes / No. 1. Name of Project : Reasons

S.No	Details required	To be filled by the Bidder
	reasons thereof	2. Name of Project : Reasons
26	Were there any termination of Contracts by the Employer? If yes, please furnish the details	Yes / No. 1. Name of Project : Reasons 2. Name of Project : Reasons.
27	Litigation initiated by the Company and against the Company if any?	
	i) Whether cases of litigation proceedings have arisen in your projects during the last three financial years?	Yes / No
	ii) If Yes, How many cases of litigation arisen during the last three financial years?	Nos.
	iii) Furnish the details of the highest claim of Litigation during the last three financial years	. Rs.
	iv) If the Bidder is a multinational company, please furnish the litigation history initiated by the Company and against the company in India, if any	
28	Arbitration :	
	i) Whether cases of arbitration proceedings have arisen in your projects during the last three years?	Yes / No
	ii) If Yes, How many cases of arbitration arisen during the last three years. Furnish name of work, name of the Client, cost of work, amount of claim.	Nos.
	iii) Furnish the details of the highest claim of arbitration during the last three years.	Rs.
29	Details of the Banker	
	Name of the Banker	
	Contact person	
	Office Address	
	Telephone Number	
	Fax Number	
30	Are you a Recipient of any Award in appreciation of your work? If yes, please furnish the details	Yes / No
31	Please give atleast three references of Clients (Engineers, Architects or top Officials of Organisation) for whom you may have executed FPS works of importance and similar nature from whom Superintending, Engineer, P.W.D, Building (Construction &	1) Name : Designation : Company : 2) Name : Designation : Company :

S.No	Details required	To be filled by the Bidder
	Maintenance)Circle can verify	3) Name : Designation : Company :
32	Any special information, which you may like to provide.	
33	Does tenderer have any relative Working in IITM? If yes state the name and designation.	

Place : **Signature of the Bidder with official seal**

Date :

STATEMENT-B

PERSONNEL TO BE DEPLOYED FOR THE PROJECT

S.No.	Details required	To be filled by Bidder
A	**Managerial Level – General**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	
B	**Managerial Level – Technical**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	
C	**Managerial Level - Administration & Finance**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	
D	**Managerial Level - Quality Control and Quality Assurance**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	

S.No.	Details required	To be filled by Bidder
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	
E	**Managerial Level - Safety Officer & Industrial Relation Officer**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	
F	**Managerial Level – Planning**	
1	Individual‘s Name	
2	Age	
3	Qualification	
4	Present position	
5	Professional experience in the similar nature of works.	
6	Years with the Bidder	
7	Language known	
8	Name two recent works and nature of involvement of the person	

Note

1) CV of each of the above key personnel and details of their experience should be included in the submission.

2) Organization Chart (both office and site) specific for this project for all the divisions of work (Main works & Direct Sub works) as an Annexure to this format must be attached.

3) Minimum Technical Engineer, site supervisor, safety Engineer is mandatory at site.

Place : Signature of the Bidder Common seal of the Company

Date

STATEMENT-C
Financial Information

Sl. No.	Description	Details to be filled in by Bidder
A	Annual Turnover in the last five financial years (In INR crores)	
1	Year : April 2012 - to March 2013	
2	Year : April 2013 - to March 2014	
3	Year : April 2014 - to March 2015	
B	**Financial Information (In INR Crores)**	
I	Year : April 2012 - to March 2013	
	a. Total assets	
	b. Current assets	
	c. Total Liabilities	
	d. Current Liabilities	
	e. Profits before taxes	
	f. Profits after taxes	
	g. Net worth	
	h. Working Capital	
II	Year : April 2013 - to March 2014	
	a. Total assets	
	b. Current assets	
	c. Total Liabilities	
	d. Current Liabilities	
	e. Profits before taxes	
	f. Profits after taxes	
	g. Net worth	
	h. Working Capital	
III	Year : : April 2014 - to March 2015	
	a. Total assets	
	b. Current assets	
	c. Total Liabilities	
	d. Current Liabilities	
	e. Profits before taxes	
	f. Profits after taxes	
	g. Net worth	
	h. Working Capital	
C	Solvency Certificate (in INR Crores) a. Name of Banker with address	
	b. Date of Certificate	
	c. Amount	
D	Credit facilities available to Bidder – Fund and non-fund based such as Cash Credit, Working capital term loans, LCs and Bank Guarantees - Banker's or Bankers' Letter must be produced - (In INR Crores)	

Sl. No.	Description	Details to be filled in by Bidder
	a. Name of Banker with address	
	b. Date of Letter of Support	
	c. Amount	
E	Bidder's Financial resources for this project	
	a. Own resources	
	b. Banker's or Bankers' credits	
F	a. Approximate total value of on-going works	
	b. Total Value of works to be completed as of now Note: 1) The Bidder should furnish the value of work to be completed as of now along with break-up details of each work. 2) The Bidder has to ensure that the list of works covered in this Proforma should be same as the ones listed in STATEMENT - E (List & details of Ongoing works) with Performa of each work.	
G.	Anticipated total value of new works for the next financial year.	

Place : **Signature of Bidder**

Date: **Official Seal**

Note: Balance sheet, Profit and loss statement, auditor's report etc. duly signed by Charted Accountant is required to be attached separately

STATEMENT-D

Details of completed works in last five years

S.No	Details required	To be filled by the Bidder
1	Name of work	
2	Country and location	
3	Client's name and address	Name: Address :
4	Consultants name and address.	Name: Address :
5	Total tendered cost of work Agreement No. Date	INR …….. Crores Agreement No: Date :
6	Total actual cost of work after completion.	INR …….. Crores
7	Excess / less in percentage.	……..%
8	Explain if Excess / less is higher by 20% of the tendered cost of work.	
9	Date of commencement	
10	Period of completion	
11	Stipulated date of completion	
12	Actual date of completion	
13	Extended by the contractor, if any. Reason for non-completion of work in stipulated time limit / extended time limit, if so furnish details	Yes / No
14	Extension of time granted by the Client, if any. If yes, please specify the reason for extension of time.	Yes / No
15	Brief description of works including principal features and quantities of main items of the work	
16	Name of Contractor's Engineer in-charge of the Project & Qualifications	Name : Qualification :
17	Details of specialised work executed under this Contract.	
18	Details of specialised work executed by their own	

S.No	Details required	To be filled by the Bidder
	divisions under the Contract	
19	Whether the Programming and planning plan was followed in the form of Pert Chart or Bar Chart?	Yes / No
20	Whether the Quality Control and Quality Assurance function was carried out? If yes, Please give details and copies of quality formats used in anyone project	Yes / No
21	Whether the safety measures were followed? If yes, Please give details	Yes / No
22	i) Were there any labour strikes? If yes, Please give details.	Yes / No
	Whether corrective action taken immediately?	Yes / No
23	Were there any penalties / fines / stop notice / compensation / liquidated damages imposed during execution of the project? If Yes, Please give amount, details and reason.	Yes / No Amount : Reason :
24	Whether the contract of the work was terminated? If Yes, furnish the details.	Yes / No Name of the Project : Reason :
25	Please specify the details of litigation / arbitration cases, if any, pertaining to works completed. If Yes, furnish the details i.e. Nature of litigation / arbitration. Please furnish whether the litigation is initiated by the Company or against the Company.	Yes / No
26	Attach client‘s certificate, as may be available (Not below the rank of Director or equivalent)	Yes / No

Place : **Signature of Bidder**
Date: **Official Seal**

STATEMENT-E

Details of On-Going works

S.No.	Details required	To Be filled by the Bidder
1	Name of work	
2	Country and location	
3	Client's name and address	Name : Address :
4	Consultants name and address	Name : Address :
5	Total tendered cost of work (Agreement No. and Date)	INR ……. Crores
6	(a) Brief description of works including principal features and quantities of main items of the work.	
7	i) Percentage of physical completion	
	ii) Amount billed for the work completed.	
	iii) Cost of work remaining to be executed as on the date of submission	
	iv) Stipulated date of completion	
	v) Anticipated date of completion	
8	Name of Contractor‘s Engineer in-charge of the Project & Qualifications.	Name : Qualification :
9	Details of specialised works under this Contract	
10	Specialised works being executed by their own divisions	
11	a. Details of the sub-contracted specialised works by the Bidder	
	i) Total value of work sub-contracted.	INR …….. Crores
	ii) Trade-wise value of work sub-contracted.	1.INR…….. Crores 2.INR…….. Crores. 3.INR…….. Crores. 4.INR …….. Crores.
	iii) Trade-wise Name of sub-contractors	1.

S.No.	Details required	To Be filled by the Bidder
	Use separate sheet for details of such subcontractors experience, capability, testimonial.	2. 3. 4.
12	15 i) Were there any labour strikes? If yes, Please give details.	Yes / No
	ii) Whether corrective action taken immediately?	Yes / No
13	Were there any penalties / fines / stop notice / compensation / liquidated damages imposed? If Yes, Please give amount, details and reason.	Yes / No Amount : Reason :
14	Please specify the details of litigation / arbitration cases, if any, pertaining to works ongoing	Yes / No
15	Attach client's certificate, as may be available (Not below the rank of Director or equivalent)	Yes / No

Place : **Signature of the Bidder**

Date : **Official seal**

STATEMENT- F
A - PLANT, MACHINERY & EQUIPMENT

S.No.	Item of Equipment	Qty	Equipment Information				Current Position			Source of the Equipment Pl. Mention Owned / Leased / Rental
			Name of Manufacturer	Make & Model	Capacity	Year of Manufacture	Location	Present Condition	Availability for this Project	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										

B – Details of manpower like carpenters , , false ceiling agency, Electrical agency, etc. If the Machinery, Equipments, Plants etc are leased or rental attach copy of agreement

Place : **Signature of the Bidder with seal**

STATEMENT-G

Details of Termination of contract by previous Client in the past, if any

S.No.	Particulars	To be filled by the Bidder
1	Name of work	
2	Name of the Client	
3	Value of Contract in INR Crores	
4	Period of Contract	
5	Terminated at what stage	
6	Reasons / grounds for termination	
7	Approx. value of work completed at the time of termination in INR Crores	
8	Approx. value of balance work not completed in INR Crores	
9	Remarks	

Place :

Date :

Signature of the Bidder with seal

STATEMENT- H

STATUS OF CURRENT LITIGATIONS, IF ANY

The Bidder is required to disclose as part of bid submission all cases filed against the BIDDER in any Court of Law in any country. The BIDDER shall give the information in the following format in separate sheets for each litigation as applicable:

I General Information

(1) Name of the Petitioner :

(2) Name of the Court in which case has been admitted.

(3) Name / designation of the Presiding Authority of the Court

(4) Date of Filing of the case and date of Admittance of the case.

(5) Expected date of next hearing :

(6) Has hearing already commenced? If so, when was the last hearing?

(7) Name & Address of the BIDDER'S Counsel

(8) Name & Address of the Petitioner's Counsel

(9) Current status of the litigation – Whether any interim injunction or injunction award has been given. If so, give the details?

(10) Has any appeal been filed against any interim injunction or such award?

(11) Value of litigation / damages claimed / out standings and disputes, as per the Petitioner

(12) Any arrest warrant or any property attachment or any insolvency proceedings or any such decree issued against the BIDDER? Give the details.

II. Financial Value of Dispute / Claim / Damages:

The BIDDER should furnish the sum total of claims / damages involved, on account of the litigations currently in operation.

III. Net Worth:

The BIDDERS shall furnish the percentage of the total sum of disputes / litigations / claim, currently under litigation in proportion to the average net worth of the
Company for the last three years.

Place :

Date :

Signature of the Bidder with seal

STATEMENT-I

IV. BIDDER'S Legal Status on account of the Litigation:

The BIDDERS shall furnish information whether the litigation in question affects / threatens the fundamental existence / operation of the company (For E.g.: insolvency, decree of criminal nature etc.)

Place :

Date :

Signature of the Bidder with seal

ANNEXURE – 'B'

CERTIFICATES

Enclose Certificates in support of suitability, technical knowhow and capability for having successfully completed similar nature of works in the last five years.

Also furnish the following details in the enclosed certificate.

S.No.	Name of Works	Period of FPS Installation	Name of Client / Owner.

Place : **Signature of the Bidder**

Date : **Common seal of the Company**

Letter of Acceptance

(letterhead paper of the Employer)

_____
[date]

To: _____
[name and address of the Contractor]

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ [name of the contract and identification number, as given in the Instructions to Bidders] for the Contract Price of Rupees ———— _____ _____
(_____) [amount in words and figures], as corrected and modified in accordance with the Instructions to Bidders1 is hereby accepted by our Agency.

We accept/do not accept that _____ be appointed as the Adjudicator2.

We note that as per bid, you do not intend to subcontract any component of work.

[OR]

We note that as per bid, you propose to employ M/s. ..... as sub-contractor for executing ….....
[Delete whichever is not applicable]

You are hereby requested to furnish Performance Security, plus additional security for unbalanced bids in terms of ITB clause 27.5, in the form detailed in Para 31.1 of ITB for an amount of Rs.———— within 21 days of the receipt of this letter of acceptance valid up to 28 days from the date of expiry of Defects Liability Period i.e. up to ..... and sign the contract, failing which action as stated in Para 31.2 of ITB will be taken.

We have reviewed the Installation methodology submitted by you along with the bid in response to ITB Clause 4.2[k] and our comments are given in the attachment. You are requested to submit a revised Program including environmental management plan as per Clause 27 of General Conditions of Contract within 14 days of receipt of this letter.

Yours faithfully,

Authorized Signature
Name and Title of Signatory
Name of Agency

1. Delete "corrected and" or "and modified" if only one of these actions applies. Delete "as corrected and modified in accordance with the Instructions to Bidders" if corrections or modifications have not been effected.

2. To be used only if the Contractor disagrees in his Bid with the Adjudicator proposed by the Employer in the "Instructions to Bidders."

Issue of Notice to proceed with the work

(letterhead of the Employer)

———————— (date)

To

———————————————— (name and address of the Contractor)
————————————————
————————————————

Dear Sirs:

Pursuant to your furnishing the requisite security as stipulated in ITB clause 31.1 and signing of the contract agreement for the FPS Installation and supply of ———————— @ a Bid Price of Rs.————————, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory
authorized to sign on behalf of Employer).

Agreement Form

Agreement

This agreement, made the _____ day of _____20 _____, between_____[name and address of Employer] (hereinafter called ―the Employer)‖ of the one part and _____[name and address of contractor] (hereinafter called ―the Contractor‖) of the other part.

Whereas the Employer is desirous that the Contractor execute Proposed FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT IMD COLONY, PASHAN, PUNE [name and identification number of Contract] (Hereinafter called ―the Works‖) 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 price of Rs.....

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings 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 in 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 Contract at the times and in the manner prescribed by the Contract.

4. The following documents shall be deemed to form and be read and construe as part of this Agreement, viz.:

    i) Letter of Acceptance;
    ii) Notice to proceed with the works;
    iii) Contractor‘s Bid;
    iv) Contract Data;
    v) Conditions of contract (including Special Conditions of Contract);
    vi) Specifications;
    vii) Drawings;
    viii) Bill of Quantities; and
    ix) Any other document listed in the Contract Data as forming part of the contract.

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

The Common Seal of
_____
was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said

_____
in the presence of:
Binding Signature of Employer
_____ ___

Binding Signature of Contractor

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
IITM
ESSO

(SECTION-4)

CONDITIONS OF CONTRACT

Conditions of Contract

A. General

1. Interpretation

1.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Architect will provide instructions clarifying queries about the Conditions of Contract.

1.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).

1.3 The documents forming the Contract shall be interpreted in the following order of Priority:
(1) Agreement
(2) Letter of Acceptance, notice to proceed with the works
(3) Contractor‘s Bid
(4) Contract Data
(5) Conditions of Contract including Special Conditions of Contract
(6) Specifications
(7) Drawings
(8) Bill of Quantities and
(9) Any other document listed in the Contract Data as forming part of the Contract.

2. Language and Law

2.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

3. Engineer's Decisions

3.1 Except where otherwise specifically stated, the institute authorities will decide Contractual matters between the Employer and the Contractor in the role representing the Employer.

4. Delegation

4.1 The Architect/Employer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

5. Communications

5.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

6. Subcontracting

6.1 The Contractor may subcontract with the approval of the Architect\IITM but may not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

6.2 The contractor shall not be required to obtain any consent from the employer for:

A The sub-contracting of any part of the Works for which the Sub-contractor is named in the contract;

B The provision of labor; and

C. The purchase of materials which are in accordance with the standards specified in the Contract. Beyond this if the contractor proposes sub-contracting any part of the work during execution of works, because of some unforeseen circumstances to enable him to complete the work as per terms of the contract, the Engineer will consider the following before according approval:

a) The contractor shall not sub-contract the whole of the Works.

b)The contractor shall not sub-contract any part of the Work without prior consent of the Engineer. Any such consent shall not relieve the contractor from any liability or obligations under the contract and he shall be responsible for the acts, defaults and neglects of any sub-contractor, his agents or workmen as fully as if they were the acts, defaults or neglects of the contractor, his agents or workmen.

c) The Architect should satisfy whether the circumstances warrant such subcontracting; and the sub-contractors so proposed for the Work possess the experience, qualifications and equipment necessary for the job proposed to be entrusted to them in proportion to the quantum of work to be sub-contracted.

d) If payments are proposed to be made directly to that sub-contractor, this should be subject to specific authorization by the prime contractor so that this arrangement does not alter the contractor's liability or obligations under the contract.

(Note: 1. All bidders are expected to indicate clearly in the bid, if they propose sub-contracting elements of the works amounting to more than 20 percent of the Bid Price. For each such proposal the qualification and the experience of the identified sub-contractor in the relevant field should be furnished along with the bid to enable the employer to satisfy himself about their qualifications before agreeing for such sub-contracting and include it in the contract. In view of the above, normally no additional sub-contracting should arise during execution of the contract.

2. However, [a] sub contracting for certain specialized elements of the work is not unusual and acceptable for carrying out the works more effectively; but vertical splitting of the works for subcontracting is not acceptable. [b] In any case, proposal for sub-contracting in addition to what was specified in bid and stated in contract agreement will not be acceptable if the value of such additional sub-contracting exceeds 25% of value of work which was to be executed by Contractor without sub-contracting.3 Assignment of the contract may be acceptable only under exceptional circumstances such as insolvencies / liquidation or merger of companies etc.)

7. Personnel

7.1 The Contractor shall employ the key personnel named in the STATEMENT – B in Instruction and Information to Bidders. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

7.2 If the Architect/Employer asks the Contractor to remove a person who is a member of the Contractor‘s staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

8. Employer’s and Contractor's Risks

8.1 The Employer carries the risks which this Contract states are Employer‘s risks, and the Contractor carries the risks which this Contract states are Contractor‘s risks.

9. Employer's Risks

9.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in the Employer‘s country, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, interior war, riot commotion or disorder (unless restricted to the Contractor‘s employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor‘s design.

10. Contractor’s Risks

10.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

11. Insurance

11.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, for the following events which are due to the Contractor‘s risks:

(a) loss of or damage to the Works, Plant and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and

(d) Injury or death of a person working on the site of work. This also includes the supervisory staff employed by the Employer.

11.2 Policies and certificates for insurance shall be delivered by the Contractor to the Employer for the Architects approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

11.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

11.4 Alterations to the terms of an insurance shall not be made without the approval of the Architect/Employer

11.5 Both parties shall comply with any conditions of the insurance policies.

12. **–Deleted-**

13. Queries about the Contract Data

13.1 The institute authorities will clarify queries on the Contract Data.

14. Contractor to Execute the Works

14.1 The Contractor shall execute and install the Works in accordance with the Specification and Drawings, and as per instructions of an Architect

15. The Works to be Completed by the Intended Completion Date

15.1 The Contractor may commence execution of the Works after fulfilling the contract conditions and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

16. Approval by the Architect

16.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Architect and Institute authorities and take approval from the Architect /Institute authorities who are to approve them if they comply with the Specifications and Drawings.

16.2 The Contractor shall be responsible for design of Temporary Works.

16.3 The Architects approval shall not alter the Contractor's responsibility for design of the Temporary Works.

16.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works where required.

16.5 All Drawings prepared by the Contractor for the execution of the temporary Works, are subject to prior approval by the Architect before their use.

17. Safety

17.1 The Contractor shall be responsible for the safety of all activities on the Site, as per safety norms.

18. Discoveries

Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

19. Possession of the Site

19.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

20. Access to the Site

20.1. The Contractor shall allow the Employer / Engineer / Architect and his / their authorized representative access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

21. Instructions

21.1 The Contractor shall forthwith comply with and duly execute any work as instructed by the Employer / Engineer / Architect. All instructions will be in writing. Instructions if orally given then contractor shall confirm them within seven days from the date of such instructions.

22. Disputes

22.1 If the Contractor believes that a decision taken by the Engineer /Architect was either outside the authority given to the them by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Engineer's / Architect's decision.

23. Procedure for Disputes

23.1 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

23.2 The Adjudicator shall be paid daily at the rate specified in the Contract Data together with reimbursable expenses of the types specified in the Contract Data and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of The Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.

23.3 The arbitration shall be conducted in accordance with the arbitration procedure Stated will be final and binding. in the Special Conditions of Contract in page 21.

24. Replacement of Adjudicator

24.1 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not fulfilling his functions in accordance with the provisions of the Contract; a new Adjudicator will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.

25 Time Control Program

25.1 Within the time stated in the Contract Data the Contractor shall submit to the Architect for approval a Program including Environmental Management Plan showing the general methods, arrangements, order, and timing for all the activities in the Works along with monthly cash flow forecast.

25.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.

25.3 The Contractor shall submit to the Architect /Engineer, for approval, an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Employer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.

25.4 The Architect's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Architect again at any time. A revised Program is to show the effect of Variations and Compensation Events.

26 Extension of the Intended Completion Date

26.1 The Employer / Architect shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.

26.2 The Employer / Architect shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

27 Delays Ordered by Institute Authorities

27.1 The Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

28 Management Meetings

28.1 Either the Employer / Architect or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

28.2 The Employer / Architect shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Employer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

29 Early Warning

29.1 The Contractor is to warn the Employer / Architect at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Employer /Architect may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

29.2 The Contractor shall cooperate with the Employer / Architect in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

30 Quality Control

30. 1 Identifying Defects

A The Architect/Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Architect may instruct the Contractor to search for a Defect and to uncover and test any work that the Architect considers may have a Defect.

B The contractor shall permit the Employer‘s Technical auditor to check the contractor‘s work and notify the Employer/ Architect and Contractor of any defects that are found. Such a check shall not affect the Contractor‘s or the Architect‘s responsibility as defined in the Contract Agreement.

30.2 Tests

A The testing of materials shall be carried out by approved laboratories at Contractor's cost and the results will be binding. The test results in original will be sent to the Employer by the laboratory and a copy of the same sent to the Contractor - If the Architect instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.

B All material is required to be tested according to the frequency and record to be maintained by the contractor

30.3 Correction of Defects

A Employer/ Architect shall give notice to the Contractor of any Defect before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

B Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified in the Employer/ Architect‘s notice.

30.4 Uncorrected Defects

A If the Contractor has not corrected a Defect within the time specified in the Engineer‘s notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

Note: Where in certain cases, the technical specifications provide for acceptance of works within specified tolerance limits at reduced rates Architect will certify payments to Contractor accordingly.

31 Cost Control

31. 1 Bill of Quantities

A The Bill of Quantities shall contain items for the fire protection system works, installation, testing, and commissioning work to be done by the contractor.

B The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

31.2 Changes in the Quantities

A If requested by the Architect / Employer, the Contractor shall provide the Architect / Employer with a detailed cost breakdown of any rate in the Bill of Quantities.

31.3 Variations

A All Variations shall be included in updated Programs produced by the Contractor.

31.4 Payments for Variations

A The Contractor shall provide the PMC /Architect/ Employer with a quotation (with breakdown of unit rates) for carrying out the Variation when requested to do so by the PMC /Architect/ Employer. The PMC shall assess the quotation, which shall be given within seven days of the request or within any longer period stated by the Employer and before the Variation is ordered.

B If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the PMC / Architect/Employer, the quantity of work above the limit stated in Sub Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in form of new rates for the relevant items of work.

C If the Contractor's quotation is unreasonable (or if the contractor fails to provide the PMC /Architect/Employer with a quotation within a reasonable time specified by the PMC in accordance with Clause 40.1), the Employer may order the Variation and make a change to the Contract Price which shall be based on PMC‘s own forecast of the effects of the Variation on the Contractor's costs.

D If the PMC /Architect/ Employer decide that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and will be decided on mutually agreed rates.

E The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

31.5 Cash flow forecasts

A When the Program is updated, the contractor is to provide the Architect / Employer with an updated cash flow forecast.

32 Payment Certificates

32.1 The detailed measurements will be taken for all the works executed by the authorized representatives of the architect and recorded in the measurement books and acceptance for these measurements will be obtained from the contractor. Due check measurement of these measurements will be done as per the procedure in practice.

32.2 Contract bills will be prepared by the contractor's engineers at frequent intervals and submitted to the Employer for making payment.

32.3 The value of work executed shall be determined by the Architect after due check measurement of the quantities claimed as executed by the contractor.

32.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

32.5 The value of work executed shall include the valuation of Variations and Compensation Events as specified in clause 44.

32.6 The Architect/Employer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

33. Payments

33.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes, at source, as applicable under the law.

33.2 The contractor shall submit his running bills not less than 15 lakhs towards completed work. 5% amount will be retain from each running bill, retention amount will be released after defect liability period after certified the work by the PMC, Architect and Institute authorities.

33.3 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

34. Compensation Events

34.1 The following are Compensation Events unless they are caused by the Contractor:

(a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.

(b) The Architect / Employer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.

(c) The effect on the Contractor of any of the Employer‘s Risks.

(d) The Architect / Employer unreasonably delays issuing a Certificate of Completion.

34.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Architect / Engineer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

34.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Architect / Employer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Architect / Employer shall adjust the Contract Price based on Architect‘s own forecast. The Engineer will assume that the Contractor will react competently and promptly to the event.

34.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer.

35. Tax

35.1 The rates quoted by the Contractor shall be deemed to be inclusive of all taxes and duties that the Contractor will have to pay for the performance of this Contract.

36. Currencies

36.1 All payments shall be made in Indian Rupees.

37. Price Adjustment

37.1 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

38. Retention

38.1 10% of value of total work done after final bill which will be released after defect liability period of **twenty four** month from the date of handover of site with clearance of institute.

38.2. Time is the essence of the work. All the works shall have to be completed within the stipulate time from the date of LOI (Appendix-A).If the work is not completed within the aforesaid period the contractor shall pay the owners liquidated damages of 1.0% of the balance work value per week subject to a maximum of 10% of value of work order in case of delays beyond the accepted completion period for reasons solely attributed to him.

38.3. The Performance Security shall be provided to the Employer not later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The Performance Security shall be valid until the date 7 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until the date 7 days from the date of issue of the certificate of completion.

39. Works during Night

If it is essential to execute the work during night hours prior approval of the Employer has to be obtained.

40. Cost of Repairs

40.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

41. Finishing the Contract

41.1. Completion

A The Contractor shall request the PMC /Employer to issue a Certificate of Completion of the Works and the Employer / PMC will do so upon deciding that the Work is completed.

41.2 Taking Over

A The Employer shall take over the Site and the Works within fifteen days of the PMC issuing a certificate of Completion.

41.3 Final Account

A The final bill will be settled after Testing and commissioning of all the items of work contemplated in the agreement to the satisfaction of the engineer and taking over of the building by the Employer.

41.4. Operating and Maintenance Manuals

A If ―As built‖ Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

B If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Architect‘s approval, the Architect shall withhold the amount stated in the Contract Data from payments due to the Contractor.

42. Termination

42.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

42.2 Fundamental breaches of Contract include, but shall not be limited to the following:

(a) the Contractor stops work for 14 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Architect;

(b) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reinstallation or amalgamation;

(c) the Architect/Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Architect/Employer;

(d) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and

(e) if the Contractor, in the judgment of the employer has engaged in fraud and corruption, as defined in GCC Clause 63, in competing for or in executing the Contract.

42.3 When either party to the Contract gives notice of a breach of contract to the Architect for a cause other than those listed under Sub Clause 59.2 above, the Architect shall decide whether the breach is fundamental or not.

42.4 Notwithstanding the above, the Employer may terminate the Contract for Convenience & in the public interest.

42.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

43. Payment upon Termination

43.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Architect/Employer shall issue a certificate for the value of the work done less advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

43.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Architect shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

44. Property

44.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor‘s default.

45. Release from Performance

45.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

46. Fraud and Corruption

46.1 The Employer requires the Contractors and suppliers observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the Employer:

(a) Defines, for the purposes of this provision, the terms set forth below as follows:

(i) —corrupt practice‖ means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;

(ii) —fraudulent practice‖ means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;

(iii) —collusive practice‖ means a scheme or arrangement between two or more Bidders, with employer designed to establish bid prices at artificial, non competitive levels; and

(iv) —coercive practice‖ means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

(b) will cancel the contract if it determines at any time that representatives of the contractors engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the taken timely and appropriate action satisfactory to the satisfaction of the Employer to remedy the situation;
(d) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time they have, directly or through an agent, engaged, in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, contract; and

(e) will have the right to require that Contractors to permit the Employer to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Employer.

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
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IITM
ESSO

(SECTION-5)
SPECIAL CONDITIONS OF CONTRACT

1. All bidders shall furnish their offer in the document issued by IITM,Pune office only and it should be strictly as per stipulated tender conditions. In case of any variance tender may be rejected at the sole discretion of the clients.

2. In the event of there being any change in specifications/other conditions having the financial implications the extent of such financial implications will be assessed by the consultants/client and weightage in the respect of the same will be added / subtracted to the quoted amount to arrive at the final tender amount.

3. All material supplied at site will be inspected by the client's engineers/consulting engineers, prior to installation or fabrication.

4. Contractors who have done at least 16 lakh INR value Firefighting, Fire alarm, smoke detection system work in last 5 years shall be considered for pre-qualification.

5. Contractors should have carried out similar works in government organization in past 3 years at least one such works, preferably he should have experience of executing Victaulic fittings at least one project.

6. Bidder shall submit at least two makes with the respective catalogues for each item.

7. AMENDMENTS IN TENDER DOCUMENT

A 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.

B 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.

C 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.

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

7. COMPLETION PERIOD

A The completion period of the entire work shall be **THREE (03)** months after issue of LOI. 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.

B 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.

C 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.

D 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.

8 Warranty

The contractor shall provide complete warranty of system for 2 year from the date of hand over and commissioning of system satisfactorily and shall give service back up for 24 hrsX7 days of a week against any failure, software / hardware problem etc. During warranty preventive maintenance is essential and all cost of consumables is included in this contract.

9. Necessary training for the successful operation & trouble shooting to the IITM responsible staff member is also included in the scope.

10. Vendor should consider all required Liasoning work related to Fire alarm & detection system with State / Municipal authorities for getting Fire NOC

11. Contractor preferably have licence from Maharashtra State/ Pune Muncipal Corporation for Fire Protection system

12. **Preventive maintenance Scope**

A. The firm will engage trained and experienced technical staff and helpers for routine maintenance headed by a qualified Fire Supervisor and support should be available for 24 x 7 hours for two years after commissioning of FPS and handing over of the system to IITM.

B. The firm will maintain the logbook for maintenance as detailed below.

a) After each maintenance/Testing the test detailed to be entered in the maintenance register with dates and result achieved.

b) After carrying out each test, the entry in the register to be got counter signed from the IITM Engineer. Without prior approval, no fitting/material will be removed for repairs; it will be contractor's responsibility to provide alternative temporary arrangement of such items for the period. The item is repaired and put back in to position so that the system remains fully functional all the time.

C. The Contractor will conduct periodical fire drill at site as per direction of the engineer in charge including imparting training to the users staff in the use of fire Extinguishers etc.

D. The checking and maintenance of the batteries for the system shall be done including maintaining specific gravity and distilled water level. However, replacement of defective batteries is not covered in the Scope of this work.

E. The firm shall maintain each fire zone.

F. The servicing of the system shall be done smoothly including fire detector system and random checking and heat detectors periodically by heat and smoke.

G. The system shall be kept in fully working condition till completion of contract. The firm will arrange handing over of the total system in fully functional condition on completion of the contract.

H. The demonstration drill of the working of the system shall be given once a month as and when desired by the Engineer-in-Charge or as per his direction.

I. All the material to be supplied for replacement of parts shall be ISI make/approved.

J. The firm shall depute one qualified Electrical Engineer to check the whole system once in every month and shall maintain a test record signed by them and got countersigned by their visit from the Engineer of the employer i.e. IITM. The firm shall submit a list of person deployed for the work.

K. The firm has to arrange for testing both the fire pumps in the presence of IITM's Engineer once in a fortnight. The test include running of the pressurization pumping set in case of loss of pressure of fire hydrant system and running of diesel engine pump by artificial closure of electricity. Creating the pressure loss in the pipelines shall test the electricity driven pump set. Test Pressure at the farthest end, bottom most ends and at pump set one of the yard hydrant shall be taped for operation on the same day by creating the desired jet, such test shall be done at least once in a month in the presence of Engineer.

L. The IITM Engineer or his representative shall have access to installation during all hours.

M. Maintaining liaison with security department in case of fire, test being conducted to check the operation/readiness of the system shall be contractor's responsibility.

N. The servicing of the fire pumps, jockey pump, motor and engine shall be done twice in a year. During the 1st quarter and 3rd quarter of the contract period to the entire satisfaction of the Engineer nothing extra shall be paid on this account. The department will provide Water and electricity free of cost for its running and maintenance.

O. Department shall be in no way be involved in any dispute of whatever kind between the contractor & the staff engaged by him.

P. Contractor would be bound to execute such additional item which can be termed as logical essential & necessary (even though not listed in schedule of work) for the effective execution of the work in totally rates for such extra items of work shall be rationally analyzed/derived & would be binding on the contractor.

Q. The contractor undertaking the job is advised to verify the particular as detailed in annexure & satisfy itself as regards to the conditions & quantity. On termination of the contract the contractor shall have to hand over the installation in good working condition.

13. It is sole responsibility of contractor for handed over material (Victaulic couplings, fittings and valves) by IITM for safeguard and any damage or losses to the material shall be recovered from the contractor.

14. Victaulic installation will be done under the supervision of Victaulic technical representative and necessary support will be provided.

15. The contractor should follow all safety norms of work and if fails suitable action will be taken against the contractor and it will be binding on contractor.

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(SECTION-6)

LIST OF APPROVED MAKES

LIST OF APPROVED MAKES

1)	PUMPS :	KIRLOSKAR/MATHERAN PLANT/CROMPTON
2)	MOTORS:	KEC/GREEVES/SIEMENS
3)	DIESEL ENGINE:	KOEL/CUMMINS
4)	STARTERS/SWITCHES/SFU:	L & T /SIEMENS/SCHNEIDER
5)	VOLTMETER & AMMETER:	RISHAB/AUTMATIC ELECTRIC/INDUSTRIAL METERS
6)	PRESSURE SWITCH:	INDFOSS/SWITZER
7)	PRESSURE GAUGE:	FIEBIG/H.GURU
8)	PIPES	JINDAL/ZENITH/TATA//SURYA/APOLLO/SIDDHARTHA
9)	FITTINGS:	ANY REPUTED MAKE AS PER SPECS.
10)	SLUICE VALVES:	KIRLOSKAR/KARTAR
11)	GM VALVES-UPTO 50MM:	LEADER/ZOLOTO/SANT
12)	BUTTERFLY VALVE:	AUDCO/INTERVALVE
13)	BALL TYPE FOOT VALVE WITH NON-RETURN VALVE:	KIRLOSKAR, KARTAR & UPADHYA
14)	NON RETURN VALVE:	NORMEX/KIRLOSKAR
15)	HYDRANT VALVE:	SBJ/NEWAGE
16)	STRAINER:	LEADER/GREEVES/HAWA/HAMMER
17)	HOSES:	NEW AGE/CRC
18)	HOSE REEL-DRUM:	SBJ/NEW AGE
19)	HOSE REEL-HOSE:	DUNLOP/NEW AGE
20)	BRANCH PIPE:	SBJ/NEW AGE
21)	HOSE BOX:	ANY REPUTED MAKE AS PER SPECS.
22)	WRAPPING COATING:	IWL/RUSTEK
23)	PAINT:	ASIAN PAINTS/BERGER/ J & N
24)	CABLES:	POLYCAB/CCI/FINOLEX
25)	BATTERIES:	EXIDE/AMCO/TATA GREEN
26)	EXTINGUISHERS:	MINIMAX/SAFEX/ZENITH
27)	ALARM VALVE:	HD FIRE/FIRE TECH /NEW AGE
28)	SPRINKLERS:	HD FIRE/ SPRAYSAFE /NEW AGE
29)	AIR RELEASE VALVE:	SBJ/EQUIVALENT

30) FIRE ALARM CONTROL PANEL : SECUTRON / NOTIFIER / EDWARD / BOSCH/ SIEMENS / MORLEY / HONEYWELL/RAVEL
31) REPEATER PANEL : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
32) ADDRESSABLE SMOKE DETECTOR : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
33) ADDRESSABLE MULTI SENSOR DETECTOR : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
34) ADDRESSABLE HEAT DETECTOR : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
35) ADDRESSABLE STROBE CUM SOUNDER : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
36) ADDRESSABLE SOUNDER / HOOTER : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
37) ADDRESSABLE MANUAL CALL POINT : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
38) ADDRESSABLE MONITOR MODULE : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
39) ADDRESSABLE CONTROL MODULE : SECUTRON / NOTIFIER / EDWARD / BOSCH / SIEMENS / MORLEY/ HONEYWELL
40) FRLS ARMOURED CABLE : FINOLEX / NEOLEX / POLYCAB / KEI / RAVIN / THERMOFLEX / RPG / RR KABEL / LAPP
41) WIRELESS ADDRESSABLE PANLE: SIEMENS/AIRLIGHT/AROS ASIA/HONEYWELL/KARSAN
42) WIRELESS ADDRESSABLE SMOKE CUM HEAT DETECTOR: SIEMENS/AIRLIGHT/AROS ASIA/HONEYWELL
43) WIRELESS ADDRESSABLE HOOTER: SIEMENS/AIRLIGHT/AROS ASIA/HONEYWELL
44) WIRELESS ADDRESSABLE MCP: SIEMENS/AIRLIGHT/AROS ASIA/HONEYWELL
45) PLA SYSTEM : BOSCH\AHUJA\AUDIO TRACK \EQUIVALENT APPROVED BY CONSULTANT\IITM

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(SECTION-7)

HEALTH AND SAFETY

This document defines the operations undertaken by Principal Contractors and their sub-vendors on Project premises, which can give rise to hazards to those engaged in the work and others who may be working, standing or passing in the vicinity.Compliance with NBC norms on Installation safety for ensuring safety during Execution.

It is the **IITM's** Endeavour to secure a high standard of safety at site. Therefore, Contractors and sub-Contractors must know their duties under common law, both for establishments, and their own employees and to conduct their business and methods of work to conform to the best practices.

Before the **IITM**, allows any contracting or sub- contracting firm to carry out work on its premises, the **IITM** insists that Contractors and sub-Contractors understand their duties regarding safe practices for themselves, others and regulations covering the type of work they will be carrying out.

In furtherance to this policy, rules herein have been devised to bring to the notice of Contractors and sub-Contractors, some of the more common hazards, and appropriate preventive measures in connection with the erection, Installation, cleaning, painting, alteration or demolition of plant, machinery and buildings.

The **IITM** is confident that the observance of these rules will be no hindrance to progress the work, but will assist in the avoidance of accidents.

IT IS IN A TERM OF ALL CONTRACTS BETWEEN THE **IITM** AND CONTRACTORS THAT THEY AND ANY SUB-CONTRACTORS, APPOINTED BY THEM COMPLY WITH THESE RULES AND THEIR CO-OPERATION IS THEREFORE OBLIGATORY IN CARRYING OUT THE PRECAUTIONS LAID DOWN

The ACMV Contractor shall at his own expense arrange for complying with all the occupational safety, health and welfare legislations of Government including the Electrical code and the Occupational Safety, Health and Welfare Act.

The above has been received and read by Contractor / Sub- Contractor, we agree to comply with these Rules (See foot-note)

Contractors .....…….

Company.....……

Date .....……

8.0 Minimum Safety Requirements (To be made a part of Tender conditions and BOQ of works related package to address the inclusion of PPE, Scaffold, Electrical safety measures, House keeping as a minimum)

Prior to commencing work on Site, the Contractor must make himself aware of all the requirements for the Works and the Site relating to Environment, Health & Safety (EH&S) matters including all relevant legislation and standard codes of practice.

Signature of Tenderer
With Date and Seal

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(SECTION-8)

CONTRACT DATA

Contract Data

Items marked "N/A" do not apply in this Contract.

The following documents are also part of the Contract:	**Clause Reference**
· The Schedule of Operating and Maintenance Manuals	[58]
· The Schedule of Sub Contractors	[7]
· The Schedule of Key Personnel	[9]
· The Methodology and Program of FPS works	[27]
· The Schedule of Key and Critical equipment to be deployed on the work as per agreed program of supply and Installation	[27]

The Employer is

Name: **The Director,**
Indian Institute of Tropical Meteorology (1.1)

Address: **Dr. Homi Bhabha Road, NCL post, Pashan, Pune.**

Name of authorized Representative:

Mr. Ravindra Bankar

Mechanical Engineer,

Indian Institute of Tropical Meteorology.

The Architect is (1.1)

Name: M/s.C.R.Narayana Rao Consultants private Ltd

Address: 10, Karpagambal Nagar, Luz, Mylapore, Chennai- 600004

Name of Authorized Representative: **Mr. C.S.Raghuram, Director**

The Adjudicator appointed jointly by the Employer and Contractor is:
Name (1.1)
Address :

The name and identification number of the Contract is
The Works consist of- FIRE PROTECTION SYSTEM WORKS FOR STUDENT/TRAINEE HOSTEL BUILDING FOR IITM AND IMD AT
IMD COLONY, PASHAN, PUNE

The Start Date shall be the date of receipt of L.O.I. (1.1)

The Intended Completion period for the work is 45 days from the receipt date of L.O.I.
[17, 28]

The following documents also form part of the Contract: [2.3]

1. **Agreement**

2. **Letter of Acceptance, notice to proceed with the works**

(1) Contractor‘s Bid
(2) Contract Data
(3) Conditions of Contract including Special Conditions of Contract .
(4) Specifications
(5) Drawings
(6) Bill of Quantities

The Contractor shall submit a revised Program including Environmental Management Plan for the Works (in such form and detail as the engineer shall reasonably prescribe) within _15_ days of delivery of the Letter of Acceptance. [27]

The Site Possession Dates shall be: 7 days from signing of agreement [21]

The Site is located at Indian Institute of Tropical Meteorology, Rajinder Nagar, New Delhi.

The Defects Liability Period is two years from the date of certification of completion of works. (where sectional completion certificate is issued this will apply from those dates for those sections). [35]

The period between Program updates shall be _15_ days. [27]

The language of the Contract documents is English [3]

The law which applies to the Contract is the laws of Union of India [3]

The currency of the Contract is Indian Rupees. [46]

Fees and types of reimbursable expenses to be paid to the Adjudicator [25]
Rs. 2000/- per day plus conveyance of Rs. 250/- per day.

Appointing Authority for the Adjudicator: - THE DIRECTOR
Indian Institute of Tropical Meteorology
Dr. Homi Bhabha Road,
NCL post, Pashan, Pune.

The proportion of payments retained (retention money) shall be 5% from each bill subject to a maximum of 5% of final contract price.

The liquidity damages.-clause 49

The amounts of the advance payment are: [51]

Nature of Advance	Amount (Rs.)	Conditions to be fulfilled
1. Mobilization advance for Plant advance. Machinery and Equipment	No Mobilization	
2. Secured advance for non- perishable materials brought to site	No secured advance.	

The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price: [52]

Performance Security for 5 per cent of contract price [in terms of ITB Clause [27.5].

The standard form of Performance Security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents.

The date by which operating and maintenance manuals are required is within 14 days of issue of certificate of completion of whole or section of the work, as the case may be. [58]

The date by which —as-built‖ drawings (in scale …) in 2 sets are required is Within 14 days of issue of certificate of completion of whole or section of the work, as the case may be. [58]

The amount to be withheld for failing to supply —as built‖ drawings and/or operating and maintenance manuals [58]

The following events shall also be fundamental breach of contract: [59.2]

The Contractor has contravened Sub-clause 7 of GCC read with SCC and Clause 9.0 of GCC

The contractor does not adhere to the agreed FPS supply and installation program and agreed environmental management plan (Clause 27 of GCC) and also fails to take satisfactory remedial action as per agreements reached in the management meetings (Clause 31) for a period of 60 days.

3 The contractor fails to carry out of the instructions of Engineer Within a reasonable time determined by the Engineer in accordance with GCC Clause 16.1 and 23.1.

The percentage to apply to the value of the work not completed representing the Employer's additional cost for completing the Works shall be 20%. [60]

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(SECTION-9)

FORMS OF SECURITIES

Forms of Securities

Acceptable forms of securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms at this time. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with one of the forms, or in a similar form acceptable to the Employer.

Annex A: Bid Security (Bank Guarantee)

Annex B: Performance Bank Guarantee

Annex C: Performance Bank Guarantee for Unbalanced Items

Annexure A

BID SECURITY (BANK GUARANTEE)

WHEREAS, _____ [name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated _____ [date] for the Fire Protection system works for student/trainee hostel for IITM and IMD at IMD colony, Pashan, Pune.(hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that We _____ [name of bank having our registered office at _____ (hereinafter called "the Bank") are bound unto The Director Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL post, Pashan, Pune, India.* (hereinafter called
"the Employer") in the sum of _____1 for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 2010____.

THE CONDITIONS of this obligation are:

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid; or

(2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of Bid validity:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or

(c) does not accept the correction of the Bid Price pursuant to Clause 27 of Instruction to Bidders;
We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____2 days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[signature, name, and address]

1 The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.245 days after the end of the validity period of the Bid.

Annexure B

PERFORMANCE BANK GUARANTEE

To:

The Director Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL post, Pashan, Pune, India.

WHEREAS _____ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute Fire protection system works for student/trainee hostel for IITM and IMD at IMD colony, Pashan, Pune.

(Hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee]1_____ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee]1 as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until …… (i.e.) 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

_____

□□An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.

Annexure C

PERFORMANCE BANK GUARANTEE (for unbalanced items)

To:

THE DIRECTOR, Indian Institute of Tropical Meteorology,
Dr. Homi Bhabha Road, NCL
post, Pashan ,Pune, India.

WHEREAS _____ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute Fire protection system works for student/trainee hostel for IITM and IMD at IMD colony, Pashan, Pune. (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee]1_____ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee]1 as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until …….. (i.e.) 28 days from the date of issue of the certificate of completion of works.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

_____

1. An amount shall be inserted by the Guarantor, representing additional security for unbalanced Bids,

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(SECTION-10)

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATION FOR FIRE FIGHTING SYSTEM

1.0 SCOPE OF WORK

The work to be carried out under this section shall include detailed design, supply, installation, testing, commissioning and handing over of the entire fire protection system. In addition to the above, getting the final NOC from the local fire authorities. This shall include item wise demonstration and training of all the equipment's installed, submission of as - built drawings both in hard and soft copies. Without restricting to the generality of the foregoing works, the scope of work shall include the following:

Firefighting pumps

Electric driven, pumps with all related electrical and mechanical works.

Hydrant system

External hydrant system with hoses, branch pipes, hose boxes etc. Internal Hose reel system with hoses, branch pipes, hose reels etc.

Sprinkler system

Automatic sprinkler system with installation control valve, sprinklers, air release valves etc. Extinguishers.

Portable first aid fire extinguishers.

2.0 deleted-

3.0 SPECIFICATIONS

Work under this contract shall be carried out strictly in accordance with specifications attached and all relevant latest Indian standards, National building code (NBC), Tariff Advisory Committee (TAC), **local fire approval authorities (fire service department)** & any other statutory bodies.

Items not covered under these specifications shall be carried out as per specifications of the latest local fire officer's regulations with the latest amendment applicable.

In the event of the works not covered by Indian standards, British / American standards shall be followed.

4.0 EXECUTION OF WORK

The work shall be carried out in conformity with the firefighting system drawings and within the requirements of architectural, HVAC, Electrical and other specialized service drawings.

5.0 DRAWINGS

Drawings submitted along with the tender are indicative drawings only and are meant for tender purpose only. The contractor shall submit the drawings to PMC / consultant / architect and get their approval before commencement of the work. Execution shall start only after getting the approval on the drawings. (Approved for supply and installation).

6.0 REFERNCE POINTS

All reference points shall be in relation to the levels and locations given in the architectural and fire fighting drawings.

7.0 RATES

Rates quoted shall be inclusive of detailed engineering, cost of material, labour, supervision, erection, tools, plant, scaffolding, service connections, transport to site, transit insurance, storage at site, taxes,

octroi, duties, breakage, wastage, pilferage, testing, commissioning, handing over, getting the approval from the local fire authorities and all such expenses as may be necessary and required to completely do all the items of work and put them in a working condition.
All rates quoted are inclusive of making holes and chases in walls and floors and making good the same with existing type and quality of material.

8.0 TESTING
Piping shall be tested as described further.
All materials and equipments found defective during testing / commissioning shall be replaced and retested to the same specifications.

9.0 DETAILED DESCRIPTION OF FIRE PROTECTION SYSTEM DESIGN
The system has been designed to basically meet the requirements of NBC - Part IV. Since the building come under Institutional Low Hazards Category, hence the building can be categorized as Class G1 occupancy. Taking into account the highest level of security and safety the fire protection system has been designed to meet the most stringent requirement and even supersede in case of water requirement and pump capacity.

The following fire protection systems are recommended to meet the requirements for statutory approval and for Life safety:

- External hydrant system - as per NBC 2005 section IV
- Internal hydrant system - as per NBC 2005 section IV
- Automatic sprinkler system - as per IS 15105
- Portable first aid fire extinguishers - as per IS 2190.

In spite of the above mentioned standards, all the systems should have the compliance of the authority having jurisdiction (i.e local fire brigade authorities).

10.0 FIRE WATER SUPPLY
The individual terrace shall have 10000 litres capacity tanks as per the Provisional NOC received installed above all the staircase of the premises.

11.0 FIRE FIGHTING PUMPS.
The selected pump capacity is recommended as per NBC - Part IV and as mentioned in the Provisional NOC received . This is done taking into account the significance and importance of the building.

Connecting shaft shall be stainless steel with bronze sleeve and grease lubricated bearings as per TAC regulations.

The pumps shall be connected to the drive by means of spacer type love - joy coupling which shall be individually balanced dynamically and statically.

The coupling, which joins the prime mover with the pump, shall be provided with a sheet metal guard. Pumps shall be installed on anti - vibration pads.

12.0 MOTORS
Electrical motors shall be Totally Enclosed Fan Cooled (TEFC) induction motors. Motors shall be equivalent to the horse power required to drive the pumps at 150 % of its rated discharge and shall be designed for continuous full load duty.
Motors shall be suitable for 415 Volts, 3 phase, 50 cycles AC supply and the protection shall be as per IP 56. The motors shall be as per IS: 325.

13.0 CONTROL PANELS

Switch board cubicles FOR EVERY PUMP of approved type shall be fabricated from 14 gauge MS sheet with dust and vermin proof installation. It shall be painted with one coat of red oxide primer and two coats of synthetic enamel paint of red colour as per shade No. 536 of IS:5 and suitably marked for identification. It shall be fitted with suitable etched plastic identification plates for each motor. The cubicle shall comprise of the following:

- Incoming main switch fuse unit of required capacity.
- Isolation switch fuse unit for each motor.
- Automatic DOL starter for the main pumps with push buttons one for each motor and ON / OFF / Trip indicating neon lamps.
- Single phasing preventor of appropriate rating for each motor.
- Rotary duty selector switch.
- Panel type ampere meters for each motor.
- Panel type voltmeter on incoming main with rotary selector switch to read voltage between phase to neutral and phase to phase.
- LED Phase indicating lamps for incoming main and on / off indicating lamps for each motor.
- Rotary switch for auto / manual operation.
- The panel shall be pre-wired with colour coded wiring including all interconnecting wiring from incoming main to switch gear, meters and accessories within the switchboard panel.
- Switch board cubicles shall be floor mounted as recommended by manufacturer and approved by client.
- The control panel should operate in such a way that the starting and stopping of the jockey has to be automatic in nature. Starting of the main pumps and the diesel engine operated pump has to be automatic in nature whereas the stopping of these pumps is to be done manually.

14.0 CABLES

The electrical department shall provide incoming cabling to the fire pump MCC.
Contractor shall provide all power, control cables from the motor control centre to motors,
Cables shall confirm to IS: 1554 and carry ISI mark.Wiring cables shall confirm to IS: 694
All power and wiring cables shall be copper conductor PVC insulated / armoured and PVC sheathed

1100 volts grade.

All control cables shall be copper conductor PVC insulated / armoured and PVC sheathed 1100 volts grade.

All cables shall have standard conductors.

All cable joints shall be made in approved manner as per the standard practice.

The selection of cable must be as per the recommendations of India Electricity rules.

15.0 CABLE TRAYS

The contractor shall provide MS Slotted cable trays at locations as required (inside the pump house only) and this has to be included in the cost of cabling items. Cable rays shall be supported from the bottom of the slab / wall face at intervals of 30 cm at both ends by welding support rods with insert plates to reinforcement bars. Cutting of holes in the slab for exposing of bars or making provisions on the wall and making good the same after welding / fixing of support bars shall be included as part of cabling work. Required cable ties / saddle spacers etc shall all be included in the contractors scope of work.

16.0 EARTHING

The entire earthing system shall fully comply with the India Electricity Act & Rules. The contractor shall carryout any changes desired by the electrical inspector or the owner, in order to make the installation confirm to the Indian Electricity rules. The exact location of earth conductor, earth electrodes and earthing points on the equipment shall be determined in the field. All hard ware used for earthing installation shall be hot dip galvanised. Spring washer shall be used for all earthing connections of equipments.

Following sizes of earth conductors shall be used for motors:

Upto 5 KW	8 SWG G.I. Wire
5 KW to 30 KW	25 mm * 3 mm G.I. Flat
Above 30 KW	32 mm * 6 mm G.I. Flat.

The complete earthing system for the firefighting system shall be included in the scope of work. This shall include earthing for MCC, motors, distribution boards, fire alarm systems, push button stations, gaseous system control panels and any other interconnections to make the system complete.

17.0 OPERATING CONDITIONS FOR THE FIRE PUMPS

PUMP	Cut in Pressure	Cut out Pressure	Remarks
Main Pump - 1	5.0 kg / cm2	Manual Stop	Auto start

18.0 PIPE AND FITTINGS

The pipes used for fire fighting shall be GI ERW HEAVY CLASS IS 1239 inclusive of all required fittings, flanges, nut bolts, anchor bolts, couplings, U clamps, of reputed make.

All pipes within the building shall be GI HEAVY CLASS ERW as per IS: 1239 for sizes upto 150 mm dia. 200 mm dia & above pipes shall be GIHEAVY CLASS C Class as per IS: 3589 with a minimum thickness of 6.35 mm For pipes 50 mm and below in diameter screwed joints shall be used and fittings shall be of malleable iron. For pipes 65 mm and above welded fittings shall be used. Flanges shall have appropriate number of holes as per the relevant IS standard and shall be fastened with nut bolts and 4 mm thk compressed asbestos gasket. The flanges shall be as per CLASS 150. Elbows and bends shall be seamless.

19.0 PIPE PROTECTION

All pipes above ground and in exposed locations shall be painted with 2 coats of Red oxide primer and 2 coats of synthetic enamel paint of fire red colour.

All pipes under ground shall be protected against soil corrosion by wrapping and coating material as

per IS: 10221.

Pipe coating and wrapping shall be done as follows:

- The pipe shall be cleaned using buffing wheel.
- Application of one coat of fiber, coal tar, and solvent based primer of density as recommended by the manufacturer. The primer shall be allowed to dry until the surface
  becomes tacky. The primer shall be applied by brushing so as to produce effective bond between metal and subsequent coating.
- Once the primer becomes tacky the anti corrosive tape (4 mm thk) shall then be applied. For
  this the tape is heated so as to get proper adhesions with the primer. The tape shall be applied
  with an overlap of not less than 15 mm. All the edges shall then be sealed in such a manner that there is no undercut to the installed tape.
- Each end of the pipe shall be left uncoated for welding purpose shall be hand coated and wrapped after field welding is completed and surface cleaned.

20.0 HOLIDAY TEST

On completion of the coating, it shall be tested using high voltage holiday detectors, to 11 Kv. All holidays found shall be repaired and the repairs be tested to ensure that adequate repairs have been made. Holiday testing shall be carried out once the pipes have been lowered in trenches and should be carried out with the help of detachable rings only. Testing by brush shall not be acceptable.

21.0 PIPE SUPPORTS

All under ground pipes shall be provided with suitable anchor blocks of ample dimensions in cement
concrete at all bends, tee connection and other places as required and necessary for over coming
pressure thrusts in pipes. Anchor blocks shall be of cement concrete 1:2:4 mix (cement : coarse sand : stone aggregate 20 mm nominal size).

Spacing of supports should be as follows:

• Pipes upto 65 mm dia	3.0 Meters.
• Pipes between 80 - 125 mm dia	3.5 Meters. •
Pipes between 150 - 250 mm dia	5.0 Meters. •
Pipes above 250 mm dia	7.0 Meters.

22.0 HYDRAULIC TESTING

Hydraulic testing of the entire fire fighting system (in stages & loops) during the course of installation shall be carried out a pressure of not less than 1.5 times the working pressure for a period of 2 hrs. The hydraulic test should be presented to the Engineer-in-charge before 11 am or after 4 pm.
However the final hydraulic testing shall be carried out at the working pressure for a period of 24 hrs.

23.0 WELDING

Welding shall be done in accordance with IS: 816 - latest revision.
Welding procedure shall be based on the specific analysis of any given heat of steel and shall be subject to the review of the Engineer-in-charge.
These procedures shall call for one or all of the following:

- Proper bead shape.
- Minimised penetration to prevent dilution of the weld metal with the alloy elements. • Preheating, controlled interpass temperature and controlled heat input.

Welding shall be performed only by qualified and tested welders specifically trained and experienced for the type of job required to execute the welding work. All the welders will have to pass a welders test and a weld piece welded on site in front of Engineer-in-charge will be sent to the laboratory for the X- ray and NDT tests.

Structural welding shall not commence until the joint elements are bolted or tacked in intimate contact and adjusted to dimensions shown with allowance for any weld shrinkage that is expected. Welding sequence shall be planned and controlled to minimize undue stress or undue distortations in restrained members and those having a high degree of restraint shall be welded with low hydrogen type electrodes.

Ratio of weld width to weld depth shall preferably vary from a minimum of 1 to 1 to a maximum 1.4 to 1.

TESTING OF WELDS

All welds shall be tested by Dye penetration test as per the latest practices.

At 10 % of all joints shall be radiographically tested as per IS: 1182 at the locations specified by the Engineer-in-charge. Percentage of welds to be tested may be increased or decreased by the Engineer-in-charge depending on the quality of welds and results obtained for previous weld tests.

QUALITY CONTROL FOR WELDING

Welding machines mobilised shall be in good working condition and shall have proper control for regulating current. Adequate spares shall be kept in stock at site during the execution of the work for routine maintenance. Location of welding machines and the distribution boards to be connected with them shall be decided in consultation with site electrical supervisor to avoid overloading of the distribution boards, cables and electrical power sources.
For executing site fabrication and welding, the electric cables, distribution boards and maintained in good working condition. Welding cables used shall have proper insulation throughout the length. The cables shall be carefully examined and repaired as necessary every day.
All welding shall be performed strictly in accordance with the welding requirements detailed in approved WPSs and ASME Boiler and Pressure vessel code section IX. Suitable WPSs to be adopted for welding are required to be qualified.

WELDING ELECTRODES

Generally all welding shall be performed using Shielded metal arc welding (SMAW) process with low hydrogen basic coated electrodes (i.e., E 7016 or E 7018 type). However, use of cellulosed-coated electrode (E 6010 type) shall be permitted for welding root run of full penetration groove welds. At least two runs with E 7018 electrode shall be made on socket weld and fillet welds.

Storing of welding electrodes:

Welding electrodes shall be stored indoors free from moisture. The package of the welding electrodes shall not be opened until immediately before use.

Drying of Welding Electrodes:

All hydrogen welding electrodes shall be dried in an electrode shall oven in accordance with the manufacturer's recommendation. After backing, the electrodes shall be stored in a holding oven or heated quivers. Welding electrodes not consumed in a day shall be baked by the same method, with only two re-baking permitted.

Handling of Welding Electrodes:

During welding work, welding electrodes shall be stored in heated quivers. The lid of the quiver shall be kept closed to ensure that the electrodes are not exposed to moisture in the atmosphere.

Brands of Welding Electrodes:

The following approved makes of welding electrodes shall be used during fabrication and erection

- Advani Oerlikon
- ESAB
- D & H Secheron, India,

Use of any other brand of electrodes is subject to approval by client.

No welding shall be done if there is impingement of any rain, or high winds on the weld area except when suitable protection or shield against the rain or wind is provided.

Tack welds may be done either with full penetration or as bridge tacks. If full penetration tacks are made, the ends shall be ground to featheredge and inspected for presence of any defect. If tacks are cracked, these shall be completely removed by grinding and the area shall be inspected by Dye Penetrant examination to ensure freedom from defects.

Before welding, the ends shall be cleaned by wire brushing, filling or grinding. Each weld-run shall be thoroughly cleaned to remove the slag, irregularities and any defects, before the next run is deposited. Welding of any joint shall be completes uninterrupted. If this cannot be followed for some reason, at least first two passes shall be welded prior to interruption.

CONTROL OF WELDERS

Qualification of welders

Qualified and certified welders only shall do welding. All welders assigned to the work shall be qualified by test as per the WPSs in accordance with ASME code Sec. IX and approved by QA/QC Engineer. Welders deployed for welding piping joints shall have qualification in SMAW process in 6G position in accordance with ASME code SEC. IX. Previously qualified welders, whose qualification is still valid, may be deployed subject to the Engineer-in-Charge's approval. Welding qualification records shall be maintained at site for reference of client at any time.

Instruction to Welders

Welding procedure and other related requirements should be fully explained to each welder and fitter prior to welding work. Welding shall not be started if bevel preparation and fit up of the base materials to be welded is not correct.

Identification of Weld

An identification number shall be given to each welder. Each weld shall be identified by marking

the welder's identification number given. This shall be marked on the welded seam or at an adjacent location with metal marker.

BOLTING PROCEDURE

All flanged joints shall be fitted so that the faces of the flanges meet evenly with the gasket, and then the bolts shall be tightened in a sequence to ensure uniform bolt stress.

In bolting flanged joints, the bolt shall be tightened in a proper manner to compress the gasket to build up compression suitable for the type of gasket used. Flanges shall be faced and have jointing of rubber insertion or asbestos compound.

All bolts shall extend completely and uniformly through their nuts. Bolt loads shall be in accordance with the manufacturer's recommendation.

INSPECTION BEFORE WEILDING

- Dimension and orientation of spool assembly and installed spool and / or piping components shall be checked with the piping drawings.
- Width of root opening, bevel angle and alignment of components shall also be checked on each joint fitted up.
- Surfaces to be welded shall be checked to ensure that they are clean and free from foreign material such as grease, oil, paint, scale, etc., for a distance of at least 25mm from bevel ends.

INSPECTION DURING WELDING

Crack in tack welds, alignment, welding slag, inter-run cleaning, welding current conditions and bead finish shall be checked. Any discrepancy or defects found shall be rectified immediately.

INSPECTION OF COMPLETED WELDS

All welds shall be visually inspected during and after welding by QA/Qc engineer / Engineer-in-Charge. Finished welds shall be visually inspected for parallel and axial misalignment, lack of fusion, un-repaired burn-through, size of fillet welds, dimensions and surface defects. After clearance of visual inspection, Dye penetrant examination, radiography shall be carried out as applicable. Joints close to the pumps (areas of cycling loading) shall be selected for radiography wherever radiography percentage is less than 100%.

- All the root welding shall be 100% Liquid Penetrant tested.
- 10% of the total finish welding shall be Liquid Penetrant tested.
- Liquid Penetrant or magnetic particle examination shall be performed in accordance with section V of ASME code.

ACCEPTANCE STANDARDS

Acceptance criteria for visual, dye penetrant inspection and radiography shall be in accordance with fire protection system specification, unless otherwise amended.

Under cutting adjacent to the final bead on the surface of the pipe shall not exceed 0.8mm in depth or 12 ½ % of the pipe wall thickness whichever is smaller.

The following defects are not acceptable:-

- Crack on external surface not acceptable
- Lack of fusion.
- Incomplete penetration.
- Reinforcement not greater than as indicated by the drawing / calculation.

REPAIR AND REMOVAL OF DEFECTS

Defects, which are not within the acceptable limits, as revealed in visual, and NDT shall be removed from the joint completely by air-arc gouging, chipping or grinding. If gouging is done, the gouged surface shall be ground to smooth white metal, prior to re-welding. The excavated grove after removal of defects shall be suitable for welding 1 re-welding shall be done in accordance with the WPS adopted for original weld.

When the whole joint is found unacceptable, the weld shall be cutout and the ends of the joints shall be restored according to relevant clauses under fabrication.

No repair shall be carried out without prior approval of the Engineer-in-charge.

Traces of jigs / stiffeners removed, undercutting, craters and beds shall be ground to sound metal and weld metal deposited, if necessary.

Repairs of weld reinforcement and overlap shall be ground and weld metal deposited.

Repairs of weld reinforcement and overlap shall be ground smooth. Spatter and slag shall be removed with a chipping hammer or by power wire brushing. A crack found visually shall be removed and examined by a magnetic particle or liquid penetrant test until assured that no defect remains. Only two repair attempts shall be allowed on any weld. If unacceptable defects are found after two repairs, the joint shall be cut out. A distance of 25mm shall be cut off from each prior to bevel preparation for the new joints.

24.0 PAINTING

Paint shall be thoroughly stirred before pouring in small containers and while applying to ensure uniform consistency. The operation for each coat shall consist of a stroke of the brush given form the top downwards, another from the bottom upward over the first stroke and similarly sideways before it dries. No brush marks, hair marks or clogging of paint puddles shall be left. Each coat shall be allowed to dry before the next coat is applied. After the work is complete, the brushes shall be cleaned of paint and linseed oil by rinsing by turpentine.Initial cleaning of the pipes by buffing wheel, to be followed by 2 coats of Zinc Chromate primer and followed by 2 Coats of Fire Red enamel paint.

25.0 Y-TYPE STRAINER

'Y' Type strainer consists of a cast iron body and cover with a removable perforated stainless steel / brass strainer. Flanges may be faced and drilled to BS: 10 Table F or IS: 1538 or ANSI 125/150, with flat face to suit matching flange

Working pressure = 10 Kg/sq. cm. Test Pressure = 15 Kg/sq. cm.

26.0 HOSE REELS

First-aid fire hose reels shall be 20mm diameter high pressure Dunlop rubber hose as per IS: 5132, 36.5m long with gun metal nozzle with 5mm bore and control valve, all mounted on circular hose reel of heavy duty mild steel and cast iron brackets, confirming to IS:884. the fire hose reel shall be connected directly to the M.S. pipe riser taken independently from the header.

27.0 AIR RELEASE VALVE

The mounting shall be screwed type. The material shall be gunmetal. This should be of spring type.

28.0 PRESSURE GAUGE

Fluid	-	Water
Working pressure	-	8.8 Kg / sqcm
Type	-	Diameterl type
Element	-	Bourdon tube element of SS 316
Dial Size	-	100 mm diameter & scale division shall be in metric units marked in B/W
Operating pressure	-	0 to 15 Kg/cm2
Connection size	-	½" NPT (M)
Case	-	Aluminum
Accuracy	-	+/- 1%

All pressure gauges shall be complete with isolation cock, copper tube, nipple tail pipes etc.

29.0 PRESSURE SWITCH

Fluid	-	Water
Working temperature	-	Ambient
Element type & material	-	Bellows type & phosphor bronze
Connection size	-	½" NPT (FM)
Switch type	-	Snap acting micro switch
Size of cable entry	-	½" NPT
Accuracy	-	+/- 0.5%
Type of enclosure	-	Dust proof
Voltage	-	230V, 50 Hz
Operating	-	Electrical contact closure

The pressure switch shall be industrial type single pole double throw electric pressure switch designed
for starting or stopping of equipment when the pressure in the system drops or exceeds the pre-set limits. It shall comprise of a single pole changeover switch, Bellows element assembly and differential spindle.
All the pressure switches shall have ¼" B.S.P. (F) inlet connection and screwed cable entry for fixing cable gland.

30.0 VALVES

Butterfly valves shall be tested to a minimum of 10 kg / cm2. The valves shall fulfill the requirements of BS: 5155 or AWWA C 504, API 609 and MSS-SP-67. The disc shall be heavy duty cast iron with anti corrosive epoxy or nickel coating. The valve seat shall be high grade elastomer or nitrile rubber. The shaft shall be of EN8 grade carbon steel. PN 16
Check valves shall be Cast Iron Double Flanged confirming to IS: 5312
Globe and gate valves 50 mm dia shall be of Gun metal confirming to IS: 778.
Valves shall include matching flanges, bolts, nuts, washers, gaskets etc.

31.0 VALVE CHAMBER

Contractor shall provide suitable brick masonry chamber in cement motor 1:5 on cement concrete foundations 150 mm thick in 1:5:10 mix. The chamber shall be constructed in such a manner that there is a minimum distance of 200 mm below the valve for free movement of the spanner and the internal

clear distance between the 2 walls should not be less than 1 Mtr. Water proofing should be carried out on the floor of the chamber. The walls should be plastered internally as well as externally. The chambers shall be covered with heavy duty Cast Iron covers.

32.0 HYDRANT VALVE

All the fire hydrant valves shall confirm to IS: 5290. The hydrants shall be oblique pattern and drilled to IS specifications. The valves shall have GM / SS body, must be single outlet and be provided with a metal chain and cap. The hydrants shall be ISI marked.

33.0 HOSES

The hoses shall be reinforced rubber lined hoses as per IS: 636 Type A with SS / GM male female couplings with SS / Cu binding. All hoses shall be 15 M long and 63 mm in diameter irrespective of whether they are going to be used as internal hoses or external hoses.

34.0 BRANCH PIPE

Branch pipe with nozzle shall be as per IS: 903, Short size of SS / GM. Also there is a provision for providing select-o-flow branch pipe with nozzle which will give a variable flow and pattern (i.e jet, fog, curtain).

35.0 HOSE BOX

Hose cabinets shall be fabricated from 16 gauge MS sheet with double glass fronted door, locking arrangement with breakable glass key arrangement duly painted Red with enamel paint (overall size 750 mm * 600 mm * 250 mm deep) suitable for wall mounting or pedestal mounting.

36.0 FIRE EXTINGUISHERS

Portable extinguishers are used to fight fires at incipient stages. The extinguishers shall be distributed throughout the building and placed at strategic locations as per the requirements as per IS 2190. ABC Type extinguishers have been proposed keeping in mind the simplicity of operation and its ability to fight all types of fires. Co2 extinguishers have been located only in the electrical panel / control rooms. All the extinguishers shall come with a pressure gauge (indicating gauge). All the extinguishers shall meet the required Indian standards and shall bear ISI mark.

37.0 INSTALLATION CONTROL VALVE (ALARM VALVE)

The installation control valve shall be double seated clapper type check valve. The body and cover shall be made from Cast Iron to IS: 210 grade F 200. The seat and clamp shall be made form bronze to IS: 318, LTB II grade. The sealing to the seat shall be neoprene gasket. The hinges pin and ball shall be of stainless steel.

The valve shall be suitable for vertical mounting and the direction of water travel shall be indicated on the surface. It shall be rated to 12 kg / cm2 and tested to 25 kg / cm 2 pressure.
A by-pass valve shall be fitted to adjust minor and slow variations in water pressure for balancing so as to avoid any false alarm.
The valve shall be provided with a test control box. The box shall house a lever to test and operate the ICV. A brass strainer shall also be provided at the point of water supply to the alarm gong. A retarding chamber shall also be provided. The chamber shall be able to balance the water pressure in case of water line surges.
Each valve shall consist of the following:

- Upstream gate valve.
- In and out pressure gauges.
- Test connection of adequate size with valve and orifice plate with pressure connections.
- Water motor gong with necessary piping, isolating valve, strainer and drain. This shall be

Mechanically operated by discharge of water through an impeller. The drive bearing shall be Weather resistant. A strainer shall be provided on line before the nozzle. The gong piece shall be constructed from bronze to IS: 318.

38.0 SPRINKLERS

Sprinkler heads spacing shall be in conformity with the drawings and properly coordinated with the electrical, HVAC and the plumbing departments.

Sprinkler heads shall be brass / chrome plated with a Quartzoid bulb operating @ 68 Deg C. Sprinkler shall be of a type and quality approved by the local fire brigade. The inlet shall be screwed. Sprinkler heads shall be pendant, recessed or sidewall type. All sprinklers shall be UL listed.

39.0 TENDER PRICE

The scope of work involves supply, installation, testing and commissioning of fire fighting system for as per schedule of quantities issued along with this specification.
Incoming cabling to the MCC is not included in this fire protection system scope of work.
Power / control cabling from fire pumps MCC / Control panel to individual pumps, pressure switches and other devices to be included in the scope of works.

40.0 GENERAL

Cost of painting of all equipment, piping, etc. shall be included in each item as given in the specifications. The contractor shall provide all anchor fasteners and their installations for successful completion of work.

All fire fighting equipment should have BMS compatibility.

TECHNICAL SPECIFICATION FOR THE FIRE ALARM AND SMOKE DETECTION SYSTEM

SCOPE OF WORK

The work to be carried out under this section shall include detailed design, supply, installation, testing, commissioning and handing over of the Fire alarm and smoke detection system.
Without restricting to the generality of the foregoing works, the scope of work shall include the following:
Addressable fire alarm systemAnalogue addressable fire alarm system with smoke detectors, manual call points, hooters and other required devices. Signages.Photo luminescent safety and evacuation signages.

LIST OF CODES FOR FIRE FIGHTING SERVICES:

Sl.No.	CODE NUMBER	DESCRIPTION
1.	NBC -	Part IVNational Building Code - Fire protection.
2.	TAC Manual	TAC's manual for fire hydrant system
3.	NFPA 72	Code of practice for automatic fire alarm system

SPECIFICATIONS

Work under this contract shall be carried out strictly in accordance with specifications attached and all relevant latest Indian standards, National building code (NBC), Tariff Advisory Committee (TAC), local fire approval authorities (fire service department) & any other statutory bodies.
Items not covered under these specifications shall be carried out as per specifications of the latest local fire officer's regulations with the latest amendment applicable.
In the event of the works not covered by Indian standards, British / American standards shall befollowed.

EXECUTION OF WORK

The work shall be carried out in conformity with the fire fighting system drawings and within the requirements of architectural, HVAC, Electrical and other specialized service drawings.

DRAWINGS

Drawings submitted along with the tender are indicative drawings only and are meant for tender purpose only. The contractor shall submit the drawings to PMC / consultant / architect and get their approval before commencement of the work. Execution shall start only after getting the approval on the drawings. (Approved for supply and installation).

REFERNCE POINTS

All reference points shall be in relation to the levels and locations given in the architectural and fire fighting drawings.

RATES

Rates quoted shall be inclusive of detailed engineering, cost of material, labour, supervision, erection, tools, plant, scaffolding, service connections, transport to site, transit insurance, storage at site, taxes, octroi, duties, breakage, wastage, pilferage, testing, commissioning, handing over, getting the approval from the local fire authorities and all such expenses as may be necessary and required to completely do all the items of work and put them in a working condition.

All rates quoted are inclusive of making holes and chases in walls and floors and making good the same with existing type and quality of material.

TESTING

Piping shall be tested as described further.

All materials and equipments found defective during testing / commissioning shall be replaced and retested to the same specifications.

DETAILED DESCRIPTION OF FIRE PROTECTION SYSTEM DESIGN

The system has been designed to basically meet the requirements of NBC - Part IV. Since the building consist of multiple types of occupancies hence the building can be categorized as Class D or Class E occupancy. Taking into account the highest level of security and safety the fire protection system has been designed to meet the most stringent requirement .

The following fire protection systems are recommended to meet the requirements for statutory approval

and for Life safety:

- Analogue addressable fire alarm system - as per NFPA 72.
- Photo luminescent safety signages - as required by the layout.

In spite of the above mentioned standards, all the systems should have the compliance of the authority having jurisdiction (i.e local fire brigade authorities).

10. ANALOGUE ADDRESSABLE FIRE DETECTION & ALARM SYSTEM

SCOPE:

This specification covers in general the requirements of independent Analogue addressable type fire alarm system and its associated accessories / components, which constitutes the fire alarm system.The scope comprises of supply, installation, testing and commissioning of Analogue Addressable Fire Alarm System in accordance with the specifications, drawings and schedule of quantities Microprocessor based addressable and intelligent (analogue) fire detection and alarm system complete with addressable, intelligent (analogue) head and smoke sensors & addressable manual call point and hooters and other accessories. The analogue addressable fire alarm control panel (FACP) shall function as fully stand-alone panel. FACP shall have its own microprocessor, software and memory complying with BS: 5839 Part 4 (1995).

CODES AND STANDARDS

The design, manufacture, testing, performance, etc. of the various components of the fire alarm system shall comply with latest applicable statutes, regulations and safety codes in the locality where the equipment shall be installed. Unless otherwise specified, the fire alarm system and the components shall conform to the latest applicable Indian or IEC standards. Equipment complying with other standards, such as British, USA, VDE etc. shall also be accepted if it is of reputed makes. The relevant Indian standards as listed below.

- NFPA 72
- IS: 2189 Code of practice for Automatic fire alarm system. • IS:

2175 Code of practice for Heat sensitive fire Detectors.

LIST OF FIRE ALARM EQUIPMENTS:

- Push button type addressable manual call points
- Analogue Addressable type multi-loop fire alarm panels. • Electronic Hooters (Addressable loop powered sounder)
- Addressable automatic fire detectors
- Short circuit isolator
- Response Indicator
- Control module
- Zone module
- Required Cables / Wires and
- Other accessories required for analogue addressable type fire alarm system.

SPECIFICATION FOR FIRE ALARM EQUIPMENTS

The equipment shall be suitable for satisfactory operation even when the supply voltage falls to 70% of their rated voltage.
The equipment shall be free from malfunctioning due to vibrations and mechanical shocks. All electrical contacts shall be capable of withstanding at least 10000 operations.

PUSH BUTTON TYPE ADDRESSABLE MANUAL CALL POINT
Each manual call point unit shall comprise of a push button of reputed make enclosed in M.S. box. The push button shall have minimum 1 NO + 1 NC contacts. The push button shall be shrouded and the same shall be projecting out from the surface of the M.S. box. This whole assembly of push button in MS box shall again be enclosed in an external M.S. enclosure with all sides covered except the front side. The front side shall be sealed with breakable glass cover using neoprene or equivalent gasket. The glass cover shall be fixed in such a way that the actuating push button is kept depressed (with 'NC' contact closed and 'NO' contact opened) so long as the glass cover is in tact. In case of fire, when glass cover is broken to give fire warning, the button shall be released due to spring action hence giving remote fire alarm through the 'NC' contact, which has now changed over.
Under normal conditions push button shall be in the depressed condition. In the case of fire when the glass cover is broken, the push button shall be released by the spring action and shall actuate an alarm at the control panel through its switching contacts.
In addition to this, there shall be a LED indicator on the monitor module for visual indication to locate the call point easily.
The manual stations shall be non-coded re-settable key type general alarm devices, painted red and suitable for surface of flush mounting. Manual stations shall be capable of being interfaced to a monitor module that is addressable. The manual station shall have normally open fire alarm and annunciator contacts and these contacts shall close on activation. Contacts shall remain closed until station is manually reset.

- The M.S. box and the external M.S. enclosure shall be completely dust, damp, weather and vermin proof. They shall be made of sheet steel of 16 gauge (minimum) thickness.
- The complete unit shall be suitable for wall / column mounting with necessary mounting accessories.
- The unit shall be suitable for mounting on freestanding pedestals wherever required.
- The complete unit and push button shall be painted 'signal red' (as per IS: 5 Shade 537). The internal surface of the external M.S. enclosure of box shall be painted with 'white' colour.
- The external painting shall be of chlorinated rubber based or epoxy or equivalent.
- Clear inscription reading in (English) 'FIRE ALARM - IN CASE OF FIRE, BREAK GLASS' shall be provided for each manual enclosure or on a separate metal plate mounted

behind the glass cover. Apart from this, inscription in the specified vernacular shall also be provided.

- The metal plate for inscription shall not tarnish under the atmospheric conditions.

Each manual call point unit shall be provided with the following accessories:

- An iron hammer of sufficient weight, which could be used to break the glass cover. The iron hammer shall be suspended on a hook fixed to the external MS enclosure by means of a non-corrodible iron chain of sufficient length and placed to facilitate easy breaking of the glass cover.
- Two numbers diametrically opposite earthing studs located on the outer surface of the external MS enclosure.
- An identification number (on a number plate), which shall be invariably same as the number given to the fire alarm indicating point on the remote fire alarm indicating panel.
- The details of numbering scheme shall be followed as per the final execution drawings.
- A dust-sealing gland or equivalent on the external MS enclosure for the outgoing cable from the unit.
- Compression type, cables terminating brass glands of reputed make for outgoing cable from the internal M.S. enclosure. If wires are being used, suitable arrangement shall be made for the end termination at the MCP as per standards.

ADDRESSABLE LOOP POWERED SOUNDER WITH FLASHER (ELECTRONIC HOOTER)

Depending on the floor area and its layout, external audible fire alarm hooter (loop powered sounder) shall be provided to give required sound level. The number of hooters and their spacing shall be sufficient to produce the sound levels as specified in IS: 2189.

The loop-powered sounder comprises of low profile design sounder and base for the analogue sensor, allowing solid state addressing either automatically by control panel or remotely. The unit can be installed swiftly and efficiently producing significant savings in labour and costs by wiring to only one unit. A selection of tones is available and the unit can be driven continuously or pulsed under full synchronization of the control panel, hence all sounders shall pulse at the same time.

The unit can also be mounted on a standard BESA box and adapts to a wall-mounted version by the simple addition of a clip to its cover.

The volume level can be varied from 75dB (A) or 95dB (A). Flasher should be an integral part of the loop sounder.

SHORT CIRCUIT ISOLATOR

The fault isolator devices detect and isolate a short - circuited segment of a fault tolerant loop. The devices automatically determine a return to normal condition of the loop and restore the isolated segment. One isolator is suggested for every 20 devices. This has LED that latches to indicate a short on the loop.

ANALOGUE ADDRESSABLE TYPE FIRE ALARM PANEL

Supply and install an analogue fully addressable type automatic fire alarm and control system as specified and as shown on the drawings and connect all components to from a complete system the approval of the local fire services authorities and complying with IS standard. The panel shall be capable of adding number of loops. The panel and the detectors shall be from the same supplier of the

system. This panel shall also be the control panel. The panel shall supervise the operation of sprinkler flow switches, detectors, break glass manual call point and main air-conditioning equipment.
The panel shall be of console type fitted with a hinged door or doors with stainless steel trim provided with chrome-plated combination locks. Two keys are to be provided to fit all locks.
For facilitating easy identification at the Analogue Addressable FAP in case of fire in an area, it may be necessary to divide the premises into more than one loop. Each loop shall be divided such that a loop as a maximum of 99 addressable detectors / addressable Manual calls points / addressable devices. Fire in each device shall be independently indicated in the FAP. This loop indication panel shall form nerve center of the complete fire alarm system in a particular loop consisting of various types of detectors both manual and automatic.
An Analogue Addressable Fire Alarm Control Panel (FACP) is provided to effect total control over the analogue detection devices required in the building. The FACP is of the digital, distribution, real time, multi tasking & multi-user type. The system is provided with addressable and analogue fire alarm initiating, annunciation and controlling devices. The Analogue addressable system is such that smoke sensors, heat sensors, manual call points, etc. can be identified with the point address.
FACP operates on 230V AC supply & Smoke detectors are powered using the FACP based smoke detection circuits. Devices receive power and communication from the same pair of conductors. FACP provides for resetting detectors, fault isolation and sensor loop operation. It is possible to mix different fire devices within the same loop to optimize field wiring.
FACP shall provide alarm indication on INDIVIDUAL sensors. Panel provides for detector trouble alarm indication for just accumulation. The panel checks each detector once every 24hrs for contamination for this purpose. Based on the site condition the user has the discretion to either clean the detector immediately or manually change the alarm threshold level on the panel (by programming) after ascertaining the trouble conditions and not developing alarm condition at the site.
Setting smoke detector sensitivity remotely possible from Analogue Addressable Fire Alarm system to either high sensitivity manually or pre-programmed sequence e.g. (Day/Night) period. The panel regularly supervises all the sensors and devices on the loop and initiates fire or trouble alarm whenever required.
The FACP processes requires the true continues analogue signal from the sensors. Whenever the detector reached the alarm threshold, detector sends out a dynamic analogue value corresponding to the temperature / smoke sensitivity level for display in the panel. An alarm condition is sensed at the FACP when an analogue sensor reports a value greater than the threshold value. Each thermal detector can be individually accessed from the panel and asked to display the actual temperature sensed by it.

The pre-alarm level for thermal detector and smoke detector is user defined. When the pre-alarm level is reached the panel signals warning at which moment the actual temperature / analogue valve corresponding to the pre-alarm smoke level is displayed.
The heat detector is designed to initiate an alarm at 135deg. F and to respond to increase in excess of 15deg. Per minute. Detectors shall be of self-locking, plug - in design for installation in pre - wired bases. Two visible LEDs on the detector shall blink-in standby and provide a 360-degree field-viewing angle. These shall latch permanently unless the alarm condition is rectified and the system is reset and the indicating detector returns to normal condition. The LEDs shall latch permanently unless reset, indicating the detector is in alarm condition. The detectors have field adjustable sensitivity and removable cover and insect screen for field cleaning. The detectors are suitable for a supply voltage of 24V DC without affecting its sensitivity and a built-in test switch. The base has a switch so that the loop is not disturbed even if one detector is taken out for servicing. The blinking LED indicates that the detector is functioning properly. All the detectors shall approved by TAC / UL / ULC / FM.

POWER SUPPLY

The control panel shall be provided with operating power from 240V, 50Hz single phase A.C. source. This power shall be converted into 24V DC for system operation by power supply unit. In the event of

failure of the operating supply, the system shall automatically transfer to standby battery supply. The battery shall be of the maintenance free and shall be housed inside the fire control panel.
The analogue addressable type fire alarm panel shall incorporate:

- Visible indication pinpointing the location of individual fire sensor. i.e., testing for zone or device locations.
- Audible alarms for fire and faults. Providing fast information on point of fire / fault complete with hard printout of date, time, device number, device type and text location.
- Necessary power supplies unit for the fire alarm system.
- Interrogating all devices continuously of their operating state by a microprocessor within the main control Panel.
- Controlling the operation / non-operation of the other mechanical and electrical system.
- Acknowledge, reset and test devices.

The scheme shall work as follows:

- The complete circuitry shall be fail proof as require in IS: 2189 - 1999.
- If required the panel shall have additional capacity to operate auxiliary equipment like fire dampers, fire closers, ventilation and / or pressurizing fans, emergency light, smoke exhausters, etc.
- Any auxiliary relays, which are required for the scheme, shall also be included in the scope of supply.
- The analogue addressable fire alarm panel be free standing type, totally enclosed, dust, damp and vermin proof fabricated with sheet of minimum 16 gauge thickness. The panel shall be painted as per standard with colour as specified.
- The panel shall be completely factory wired absolutely ready in all aspects for installation at site and termination of the external cables for which undrilled bottom gland plate shall be provided. The internal standard copper wires of minimum size rated for the current in the corresponding circuit. The minimum size of the wire shall not be less than 1.5sq.mm standard copper. Wiring shall be of switchboard type single core standard, annealed copper wire with PVC insulation.
- All wiring to be hooked up with external cables shall be terminated in suitable terminal blocks complete with washers, terminal screws, etc. 10% spare terminals shall be provided on the terminal blocks. The wiring termination shall be done using ferrules having indelible markings. Insulated sleeves shall be provided at terminations to reduce the possibility of short circuit between various wires. L & T shall be solely responsible for the correctness of the internal wiring and for the proper functioning of the equipment supplied.
- Neoprene or equivalent rubber gaskets shall be provided at all openings.
- All necessary relays, contractors, indicators, alarm push buttons, shall be housed in this panel.
- A power supply unit shall be provided inside the indicating panel as follows:-
- Silicon diode battery charger suitable for operation on the auxiliary power available at the risk / building. The capacity of the charger shall be such that the same can boost charge the

  battery (within 8hours) while supplying the rated load of the fire alarm system. Facilities shall be provided to limit the voltage supplied to the fire alarm equipment to their rated values during time of boost charging. The charges shall normally supply battery trickle charging current and the D.C. load of the fire alarm system. The battery shall normally float. In case the A.C. supply on the input side of the charger fails, the battery shall supply the complete fire alarm system.

- Battery bank shall be of adequate capacity to supply fire alarm system power for a period of

8 hours from the instant if charger on A.C. failure.

- Battery bank shall be of adequate capacity to supply fire alarm system power for a period of 8 hours from the instant if charger on A.C. failure.
- Switches, fuses, overload devices, voltmeter, ammeter and earth fault indication devices etc shall be provided for the power supply system
- Visible and audible annunciation for troubles or failure in the power system like 'charger failure' 'battery low voltage' etc. shall be furnished.
- Two numbers diametrically opposite earthing connections shall be provided on the zone indicating panels for connecting to the earth. All metal casing of devices inside the panel shall be connected to a common bush bar of 25x5mm copper cross-section provided at the bottom of the panel.
- The panel shall have provision to indicate all faults in a circuit for a two wire wiring system to the FAP.

FACILITIES

Facilities available on the main fire alarm panel shall include but not be limited to the following:-

- Common fire indication.
- Pre-alarm indication
- Device fault indication
- Device numbers with active condition
- Loop numbers with active condition
- Liquid Crystal Display (internal zonal repeater)
- Area group indication
- Isolation indication
- Common fault indication • Supply healthy indication • Alarm silence indication
- Evacuate indication

Manual call point (break glass)

- Seven (7) push button switch control shall be provided as below.
- Evacuate

  • Silence sounder / mute fault tone
  • Panel reset
  • Scroll display
  • Paper feed • Lamp test
  • Direct communication to local fire brigade station.

  Apart from all above, the following general facilities also shall be provide:-
  • Battery test facilities with numerical display for volt and current.
  • Space within panel for housing the batteries and charging equipment. Battery shall be of the seal recombination type.
  • Labelling to clearly indicate all equipment.

CABLING

The contractor shall supply and erect the cable, which conform to the following:
PVC insulated copper conductor armoured / unarmoured FRLS cable confirming to Indian or British

standards. Cables connected to the detector shall be properly clamped to the ceiling. Loop shall also be left where cables connects ALPS (hooters), panels, etc. appropriate glands shall be provided where the cable enters the junction box.
All the cables and wires shall be tagged for proper identification. Ferrules at junction shall identify wires and cables by colour bands at every 3m distance.
When connecting different buildings, etc., overhead lines fire alarm system shall not be used. This shall be laid underground according to IS: 1255-1983

RESPONSE INDICATOR
Response indicator shall be fabricated from 16-gauge MS fabricated box or in aluminium casing. The response indicator shall glow clearly in case the detector to which it is connected givers an alarm signal. The word "FIRE" shall be clearly written on the visible face of the box.
No company logo shall be printed on it. The response indicator shall also have the words "ROOM" or "ABOVE FALSE CEILING" screen printed on it, as the case may be. NOTE - ALL THE DEVICES MUST BE UL APPROVED

PHOTOLUMINESCENT SIGNAGES
The descriptive photo luminescent safety signage in different sizes / graphics / colours / texts can be made according to the standard for the following fire equipments / accessories / areas:-
Fire hose reel, Lifts, Fire extinguishers, Emergency exits, Analogue addressable Main fire alarm panel, Sprinkler control valves & Fire doors etc.
Photo luminescent safety signage plays a vital safety role in risk-prone areas and panic causing situation. Escape routes of public places, offices, institutions, etc can be marked with photo luminescent products to reduce confusion and fear in case of emergency. When the source of light suddenly goes off, photo luminescent materials glow settles to near continuous intensity.
This type of signages is Positive lifesaver during evacuation of buildings, in case of fire or other sudden emergencies.
The luminous components that make up materials are crystals consisting mainly of zinc sulphide in protective glass like shell; these crystal are incorporated in rigid plastic. In the presence of light, these crystal are excited and they glow brightly when light is not present. The crystal are made luminescent (glow in the dark) by the action of light. The term phosphorence is sometimes used to describe luminescence, but these signage materials contain no phosphorus. The intense glow is instantly visible in the dark but the glow intensity keeps decreasing continuously but can last for more than eight hours. This photo luminescent safety signage shall be non-toxic, non-radioactive and containing no phosphorus or lead or any other hazardous element or chemical. These shall be highly versatile and considerably less expensive than other forms of emergency lighting. These are ready to use, easily applied, long - lasting, virtually maintenance free and indefinitely reusable. Fluorescent light shall excite more crystal than incandescent light

TENDER PRICE
The scope of work involves supply, installation, testing and commissioning of fire alarm system for as per schedule of quantities issued along with this specification.
Incoming cabling to the panel is not included in this fire protection system scope of work.

All Smoke detection equipment should have BMS compatibility.

Mode of Measurement

General:

The supply items shall include the main items specified, standard accessories and fittings.

Installation:

The installation rates shall include the installation, testing and commissioning of the entire system. The rate shall include all fixing materials, accessories, consumables, tools and instruments required for installation, testing and commissioning.

All measurements for piping shall be at the center line of the piping work.

The installation of the material supplied by the owner shall include taking delivery and transporting of the material to the site.

Measurements and rates as mentioned here are applicable for item rate tender only**.**

Document Submission

Contractor shall prepare and submit 'As Built' drawings for all the jobs carried out by him.

Test reports for all the material supplied by him shall be submitted.

O & M annuals for the bought-out items supplied by Contractor shall be submitted.

SPECIAL CONDITIONS FOR ERECTION CONTRACT

1. PROGRAMME :

The Contractor shall prepare, in consultation with the Owner, a programme for the completion of the work, which may be carried by agreement in writing between the Owner and the Contractor. The contractor shall maintain progress throughout the contract period so as no to delay other traders or Contractors.

2. DIMENSIONS :

Dimensions are to be adhered to as stated in the specifications or as figured on the drawings. Large scale details and written particulars furnished by the Owner are to be used in preference to small scale drawings and are to be strictly followed as to their true intent and meaning. However, Contractor should check physical dimensions before proceeding with any work. Any discrepancies between drawings and physical dimensions to be brought to the notice of Owner's Site Engineer.

3. INCLEMENT WEATHER:

The Contractor shall take note of the climatic conditions as pertaining to the areas in which the works are located and shall be deemed to have included all costs for protecting from injury by weather all works and materials that may be so affected.

4. FREE ISSUE OF MATERIALS:

All items of equipment as accepted by the Contractor from the Owner's store or from any other place shall be erected by the Contractor without any damage.

5.0 SUPERVISION OF WORK:

The Owner reserves the right to interview the Contractor's nominated site representative and skilled tradesmen either prior to the award of the contract or prior to commencing work on site. Should the nominated representative not be considered suitable, the Contractor shall provide further representatives and skilled tradesmen for interview until such time as the Owner is satisfied that a

competent man will be appointed. That the Owner may have approved the appointment will in no way relive the Contractor of any responsibility under the terms of contract. All costs including travelling expenses etc., incurred by the Contractor in following the above procedure shall be born by the Contractor.

6 LABOUR DISPUTE :

The Contractor shall keep the Owner fully informed on all matters concerning labour disputes, strikes, etc., involving the Contractor's labour force and the effects on the progress of work. The Owner shall be kept fully informed of the course of action proposed to remove or alleviate the cause of the dispute.

7 COMPLETION :

7.1 Completion shall be as defined in the Time Schedule.

7.2 Following completion, the Contractor shall have the rights of access to all parts of the plant at all reasonable
time in so far as operation of the plant by the Owner permits for the purpose of completing outstanding work and inspection and making tests and modifications to fulfill obligations under the contract. Such access shall be at the Contractor's risk. The Contractor shall not bring visitors to the plants as potential customers or for other purpose without prior agreement in writing of the Owner on each occasion.

8.0 RESPONSIBILITIES OF OWNER :

8.1 Provide an adequate area adjacent to the site to accommodate the Contractor's temporary facilities.

8.2 Provide and maintain suitable access to the job sites for the Contractor's personnel, equipment and materials.

8.3 Provide electrical power at a convenient location to be mutually decided between erection contractor and the Owner. Provide water at one point in the site.

9.0POSSESSION OF SITE :

The Owner shall give the Contractor facilities for carrying out the works on the site from the date set for the beginning of work on the site. Access to a possession of the site shall not be exclusive to the Contractor.
The Contractor shall give to any other Sub-Contractor every reasonable facility for the execution of concurrent work.

10.0 The Contractor will arrange to carry out all necessary work associated with holes for pipes though brick work, concrete or steel work and for drilling all holes for fixings.

11.0 HOTOGRAPHS:
The Contractor 11.0 Photographs: Contractor shall not take photographs of any part of the works without the written permission of the Owner

12.0 CONSUMABLES

The Contractor shall use all the consumables but not limited to industrial gas, argon gas, oil & grease, jointing compounds, PTFE tape, emery tape, cleaning rags, saw blades, welding filter wires and electrodes.

13.0 CONTRACTORS CONTROL:

It is the intention of the Owner to monitor and control progress of the works and authorise interim payments. The Owner will expect the full co-operation of the Contractor in the preparation of the valuations and reporting systems and the contractor's price is inclusive of all such costs.

14.0 OTHER CONTRACTORS:

The Contractor shall take fully into account the effect of other concurrent work being carried out in the area or on the same site by other Contractors on the site will be expected from the contractors to ensure that the works are completed in a trouble free, efficient and neat manner.

ADDITIONAL CONDITIONS

Please note all required tools tackles, ladders, scaffolding etc. for execution / completion of site shall be organised by the successful contractor for carrying out their work.
Main incoming supply 3phase/ 1phase, 415V/230V, 50hz, will be provided by the buyer at one point .The successful contractor shall carry out further distribution to his user point.

The buyer shall carry out all required major civil work like opening in walls & making good of all holes. All fire seals for the openings shall be carried out by the successful contractor of F-90 Class

All required labour and material handling equipment required for execution at site shall be organised by the successful contractor for carrying out their work.

Please note all the labour engaged at site for execution of work shall be covered under ESI/PF as per the government rules, and all necessary details shall be submitted to the client before starting the execution work at site.

The contractor shall have a comprehensive all risk (CAR) & Workman Compensation (WC) of the full amount of the contract value.

For carrying out extra work or if the contractor decides to work after duty hours, special permission shall be taken from the authorities before doing so.

All labour employed at site shall use safety belts, safety shoes, safety gloves, boiler suit, safety helmet, safety goggles etc., If any of the contractor found not adhering to the safety precautions, his work at site would be stopped immediately & a penalty of Rs.1,000/- per day will be charged to him. However this delay should not reflect in the overall project delay, as it might lead to penalty as per the LD clause.

STATUTORY OBLIGATIONS

The Contractor shall observe that the working as intended in the document is adhered to or conforming to and NOT NECESSARILY BE LIMITED to the following standard regulations:

i)FACTORIES ACT as amended (latest)

ii) Explosive Act.

iii) Safety regulations laid down by Central Government and state Authorities and the Owner.

iv) Indian Electricity Rules and Regulations.

v) Standard Codes for Pressure Piping (ASA B31.3.1973)

vi) Statutory requirements for inspection and test of all lifting appliances and auxilliary lifting gear.
vii) Labour Act.

viii) Local-By-Laws.

ix) Regulations laid by the Fire Safety Committee, Insurance Association of India.
1.2 In case of conflict between these specifications and the standards which come into force shall be considered as included and applicable to the work covered here and elsewhere in this document.

---------- END OF SECTION ----------

INDIAN INSTITUTE OF TROPICAL METEROLOGY, IITM PUNE

PROPOSED CONSTRUCTION OF HOSTEL FOR STUDENTS AT IMD COLONY, PASHAN, PUNE

BILL OF QUANTITIES

FIRE FIGHTING SYSTEM - BILL OF QUANTITIES -R3-18/12/2015

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
A	**FIRE PUMPS AND ACCESSORIES**				
1	**MAIN ELECTRICAL DRIVEN FIRE PUMPSET**				
	Supply, installation, testing and commissioning of electrically driven pump set as per specification. Motor TEFC type, 2900 rpm, 415V, 50 cycle frequency 3 phase class 'F' insulation, I.P. 55 protection, 55kW, starting on DOL. The Pump shall be horizontal, end suction, top discharge. The pump shall have cast iron casing, bronze impeller, steel shaft with common base frame capable of discharging 2280 LPM at 88 meter head.	Sets	2		
2	**JOCKEY PUMPSET**				
	Supply, installation, testing and commissioning of electrically driven Vertical In line pump set as per specification. Motor TEFC type, 2900 RPM 415 V, 50 cycles, 3 phase, class 'F' insulation, IP 55 protection, 3.7kW starting on DOL. The pump shall be made up of complete stainless steel with common base frame capable of discharging 180 LPM at 88 meter head.	Sets	1		
3	**BOOSTER PUMP**				
	Supply, installation, testing and commissioning of electrically driven end suction centrifugal pump set as per specification. Motor TEFC type, 2900 RPM 415 V, 50 cycles, 3 phase, class 'F' insulation, IP55 protection, 11 kW starting on DOL. The pump shall be made up of stainless steel with common base frame capable of discharging 900 LPM at 35 meter head.	Sets	1		
3.1	Supply and installation of Y strainer of 100NB with necessary flanges / Grooved joints, nut, bolts & washers, painting, etc. complete as required	Nos	1		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
4	Supply, installation, testing and commissioning of Self Priming tank shall be made out of HDPE heavy duty with necessary inlet, outlet, over flow, drain and float valve and electronic type level indicator etc. Tank shall be cylindrical in shape and shall be mounted vertically. The quoted rate shall be inclusive of concrete bed / steel supports. Tank capacity: 1500 Liters	Nos	1		
5	Supply and erection of Water Dial Type Pressure gauges complete with ball valve, valve mounting, fittings and copper tubing extension where required	Nos	3		
6	Supply and erection of Test Array Arrangement for pumpset with pressure gauge of 150mm dia (1 No.), pressure switch (3 Nos.), snipers, ball valves / NRV, pipes and fittings etc. as per drawing.	Sets	1		
6.1	Supply and erection of Test Array Arrangement for pumpset with pressure gauge (1 No.), pressure switch (1 Nos.), valves, pipes and fittings etc. as per drawing	Sets	1		
7	Supplying and installation of Ball type foot valve with non return valve as per specification with necessary flanges / Grooved joints, nut, bolts & washers, painting, etc. complete as required				
	200NB	Nos	2		
	80 NB	Nos	1		
8	Installation of Butterfly valve UL/FM Global approved, 300 psi (2065 kPa), grooved ends, polyphenylene sulfide (PPS) coated ductile iron body (ASTM A-536, Grade 65-45-12). Ductile iron disc, synthetic rubber encapsulated suited for the intended service, with integrally cast stem. Complete with weatherproof actuator and pre-wired supervisory switches. Victaulic Series 705 FireLock® or Series 707 FireLock® developed for fire pump metering test lines per NFPA 20 and rooftop test units, as well as pressure reducing valve by-pass lines per NFPA 14. Victaulic FireLock® Series 765 shall be used for high pressure systems up to 365 psi CWP.etc. complete as required(**Victaulic coupling and valves will be provided by Client)**				
a	150 NB	Nos	16		
b	100NB	Nos	5		
b	65 NB	Nos	1		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
c	50 NB	Nos	4		
9	Installation of Non-Return Valves b. 4”(DN100) through 12”(DN300) Sizes Spring Assisted: Black enamel coated ductile iron body, ASTM A-536, Grade 65-45-12, elastomer encapsulated ductile iron disc suitable for intended service, stainless steel spring and shaft, welded-in nickel seat, 250 psi (1725 kPa). Victaulic Series 717. Designed to accept a riser check kit. Victaulic Series 717R., etc. complete as required . **(Victaulic coupling and valves will be provided by Clien**t)				
a	150 NB	Nos	7		
b	100 NB	Nos	1		
10	Supplying and installation of Non-Return Valves with flanged/grooved joints,nuts bolts,& washers ,painting, etc.complete as required.				
a	50 NB	Nos	4		
11	Supplying and installation of Brass made, chrome finished Ball valves with fittings grooved end type as per specification with necessary accessories, painting, etc. complete as required.				
b	50 NB	Nos	5		
c	25 NB	Nos	41		
12	Supply & installation of 25 NB CI Automatic Air Release Valve along with ball valve all complete as per specifications.	Nos	4		
	TOTAL AMOUNT FOR SECTION-A FIRE PUMPS AND ACCESSORIES				
B	**HYDRANT SYSTEM**				
	Note: All the above ground piping joints shall have grooved fittings. No welding joints are permitted.				

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
1	**Under Ground piping** - Supply, erection, testing and commissioning of **Galvanised Iron (GI)** pipes conforming to IS 3589 for 200NB & above and IS 1239 for 150NB & below with necessary joints and fittings (heavy class forged fittings of IS standards) including cutting the pipes to correct length, providing and welding flanges to pipe, concrete pedestal / Thrust blocks and supporting arrangements, etc as per specifications of the following diameters. Rates shall be inclusive of 10% radiograph test complete as per specifications of the following diameters and all necessary supports. . **(Victaulic coupling and valves will be provided by Client)**				
a	150 NB - Class C	Rmtr	230		
b	80 NB - Class C	Rmtr	8		
2	Above Ground piping - Supply, erection, testing and installation of Galvanised Iron (GI) pipes conforming to IS 3589 for 200NB & above and IS 1239 for 150NB & below with necessary Grooved fittings including cutting the pipes to correct length, providing flanges to pipe, etc as per specifications of the following diameters. Rate shall be inclusive of Zinc chromate primer over that 2 coats red enamel paint as per Fire authorities requirement over all above ground pies and also inclusive of making hole in the wall, chasing, chipping, making good with plastering after completion of work, pipe sleeve of suitable higher size, sealing the sleeves with glass wool & fire sealant, etc. Cost of Steel supports for piping clamps, tie rods, brackets, nuts and bolts etc shall also be included in the quoted rate. (**Victaulic coupling and valves will be provided by Client)**				
a	200 NB - 6mm thick min	Rmtr	10		
a	150 NB - Class C	Rmtr	290		
b	100 NB - Class C	Rmtr	26		
c	80 NB - Class C	Rmtr	20		
d	65 NB - Class C	Rmtr	6		
e	50 NB - Class C	Rmtr	20		
f	25 NB - Class C	Rmtr	40		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
3	Supply, installation, testing and commissioning of Gun metal Single headed hydrant valve as per IS: 5290 consisting of 63NB single outlet flanged oblique type hydrants valve with instantaneous female plunger type coupling, chained blank cap including making flanged joints by providing necessary nuts, bolts, gaskets all complete as per specifications suitable for 80 NB stand post.	Nos	39		
4	Supply and installation of Hose cabinet consists of 2 Nos RRL Type-A hoses of 63mm Dia x 15 meters long with heavy quality gun metal male coupling as per IS: 903 combined with 1 Nos of nozzle and 1 No of branch pipe. The hose cabinet shall be of reputed manufacturer with MS sheet (16 SWG thick) of size 750x600x250 with glass fronted door, painted in red out side and white in inside, hose boxes along with GI support arrangements as per specifications	Nos	39		
5	Supply & Installation of drum type wall mounting hose reels, swiveling 180^{o} consisting of 19 mm Dia, 30 meters length rubber hose pipe with 6 mm Dia. bronze shut of type jet nozzle & cut-off valve on the inlet including making connection to the wet riser, by drilling welding, fixing the hose reel to the wall by providing necessary anchor fasteners/ expansion bolts, grouting the same with cement mortar, painting all complete as per drawings, specifications.	nos	33		
6	Supply and fixing of Fire shaft door fabricated out of M.S. sheet and frame, door shall be 900mm x 1500mm min with double leaf. & fixed with 4 mm thick Glass, suitable Rubber beading and Locking arrangement. Quoted rate shall be includes all fasteners etc, and complete shutter shall be powder coated of approved colour both inside and out side.	Nos	33		
6.1	M.S. hose cabinet stand mounted type fabricated out of M.S. sheet of 16 swg. With glass fronted (4mm thick glass with rubber beading) door and size of cabinet shall be 600mm x 750mm x 250mm quoted rate shall be includes suitable stand for mounting all fasteners etc. and cabinet shall powder coated of approved colour both inside and outside.	Nos	6		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
7	Supply & installation of Fire Brigade inlet connection with provision for Four male instantaneous coupling fabricated out of 150 mm Dia. approved make heavy class MS pipe for fire fighting system including necessary fittings to the fire storage tank, ring mains of hydrant system. Rate shall inclusive of 150NB Victaulic butterfly valve & single plate slim check valve, painting the same with 2 coats of red enamel paint over a coat of Zinc Chromate primer all complete as per drawings and specifications.	Nos	2		
8	Supply & installation of Fire Brigade inlet connection with provision for Two male instantaneous coupling fabricated out of 100 mm Dia. approved make heavy class MS pipe for fire fighting system including necessary fittings to the fire storage tank, ring mains of hydrant system. Rate shall inclusive of 100NB cast Victaulic butterfly valve & check valve, painting the same with 2 coats of red enamel paint over a coat of Zinc Chromate primer all complete as per drawings and specifications.	Nos	3		
9	Supply and wrapping of 4mm thick Anti-corrosive Coating & Wrapping Materials manufactured as per IS: 10221 for underground Pipes as per specification	Sqm	130		
10	Excavation of earth and refilling with river sand or quarry dust (should not damage the wrapping material), 250 mm above and below of pipe then with earth compaction upto formed ground level.				
a	Hard rock	Cu.m			
b	Soft Sand	Cu.m	545		
11	Construction of the valve chamber shall be 600x900mm. Adequate PCC's shall be provided and then valve chamber shall be constructed with brick work of 9 inches thick and plastering on both sides. The cover slab shall be of MS deck slab. Adequate rungs shall be provided for getting down into the valve chamber.	Nos	3		
12	Supply, fabricating , installing structural steel supports for fixing all sizes of GI pipes from ceiling / wall with MS Channels, Angles, Flats, as required at site complete with painting.	kg	820		
	TOTAL AMOUNT FOR SECTION-B HYDRANT SYSTEM				
C	**PORTABLE FIRE EXTINGUISHERS**				

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
1	Supply, installation, testing and commissioning of following types of extinguisher with provision of wall bracket (fixed with anchor fastener) as per the specifications. All extinguishers should have the in-built pressure gauge. All extinguishers shall be free from CFC / HCFC.				
a	ABC type Fire Extinguisher - 4 kg	Nos	40		
b	Carbon Dioxide Fire Extinguisher- 3Kg	Nos	36		
2	Supplying and installing at approved location approved make fire buckets (4 Nos) of 24 gauge galvanized steel sheet, standard 9 litre capacity and of round bottom shape, painted white inside and red outside and black on the bottom, inscribed with letters “FIRE” in black and gold. Cost shall be inclusive of providing MS stand duly painted over a coat of primer.	Sets	4		
	TOTAL AMOUNT FOR SECTION-C PORTABLE FIRE EXTINGUISHERS				
D	**FPS RELATED ELECTRICAL WORKS**				
1	**FIRE FIGHTING PANEL**				
a	Design, Supply, Installation, testing and commissioning of cubicle type floor mounting switch board comprising of the following, the board shall be fabricated as per the detailed specification enclosed.	Nos	1		
	The below mentioned ratings are indicative only however the contractor shall have to select the suitable rating breakers, switches, starters and related accessories based on the selected motors				
	Incoming				
	2 No of 250A TP & N 35kA MCCB with cable box (as per type-2 co-ordination), making necessary interconnection, painting, earthing etc., and suitable fixing arrangement as required.				
	Instrument Panel				
	Digital type Ammeter, Voltmeter, selector switches, CTs, control fuses, one set of R,Y,B Indicating Lamps with control switches and one set of ON/OFF/TRIP indicating lamp with protective fuses for incomers				
	Outgoing				
i	100A TP&N MCCB (as per type-2 co-ordination) 35kA with Star/Delta starter with all connected accessories with ON/OFF/TRIP indicating lamp, ON/OFF push buttons and all other required accessories for 55 kW Fire Pump - 2 Working + 1 Spare				

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
ii	63A TP&N MCCB (as per type-2 co-ordination) 25KA with DOL starter with all connected accessories with ON/OFF/TRIP indicating lamp, ON/OFF push buttons and all other required accessories for 3.7 kW Jockey Pump - 1 Working + 1 Spare				
	With necessary Aluminium busbars, interconnections, earthing etc., with required accessories as per the specifications. 400 Amps 4P Aluminium busbars: - All the neutral busbars shall have the SAME capacity of phase busbars.	Nos	1		
	NOTE:- Control & interlock arrangement in between Jockey Pump & Electrical Pump 1 & 2 shall be enclosed in the panel. The panel shall also be provided with industrial hooter for alarm.				
2	Supply, installation, testing and commissioning of Terrace Pump panel with Type-2 Co-ordination DOL starters for the booster pump and complete with auto/manual switch, timers, rotary switches, indication lamps, enclosure being vermin & dust proof (IP65), necessary alarms, push buttons, etc. The panel shall also be provided with industrial hooter for alarm.	Nos	1		
3	Supply and fixing of lockable type push button control with Suitable enclosure box (IP65) for ON / OFF in stilt floor with supports suitable for floor / wall mounting arrangements	Nos	1		
4	Supply, Laying, Testing and Commissioning of the following size PVC insulated and PVC sheathed / XLPE Power cable of 1.1KV grade FRLS Aluminium / Copper conductor armoured/unarmoured cables. The cables shall be laying on the existing cable trench in ground / existing hume pipe / existing Masonry cable duct / existing cable tray and partially laid on wall/ceiling with suitable clamps & necessary fixing accessories etc. as required. Rate shall inclusive of Double compression cable gland and suitable Copper crimping sockets/lugs, crimping paste, sleeves, ferrules etc., as required				
a	4 Core 25 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	50		
b	4 Core 16 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	Qro		
c	4 Core 2.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	120		
a	3.5 Core 120 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	15		
b	4 Core 10 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	80		
c	3 Core 2.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	15		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
d	2 Core 1.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	60		
h	Design, supply and laying of 25 x 3 mm GI flat run along the cable tray	Rmtr	40		
5	Design, supply and laying of 40 x 6 mm GI flat run along the cable tray	Rmtr	40		
6	Design, supply and laying of 8 gauge bare copper wires for Gland earthing, loop earthing in the existing surface/recessed steel conduit, pump earths and other equipment body earthing as required.	Rmtr	60		
7	Supply and laying of suitable size electrical rubber mats tested to 433V, with grooved ISI Mark. The mat shall be provided to equal length the panels with a width of 1 meter	Lot	2		
	Note: - The plant room earthing has to be terminated with the existing electrical earth pits.				
8	Supply, erection of following sizes GI ladder type cable rack system made out of sheet steel folded to required shape with adequate number of supports. The rate shall be inclusive of suitable hanging support				
a	150mm x 75mm x 2.0mm	Rmtr	55		
b	300mm x 75mm x 2.0mm	Rmtr	10		
	TOTAL AMOUNT FOR SECTION-D FPS RELATED ELECTRICAL WORKS				
E	**FIRE ALARM SYSTEM (WIRED)(As per Standard codes)**				
	Design ,Supply,Delivering at site, receiving at site,installation, testing and commissiong of following Fire Alram System as per tender specification and system architect drawing.The complete Fire Alarm system shall be as per EN/UL standard.				

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
1	Supply, Installation, Testing and Commissioning of Microprocessor based inteligent and electronically addressable, modular, expandable networkable, 4 loops Panel (expandable) with each loop cosisting of prefarablly a minimum of 125 detector/devices. Fire alarm control panel with 5.7 inch LCD display, multiple acess levels, up to 4000 event history logs in the non volatile memory (EEPROM). The panel should be modular microprocessor based in nature and should be expandable from single loop to up to 10 loops. The panel shall have 240V AC power supply, Automatic battery charger, 24V , sealed lead acid maintanence free battries sufficient for 24 hours normal working and then be capable of operating the system for 30 mins during emergency condtion with integration to BMS Backnet software.The panel shall be with in built printer.	Nos	1		
2	Supply, Installation, Testing and Commissioning of addressable smoke detector including mounting base with LED… etc. complete as required with inbuilt isolator & Drift Compensation feature .	Nos	325		
3	Supply, Installation, Testing and Commissioning of addressable thermal detector including mounting base with LED… etc. complete as required with inbuilt isolator. Temperature sensor triggers @ 54deg C or 69deg C & Drift Compensation feature .	Nos	60		
4	Supply, installation, testing and commissioning of Manual call points pull stations of approved make with NO/NC contacts slim type and projecting out from the surface of enclosure with glass suitable for addressable function	Nos	40		
5	Supply, installation, testing and commissioning of Hooter with relay module and strobe light with minimum 85 db audible and control relay module, power supply units etc	Nos	40		
6	Require No. of Fault isolation module to electrically isolate different sections of detector loops.	Nos	20		
7	Wiring to the detectors/devices using 2C x 0.75 sq mm PVC insulated flexible copper conductor (FRLS) in suitable size PVC pipe in concealed system in the floor/ceiling with all accessories like bends,elbows,junction boxes, clamps, GI flexible hose etc.,	Rmtr	4500		
8	PA system addressing to all floors with speaker at each floor in all wings	set	1		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
	TOTAL AMOUNT FOR E- FIRE ALARM SYSTEM (WIRED)				
	OR				
E-1	**FIRE ALARM SYSTEM (WIRELESS)(As per Standard codes)**				
1	Wireless Addressable Centralized Monitoring Station (CMS PANEL) With TWO Way Communication Using Mesh Topology Technology. Using 7'' Colour Display	Nos	1		
2	Wireless Addressable Smoke Cum Heat Detector. With TWO Way Communication Using Mesh Topology Technology.	Nos	350		
3	Wireless Addressable Local Hooter Panel.	Nos	40		
4	Wireless Addressable Manual Call Point(MCP).With TWO Way Communication Using Mesh Topology Technology.	Nos	40		
5	Fitting accessories,Fiber Boxes,Power Supply Cabale,Screw,Panel Feting Screw. And Installation	Lot	1		
6	PA system addressing to all floors with speaker at each floor in all wings	Set	1		
	TOTAL AMOUNT FOR E-1 -FIRE ALARM SYSTEM (WIRELESS)				
F	**Victaulic couplings and fitting(only Labour charges)**	Lot	1		
G	**Miscellaneous**				
1	**Signages-All necessary signages required as per norms shall be supplied and erected by contractor.**				
a	FIRE EXIT signage (ie. GROUND FLOOR…..etc.) at each stair enclosure on every floor ,indicating the floor number in words , lettering size shall be 7.5cm with contrasting colour from back ground on 3mm alcobond sheet autoglow type . Size shall be 365mm x 119mm .	Nos	33		
b	Floor indentification signage (ie. GROUND FLOOR…..etc.) at each stair enclosure on every floor ,indicating the floor number in words , lettering size shall be 7.5cm with contrasting colour from back ground on 3mm alcobond sheet autoglow type . Size shall be 15cm x 60cm .	Nos	33		
c	Do not use lift during fire	Nos	11		
d	Staircase signage for fire staircase	Nos	33		
e	All emergency numbers 2x2 ft	Nos	3		

Sr.No	Item Decription	Unit	Quantity	Make	Make
				First	Second
f	Fire panel signage and manual call point.	Nos	10		
g	No smoking and fire extinguisher	Nos	33		
h	Safe assembly point 2x2 ft.	Nos	4		
i	Hydrant hose reel	Nos	33		
2	Government Approvals-Preparing and submission of all drawings and documents for the purpose of obtaining NOC from Local Authority, arranging for inspection by Local Authority and obtaining of Completion certification from Fire Authority including all non statutory liaison and follow up charges. Statutory payments shall be reimbursed by client upon production of receipts, challans, demand notice, etc.	LS	1		
	TOTAL FOR F- MISCELLANEOUS				
	TOTAL AMOUNT FOR FIRE FIGHTING SYSTEM WORKS (A+B+C+D+E+F)				
	Total amount in Word=				

IITM

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

ESSO

PRISE BID

FIRE PROTECTIONSYSTEM BOQ SUMMARY :IITM -PASHAN				
S.No. & Section		DESCRIPTION	18.12.2015	
			Amount in Rs.	
			Supply	Installation
1	A.	FIRE PUMPS AND ACCESSORIES		
2	B	HYDRANT SYSTEM		
3	C	PORTABLE FIRE EXTINGUISHERS		
4	D	FPS RELATED ELECTRICAL WORKS		
5	E	FIRE ALARM SYSTEM (WIRED)		
6	F	VICTAULIC COUPLINGS AND FITTINGS (ONLY LABOUR CHARGES)		
		TOTAL OF FIRE PROTECTIONSYSTEM COST		
		TOTAL SUPPLY & INSTALLATION COST OF FIRE PROTECTION SYSTEM		**wired**
		IN WORDS=		
		TOTAL SUPPLY & INSTALLATION COST OF FIRE PROTECTION SYSTEM		**wireless**
		IN WORDS=		

INDIAN INSTITUTE OF TROPICAL METEROLOGY, IITM PUNE

PROPOSED CONSTRUCTION OF HOSTEL FOR STUDENTS AT IMD COLONY, PASHAN, PUNE

BILL OF QUANTITIES

FIRE FIGHTING SYSTEM - BILL OF QUANTITIES -R3-18/12/2015

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
A	**FIRE PUMPS AND ACCESSORIES**											
1	**MAIN ELECTRICAL DRIVEN FIRE PUMPSET**											
	Supply, installation, testing and commissioning of electrically driven pump set as per specification. Motor TEFC type, 2900 rpm, 415V, 50 cycle frequency 3 phase class 'F' insulation, I.P. 55 protection, 55kW, starting on DOL. The Pump shall be horizontal, end suction, top discharge. The pump shall have cast iron casing, bronze impeller, steel shaft with common base frame capable of discharging 2280 LPM at 88 meter head.	Sets	2									
2	**JOCKEY PUMPSET**											
	Supply, installation, testing and commissioning of electrically driven Vertical In line pump set as per specification. Motor TEFC type, 2900 RPM 415 V, 50 cycles, 3 phase, class 'F' insulation, IP 55 protection, 3.7kW starting on DOL. The pump shall be made up of complete stainless steel with common base frame capable of discharging 180 LPM at 88 meter head.	Sets	1									
3	**BOOSTER PUMP**											
	Supply, installation, testing and commissioning of electrically driven end suction centrifugal pump set as per specification. Motor TEFC type, 2900 RPM 415 V, 50 cycles, 3 phase, class 'F' insulation, IP55 protection, 11 kW starting on DOL. The pump shall be made up of stainless steel with common base frame capable of discharging 900 LPM at 35 meter head.	Sets	1									
3.1	Supply and installation of Y strainer of 100NB with necessary flanges / Grooved joints, nut, bolts & washers, painting, etc. complete as required	Nos	1									
4	Supply, installation, testing and commissioning of Self Priming tank shall be made out of HDPE heavy duty with necessary inlet, outlet, over flow, drain and float valve and electronic type level indicator etc. Tank shall be cylindrical in shape and shall be mounted vertically. The quoted rate shall be inclusive of concrete bed / steel supports. Tank capacity: 1500 Liters	Nos	1									
5	Supply and erection of Water Dial Type Pressure gauges complete with ball valve, valve mounting, fittings and copper tubing extension where required	Nos	3									
6	Supply and erection of Test Array Arrangement for pumpset with pressure gauge of 150mm dia (1 No.), pressure switch (3 Nos.), snipers, ball valves / NRV, pipes and fittings etc. as per drawing.	Sets	1									
6.1	Supply and erection of Test Array Arrangement for pumpset with pressure gauge (1 No.), pressure switch (1 Nos.), valves, pipes and fittings etc. as per drawing	Sets	1									

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
7	Supplying and installation of Ball type foot valve with non return valve as per specification with necessary flanges / Grooved joints, nut, bolts & washers, painting, etc. complete as required											
	200NB	Nos	2									
	80 NB	Nos	1									
8	Installation of Butterfly valve UL/FM Global approved, 300 psi (2065 kPa), grooved ends, polyphenylene sulfide (PPS) coated ductile iron body (ASTM A-536, Grade 65-45-12). Ductile iron disc, synthetic rubber encapsulated suited for the intended service, with integrally cast stem. Complete with weatherproof actuator and pre-wired supervisory switches. Victaulic Series 705 FireLock® or Series 707 FireLock® developed for fire pump metering test lines per NFPA 20 and rooftop test units, as well as pressure reducing valve by-pass lines per NFPA 14. Victaulic FireLock® Series 765 shall be used for high pressure systems up to 365 psi CWP.etc. complete as required(**Victaulic coupling and valves will be provided by Client)**											
a	150 NB	Nos	16	**Victaulic coupling and valves will be provided by client**								
b	100NB	Nos	5									
b	65 NB	Nos	1									
c	50 NB	Nos	4									
9	Installation of Non-Return Valves b. 4”(DN100) through 12”(DN300) Sizes Spring Assisted: Black enamel coated ductile iron body, ASTM A-536, Grade 65-45-12, elastomer encapsulated ductile iron disc suitable for intended service, stainless steel spring and shaft, welded-in nickel seat, 250 psi (1725 kPa). Victaulic Series 717. Designed to accept a riser check kit. Victaulic Series 717R., etc. complete as required . **(Victaulic coupling and valves will be provided by Clien**t)											
a	150 NB	Nos	7	**Victaulic coupling and valves will be provided by client**								
b	100 NB	Nos	1									
10	Supplying and installation of Non-Return Valves with flanged/grooved joints,nuts bolts,& washers ,painting, etc.complete as required.											
a	50 NB	Nos	4									
11	Supplying and installation of Brass made, chrome finished Ball valves with fittings grooved end type as per specification with necessary accessories, painting, etc. complete as required.											
b	50 NB	Nos	5									
c	25 NB	Nos	41									
12	Supply & installation of 25 NB CI Automatic Air Release Valve along with ball valve all complete as per specifications.	Nos	4									
	TOTAL AMOUNT FOR SECTION-A FIRE PUMPS AND ACCESSORIES											
B	**HYDRANT SYSTEM**											
	Note: All the above ground piping joints shall have grooved fittings. No welding joints are permitted.											

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
1	**Under Ground piping** - Supply, erection, testing and commissioning of **Galvanised Iron (GI)** pipes conforming to IS 3589 for 200NB & above and IS 1239 for 150NB & below with necessary joints and fittings (heavy class forged fittings of IS standards) including cutting the pipes to correct length, providing and welding flanges to pipe, concrete pedestal / Thrust blocks and supporting arrangements, etc as per specifications of the following diameters. Rates shall be inclusive of 10% radiograph test complete as per specifications of the following diameters and all necessary supports. . **(Victaulic coupling and valves will be provided by Client)**											
a	150 NB - Class C	Rmtr	230									
b	80 NB - Class C	Rmtr	8									
2	Above Ground piping - Supply, erection, testing and installation of Galvanised Iron (GI) pipes conforming to IS 3589 for 200NB & above and IS 1239 for 150NB & below with necessary Grooved fittings including cutting the pipes to correct length, providing flanges to pipe, etc as per specifications of the following diameters. Rate shall be inclusive of Zinc chromate primer over that 2 coats red enamel paint as per Fire authorities requirement over all above ground pies and also inclusive of making hole in the wall, chasing, chipping, making good with plastering after completion of work, pipe sleeve of suitable higher size, sealing the sleeves with glass wool & fire sealant, etc. Cost of Steel supports for piping clamps, tie rods, brackets, nuts and bolts etc shall also be included in the quoted rate. (**Victaulic coupling and valves will be provided by Client)**											
a	200 NB - 6mm thick min	Rmtr	10									
a	150 NB - Class C	Rmtr	290									
b	100 NB - Class C	Rmtr	26									
c	80 NB - Class C	Rmtr	20									
d	65 NB - Class C	Rmtr	6									
e	50 NB - Class C	Rmtr	20									
f	25 NB - Class C	Rmtr	40									
3	Supply, installation, testing and commissioning of Gun metal Single headed hydrant valve as per IS: 5290 consisting of 63NB single outlet flanged oblique type hydrants valve with instantaneous female plunger type coupling, chained blank cap including making flanged joints by providing necessary nuts, bolts, gaskets all complete as per specifications suitable for 80 NB stand post.	Nos	39									
4	Supply and installation of Hose cabinet consists of 2 Nos RRL Type-A hoses of 63mm Dia x 15 meters long with heavy quality gun metal male coupling as per IS: 903 combined with 1 Nos of nozzle and 1 No of branch pipe. The hose cabinet shall be of reputed manufacturer with MS sheet (16 SWG thick) of size 750x600x250 with glass fronted door, painted in red out side and white in inside, hose boxes along with GI support arrangements as per specifications	Nos	39									
5	Supply & Installation of drum type wall mounting hose reels, swiveling 180^{o} consisting of 19 mm Dia, 30 meters length rubber hose pipe with 6 mm Dia. bronze shut of type jet nozzle & cut-off valve on the inlet including making connection to the wet riser, by drilling welding, fixing the hose reel to the wall by providing necessary anchor fasteners/ expansion bolts, grouting the same with cement mortar, painting all complete as per drawings, specifications.	nos	33									

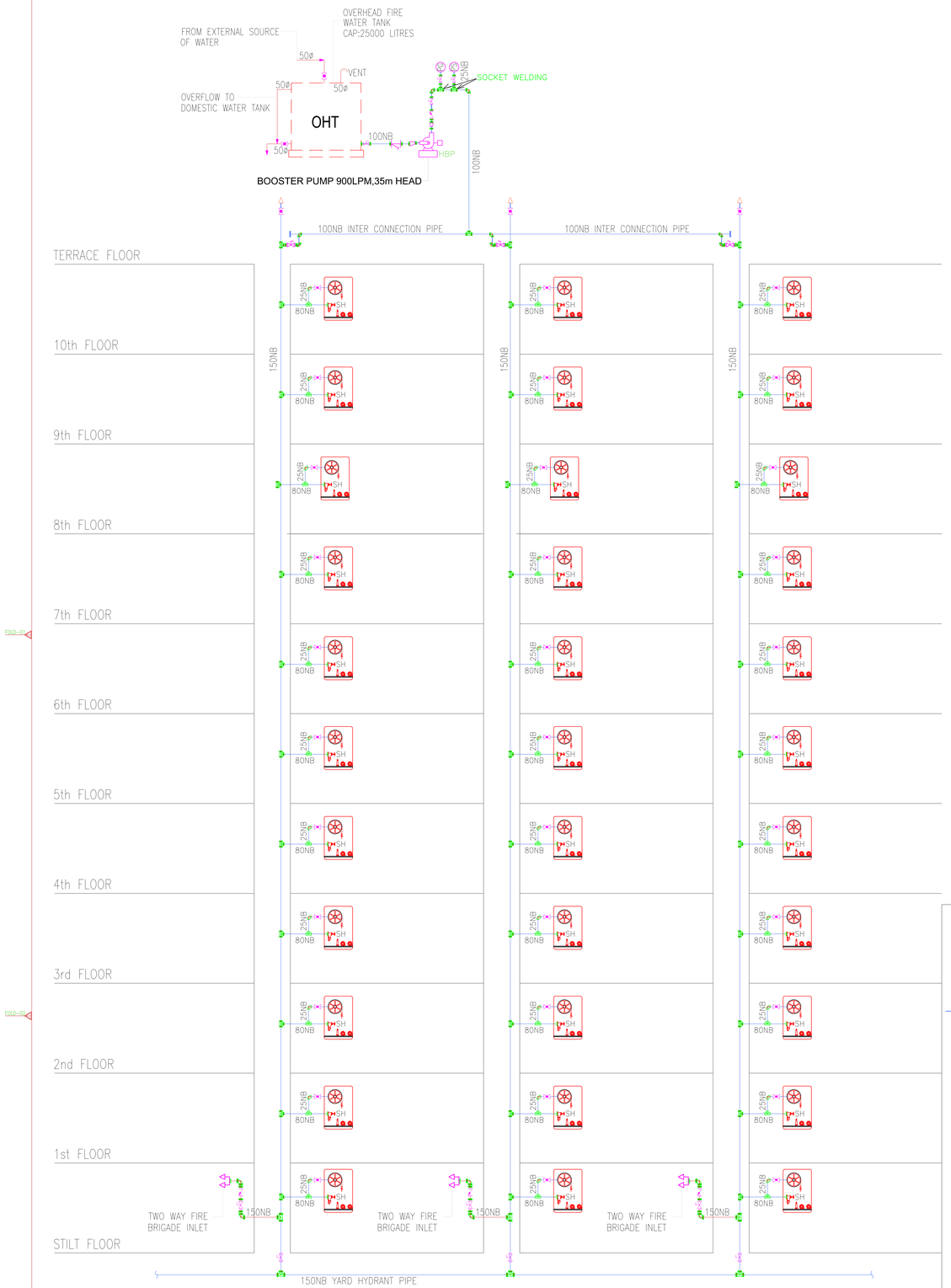
Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
6	Supply and fixing of Fire shaft door fabricated out of M.S. sheet and frame, door shall be 900mm x 1500mm min with double leaf. & fixed with 4 mm thick Glass, suitable Rubber beading and Locking arrangement. Quoted rate shall be includes all fasteners etc, and complete shutter shall be powder coated of approved colour both inside and out side.	Nos	33									
6.1	M.S. hose cabinet stand mounted type fabricated out of M.S. sheet of 16 swg. With glass fronted (4mm thick glass with rubber beading) door and size of cabinet shall be 600mm x 750mm x 250mm quoted rate shall be includes suitable stand for mounting all fasteners etc. and cabinet shall powder coated of approved colour both inside and outside.	Nos	6									
7	Supply & installation of Fire Brigade inlet connection with provision for Four male instantaneous coupling fabricated out of 150 mm Dia. approved make heavy class MS pipe for fire fighting system including necessary fittings to the fire storage tank, ring mains of hydrant system. Rate shall inclusive of 150NB Victaulic butterfly valve & single plate slim check valve, painting the same with 2 coats of red enamel paint over a coat of Zinc Chromate primer all complete as per drawings and specifications.	Nos	2									
8	Supply & installation of Fire Brigade inlet connection with provision for Two male instantaneous coupling fabricated out of 100 mm Dia. approved make heavy class MS pipe for fire fighting system including necessary fittings to the fire storage tank, ring mains of hydrant system. Rate shall inclusive of 100NB cast Victaulic butterfly valve & check valve, painting the same with 2 coats of red enamel paint over a coat of Zinc Chromate primer all complete as per drawings and specifications.	Nos	3									
9	Supply and wrapping of 4mm thick Anti-corrosive Coating & Wrapping Materials manufactured as per IS: 10221 for underground Pipes as per specification	Sqm	130									
10	Excavation of earth and refilling with river sand or quarry dust (should not damage the wrapping material), 250 mm above and below of pipe then with earth compaction upto formed ground level.											
a	Hard rock	Cu.m										
b	Soft Sand	Cu.m	545									
11	Construction of the valve chamber shall be 600x900mm. Adequate PCC's shall be provided and then valve chamber shall be constructed with brick work of 9 inches thick and plastering on both sides. The cover slab shall be of MS deck slab. Adequate rungs shall be provided for getting down into the valve chamber.	Nos	3									
12	Supply, fabricating , installing structural steel supports for fixing all sizes of GI pipes from ceiling / wall with MS Channels, Angles, Flats, as required at site complete with painting.	kg	820									
	TOTAL AMOUNT FOR SECTION-B HYDRANT SYSTEM											
C	**PORTABLE FIRE EXTINGUISHERS**											
1	Supply, installation, testing and commissioning of following types of extinguisher with provision of wall bracket (fixed with anchor fastener) as per the specifications. All extinguishers should have the in-built pressure gauge. All extinguishers shall be free from CFC / HCFC.											
a	ABC type Fire Extinguisher - 4 kg	Nos	40									

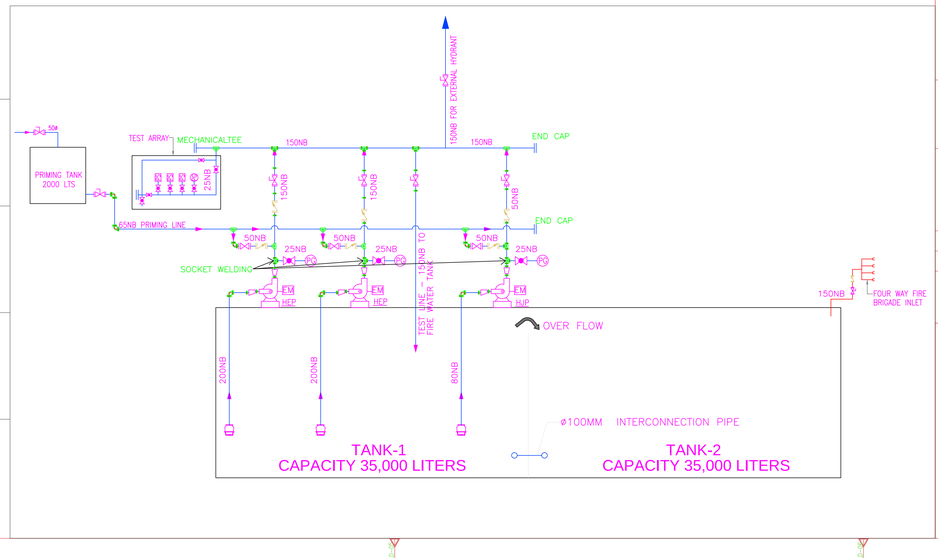
Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
b	Carbon Dioxide Fire Extinguisher- 3Kg	Nos	36									
2	Supplying and installing at approved location approved make fire buckets (4 Nos) of 24 gauge galvanized steel sheet, standard 9 litre capacity and of round bottom shape, painted white inside and red outside and black on the bottom, inscribed with letters “FIRE” in black and gold. Cost shall be inclusive of providing MS stand duly painted over a coat of primer.	Sets	4									
	TOTAL AMOUNT FOR SECTION-C PORTABLE FIRE EXTINGUISHERS											
D	**FPS RELATED ELECTRICAL WORKS**											
1	**FIRE FIGHTING PANEL**											
a	Design, Supply, Installation, testing and commissioning of cubicle type floor mounting switch board comprising of the following, the board shall be fabricated as per the detailed specification enclosed.	Nos	1									
	The below mentioned ratings are indicative only however the contractor shall have to select the suitable rating breakers, switches, starters and related accessories based on the selected motors											
	Incoming											
	2 No of 250A TP & N 35kA MCCB with cable box (as per type-2 co-ordination), making necessary interconnection, painting, earthing etc., and suitable fixing arrangement as required.											
	Instrument Panel											
	Digital type Ammeter, Voltmeter, selector switches, CTs, control fuses, one set of R,Y,B Indicating Lamps with control switches and one set of ON/OFF/TRIP indicating lamp with protective fuses for incomers											
	Outgoing											
i	100A TP&N MCCB (as per type-2 co-ordination) 35kA with Star/Delta starter with all connected accessories with ON/OFF/TRIP indicating lamp, ON/OFF push buttons and all other required accessories for 55 kW Fire Pump - 2 Working + 1 Spare											
ii	63A TP&N MCCB (as per type-2 co-ordination) 25KA with DOL starter with all connected accessories with ON/OFF/TRIP indicating lamp, ON/OFF push buttons and all other required accessories for 3.7 kW Jockey Pump - 1 Working + 1 Spare											
	With necessary Aluminium busbars, interconnections, earthing etc., with required accessories as per the specifications. 400 Amps 4P Aluminium busbars: - All the neutral busbars shall have the SAME capacity of phase busbars.	Nos	1									
	NOTE:- Control & interlock arrangement in between Jockey Pump & Electrical Pump 1 & 2 shall be enclosed in the panel. The panel shall also be provided with industrial hooter for alarm.											
2	Supply, installation, testing and commissioning of Terrace Pump panel with Type-2 Co-ordination DOL starters for the booster pump and complete with auto/manual switch, timers, rotary switches, indication lamps, enclosure being vermin & dust proof (IP65), necessary alarms, push buttons, etc. The panel shall also be provided with industrial hooter for alarm.	Nos	1									
3	Supply and fixing of lockable type push button control with Suitable enclosure box (IP65) for ON / OFF in stilt floor with supports suitable for floor / wall mounting arrangements	Nos	1									

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
4	Supply, Laying, Testing and Commissioning of the following size PVC insulated and PVC sheathed / XLPE Power cable of 1.1KV grade FRLS Aluminium / Copper conductor armoured/unarmoured cables. The cables shall be laying on the existing cable trench in ground / existing hume pipe / existing Masonry cable duct / existing cable tray and partially laid on wall/ceiling with suitable clamps & necessary fixing accessories etc. as required. Rate shall inclusive of Double compression cable gland and suitable Copper crimping sockets/lugs, crimping paste, sleeves, ferrules etc., as required											
a	4 Core 25 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	50									
b	4 Core 16 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	Qro									
c	4 Core 2.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	120									
a	3.5 Core 120 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	15									
b	4 Core 10 Sq.mm XLPE Aluminium Armoured FRLS Cable	Rmtr	80									
c	3 Core 2.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	15									
d	2 Core 1.5 Sq.mm PVC Copper Armoured FRLS Cable	Rmtr	60									
h	Design, supply and laying of 25 x 3 mm GI flat run along the cable tray	Rmtr	40									
5	Design, supply and laying of 40 x 6 mm GI flat run along the cable tray	Rmtr	40									
6	Design, supply and laying of 8 gauge bare copper wires for Gland earthing, loop earthing in the existing surface/recessed steel conduit, pump earths and other equipment body earthing as required.	Rmtr	60									
7	Supply and laying of suitable size electrical rubber mats tested to 433V, with grooved ISI Mark. The mat shall be provided to equal length the panels with a width of 1 meter	Lot	2									
	Note: - The plant room earthing has to be terminated with the existing electrical earth pits.											
8	Supply, erection of following sizes GI ladder type cable rack system made out of sheet steel folded to required shape with adequate number of supports. The rate shall be inclusive of suitable hanging support											
a	150mm x 75mm x 2.0mm	Rmtr	55									
b	300mm x 75mm x 2.0mm	Rmtr	10									
	TOTAL AMOUNT FOR SECTION-D FPS RELATED ELECTRICAL WORKS											
E	**FIRE ALARM SYSTEM (WIRED)(As per Standard codes)**											
	Design ,Supply,Delivering at site, receiving at site,installation, testing and commissiong of following Fire Alram System as per tender specification and system architect drawing.The complete Fire Alarm system shall be as per EN/UL standard.											

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
1	Supply, Installation, Testing and Commissioning of Microprocessor based inteligent and electronically addressable, modular, expandable networkable, 4 loops Panel (expandable) with each loop cosisting of prefarablly a minimum of 125 detector/devices. Fire alarm control panel with 5.7 inch LCD display, multiple acess levels, up to 4000 event history logs in the non volatile memory (EEPROM). The panel should be modular microprocessor based in nature and should be expandable from single loop to up to 10 loops. The panel shall have 240V AC power supply, Automatic battery charger, 24V , sealed lead acid maintanence free battries sufficient for 24 hours normal working and then be capable of operating the system for 30 mins during emergency condtion with integration to BMS Backnet software.The panel shall be with in built printer.	Nos	1									
2	Supply, Installation, Testing and Commissioning of addressable smoke detector including mounting base with LED… etc. complete as required with inbuilt isolator & Drift Compensation feature .	Nos	325									
3	Supply, Installation, Testing and Commissioning of addressable thermal detector including mounting base with LED… etc. complete as required with inbuilt isolator. Temperature sensor triggers @ 54deg C or 69deg C & Drift Compensation feature .	Nos	60									
4	Supply, installation, testing and commissioning of Manual call points pull stations of approved make with NO/NC contacts slim type and projecting out from the surface of enclosure with glass suitable for addressable function	Nos	40									
5	Supply, installation, testing and commissioning of Hooter with relay module and strobe light with minimum 85 db audible and control relay module, power supply units etc	Nos	40									
6	Require No. of Fault isolation module to electrically isolate different sections of detector loops.	Nos	20									
7	Wiring to the detectors/devices using 2C x 0.75 sq mm PVC insulated flexible copper conductor (FRLS) in suitable size PVC pipe in concealed system in the floor/ceiling with all accessories like bends,elbows,junction boxes, clamps, GI flexible hose etc.,	Rmtr	4500									
8	PA system addressing to all floors with speaker at each floor in all wings	set	1									
	TOTAL AMOUNT FOR E- FIRE ALARM SYSTEM (WIRED)											
	OR											
E-1	**FIRE ALARM SYSTEM (WIRELESS)(As per Standard codes)**											
1	Wireless Addressable Centralized Monitoring Station (CMS PANEL) With TWO Way Communication Using Mesh Topology Technology. Using 7'' Colour Display	Nos	1									
2	Wireless Addressable Smoke Cum Heat Detector. With TWO Way Communication Using Mesh Topology Technology.	Nos	350									
3	Wireless Addressable Local Hooter Panel.	Nos	40									
4	Wireless Addressable Manual Call Point(MCP).With TWO Way Communication Using Mesh Topology Technology.	Nos	40									
5	Fitting accessories,Fiber Boxes,Power Supply Cabale,Screw,Panel Feting Screw. And Installation	Lot	1									

Sr.No	Item Decription	Unit	Quantity	Supply					Installation			
				Rate	Basic Cost	Duties & Taxes		Total -Rs	Rate	Basic Cost	Taxes	Total -Rs
						%VAT	VAT				Service Tax	
6	PA system addressing to all floors with speaker at each floor in all wings	Set	1									
	TOTAL AMOUNT FOR E-1 -FIRE ALARM SYSTEM (WIRELESS)											
F	**Victaulic couplings and fitting(only Labour charges)**	Lot	1	**Victaulic coupling and fitting will be provided by client**								
G	**Miscellaneous**											
1	**Signages-All necessary signages required as per norms shall be supplied and erected by contractor.**											
a	FIRE EXIT signage (ie. GROUND FLOOR…..etc.) at each stair enclosure on every floor ,indicating the floor number in words , lettering size shall be 7.5cm with contrasting colour from back ground on 3mm alcobond sheet autoglow type . Size shall be 365mm x 119mm .	Nos	33									
b	Floor indentification signage (ie. GROUND FLOOR…..etc.) at each stair enclosure on every floor ,indicating the floor number in words , lettering size shall be 7.5cm with contrasting colour from back ground on 3mm alcobond sheet autoglow type . Size shall be 15cm x 60cm .	Nos	33									
c	Do not use lift during fire	Nos	11									
d	Staircase signage for fire staircase	Nos	33									
e	All emergency numbers 2x2 ft	Nos	3									
f	Fire panel signage and manual call point.	Nos	10									
g	No smoking and fire extinguisher	Nos	33									
h	Safe assembly point 2x2 ft.	Nos	4									
i	Hydrant hose reel	Nos	33									
2	Government Approvals-Preparing and submission of all drawings and documents for the purpose of obtaining NOC from Local Authority, arranging for inspection by Local Authority and obtaining of Completion certification from Fire Authority including all non statutory liaison and follow up charges. Statutory payments shall be reimbursed by client upon production of receipts, challans, demand notice, etc.	LS	1									
	TOTAL FOR F- MISCELLANEOUS											
	TOTAL AMOUNT FOR FIRE FIGHTING SYSTEM WORKS (A+B+C+D+E+F)											
	Total amount in Word=											





PUMPS

TAG NO	PUMP SPECIFICATION	START/STOP	QTY.
HEP	CAPACITY : 2280LPM HEAD : 88 MWC DRIVE : ELECT. MOTOR	AUTO START MANUAL START/ STOP	2NOS.
HJP	CAPACITY : 180LPM HEAD : 88 MWC DRIVE : ELEC. MOTOR	AUTO START/ STOP MANUAL START/ STOP	1NO.
HBP	CAPACITY : 900LPM HEAD : 35 MWC DRIVE : ELEC. MOTOR	AUTO START/ STOP MANUAL START/ STOP	1NO.

LEGEND :

S.NO	SYMBOL	DESCRIPTION
1		HYDRANT PIPES
2		NON RETURN VALVE
3		BALL VALVE
4		BUTTERFLY VALVE
5		AIR RELEASE VALVE
6		TWO WAY FIRE BRIGADE CONNECTION WITH INBUILT NRV
7		INTERNAL FIRE HYDRANT – (SINGLE HEADED) 2Nos.x15m LONG R.R.L. HOSE WITH CABINET, 25mmø x30m LONG HOSE REEL DRUM
8		COUPLING
9		TEE
10		ELBOW
11		STRAINER

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:
1. Maintain a register of Drawing Receipts, listing drawing number & revision number, date received, number of copies received, details of Contractor's from the issuer & any other relevant details to be entered from time to time.
2. Maintain a register of Drawing Issues, listing drawing number & revision number, date issued, number of copies issued, details of Contractor's from the issuer & any other relevant details to be entered from time to time.
3. While destroying superseded drawings, 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.
4. 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

Construction work shall be executed only as per the latest revision drawing. Also a revision drawing number & revision number. 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

REV.	DESCRIPTION	DATE	BY	CHD.
R2	REVISED AS PER FIRE NOC COMMENTS	28.08.15	VSE	SAM
R1	ISSUED FOR CONSTRUCTION	25.09.14	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 0.5M 2M 4M / 0.5M 0 1M 3M 5M

CLIENT:
INDIAN INSTITUTE OF TROPICAL METEOROLOGY , PUNE.

PROJECT:
PROPOSED STUDENT'S HOSTEL AT IMD COLONY,PUNE

DRAWING TITLE:
FIRE PROTECTION SYSTEM SCHEMATIC LAYOUT

SCALE : 1:150	DRAWN : V.SELVAN	R2
DATE : 20.12.12	CHKD : S.ARULMURUGAN	

DRAWING NO:
IITM-P-HST-FPS00-02-01-165647

LICENSED SURVEYOR:

C R NARAYANA RAO
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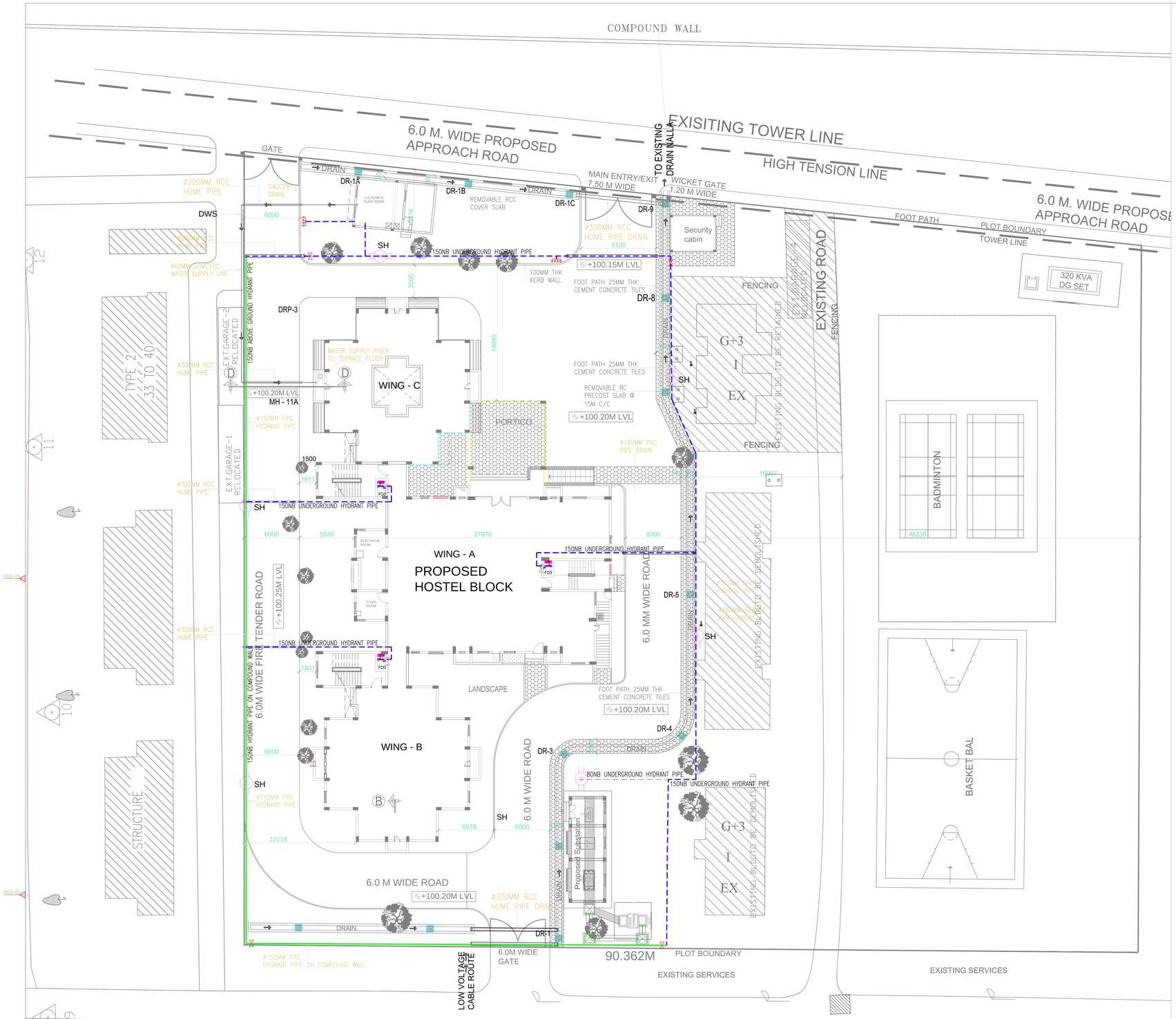
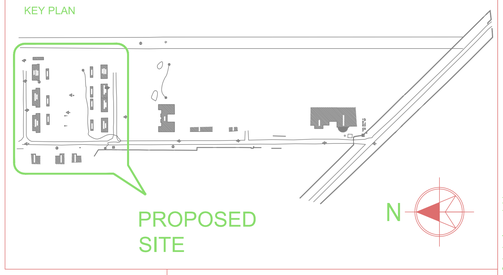
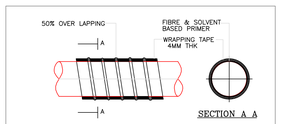
B.Tech, (Hons.), M.S., (Ill.), Ph.D., M.Am.Soc. C.E., F.I.E., F.I.V., Chartered Engineer – Registered Architect.

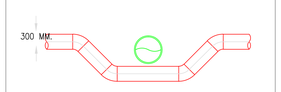


KEY PLAN

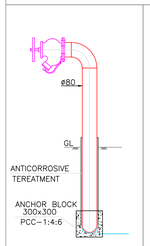




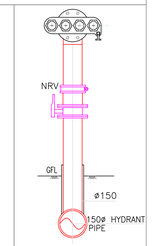
DETAILS OF COATING & WRAPPING



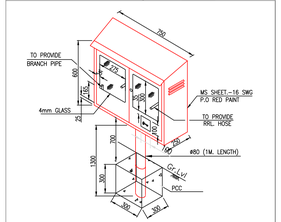
PIPE CROSSING DETAIL



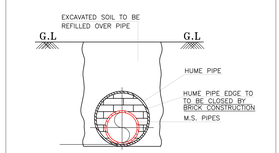
SINGLE HEADED YARD POST



DETAIL FOR 4WAY FIRE BRIGADE INLET



DETAILS OF EXTERNAL HOSE BOX



DETAIL OF HUME PIPE AT ROAD CROSSING

GENERAL NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ARE UNFINISHED DIMENSIONS UNLESS OTHERWISE SPECIFIED.
2. ALL LEVELS ARE IN METRES AND ARE UNFINISHED LEVELS UNLESS OTHERWISE SPECIFIED.
3. DO NOT SCALE DRAWINGS, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO EXECUTION.

FPS LEGENDS :

SL.NO.	SYMBOL	DESCRIPTION
1		UNDERGROUND HYDRANT PIPE
2		ABOVEGROUND HYDRANT PIPE
3	SH	SINGLE HEAD HYDRANT
4		HUME PIPE
5		FOUR WAY FIRE BRIGADE INLET
6		BUTTERFLY VALVE

REV.	DESCRIPTION	DATE	BY	CHD.
R1	ISSUED FOR CONSTRUCTION	09.07.15	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 1M 4M 8M / 1M 0 2M 6M 10M

CLIENT:
INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM) PUNE

PROJECT:
PROPOSED CONSTRUCTION OF STUDENTS HOSTEL BUILDING

DRAWING TITLE:
FIRE PROTECTION SYSTEM EXTERNAL HYDRANT LAYOUT

SCALE : 1:250	DRAWN : V.SELVAN	R1
DATE : 18.05.15	CHKD : S.ARULMURUGAN	

DRAWING NO:
IITM-P-HST-FPS01-01-01-195468

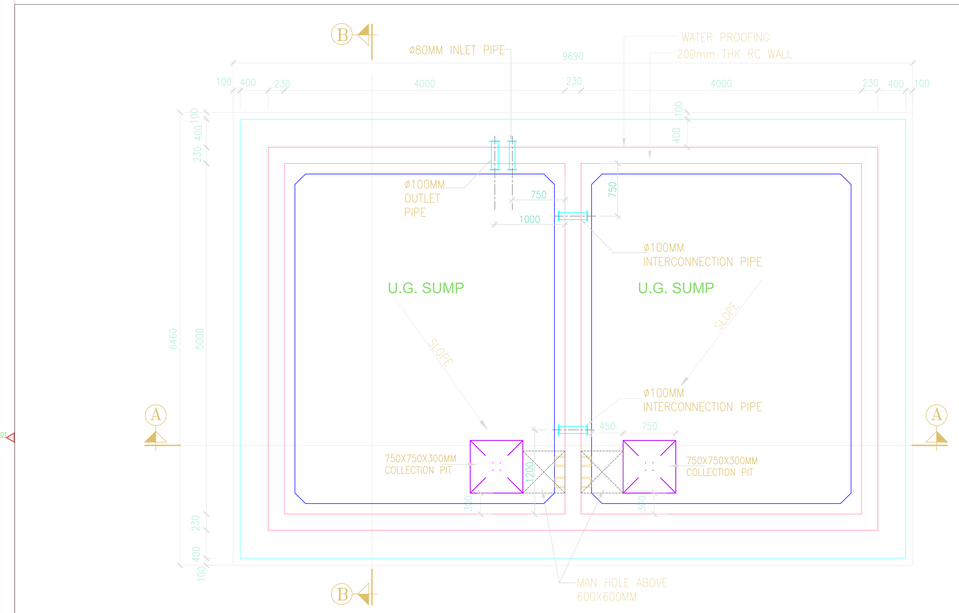
ARCHITECTURE ◦ INTERIOR DESIGN ◦ ENGINEERING ◦ PLANNING ◦CONSTRUCTION MANAGEMENT

CRN
C R NARAYANA RAO
10, KARPAGAMBAL NAGAR, MYLAPORE, CHENNAI-600 004

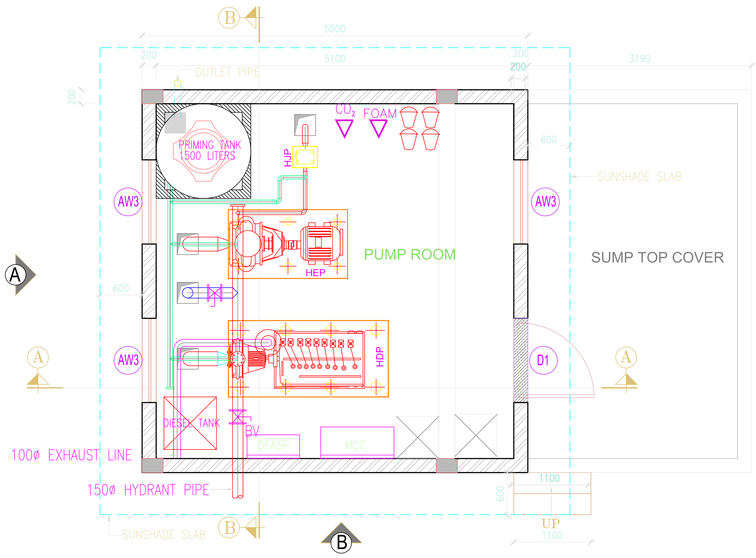
B.Tech, (Hons.), M.S., (Ill.), Ph.D., M.Am.Soc. C.E., F.I.E., F.I.V., Chartered Engineer – Registered Architect.

PUMPS

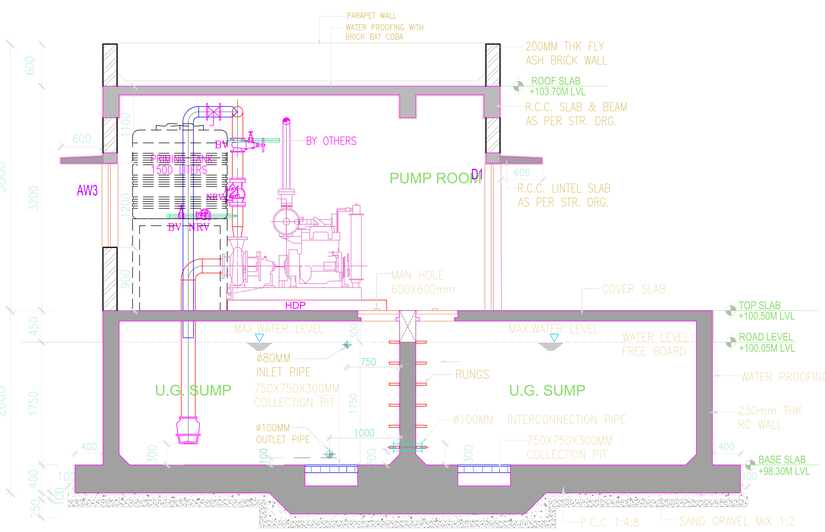
TAG NO	PUMP SPECIFICATION	START/STOP	QTY.	OPERATING WEIGHT
HEP	CAPACITY : 2280LPM HEAD : 88 MWC DRIVE : ELECT. MOTOR	AUTO START MANUAL START/ STOP	1NO.	1023kg
HDP	CAPACITY : 2280LPM HEAD : 88 MWC DRIVE : DIESEL ENGINE	AUTO START MANUAL START/ STOP	1NO.	1256kg
HJP	CAPACITY : 180LPM HEAD : 88 MWC DRIVE : ELEC. MOTOR	AUTO START/ STOP MANUAL START/ STOP	1NO.	80kg
PRIMING TANK	1500 LITERS	-	1NO.	1500kg



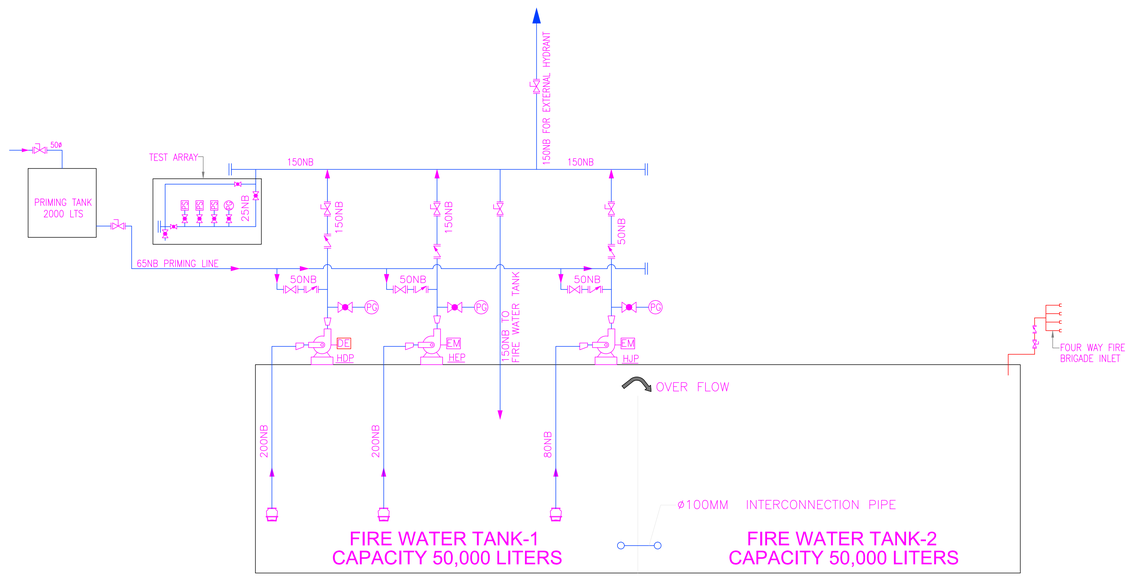
BASEMENT LEVEL PLAN FOR U.G.SUMP



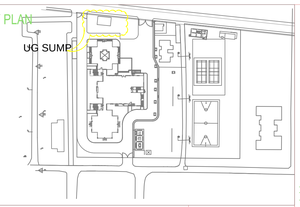
PUMP ROOM / TOP LEVEL PLAN



SECTION - A A



KEY PLAN



LEGEND :-

200MM THK FLY ASH BRICK MASONRY

COLUMN & R.C WALL

N

GENERAL NOTES :

- ALL DIMENSIONS ARE IN MILLIMETRES AND ARE UNFINISHED DIMENSIONS UNLESS OTHERWISE SPECIFIED.
- ALL LEVELS ARE IN METRES AND ARE UNFINISHED LEVELS UNLESS OTHERWISE SPECIFIED.
- DO NOT SCALE DRAWINGS. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO EXECUTION.

SCHEDULE OF JOINERY

RS	ROLLING SHUTTER	2500 X 2400
SD	STEEL DOOR	1500 X 2400
W	ALU.WINDOW	1200 X 1500
V	ALU.VENTILATOR	1200 X 600

LEGEND :

S.NO	SYMBOL	DESCRIPTION
		PIPES
		GATE VALVE
		NON RETURN VALVE
		BALL VALVE
		BUTTERFLY VALVE
		STRAINER
		AIR RELEASE VALVE
		FOUR WAY FIRE BRIGADE INLET

REV.	DESCRIPTION	DATE	BY	CHD.
R1	ISSUED FOR CONSTRUCTION	09.06.15	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 0.5M 2M 4M / 0.5M 1M 3M 5M

CLIENT:

INDIAN INSTITUTE OF TROPICAL METEOROLOGY , PUNE.

PROJECT:

PROPOSED STUDENT'S HOSTEL AT IMD COLONY,PUNE

DRAWING TITLE:

FIRE PROTECTION SYSTEM
PUMP ROOM LAYOUT

SCALE : 1:50 (A2)	DRAWN : V.SELVAN	R1
DATE : 13.08.14	CHKD : S.ARULMURUGAN	

DRAWING NO:

IITM-P-HST-FPS01-01-02-195469

ARCHITECTURE ◦ INTERIOR DESIGN ◦ ENGINEERING ◦ PLANNING ◦ CONSTRUCTION MANAGEMENT

CRN
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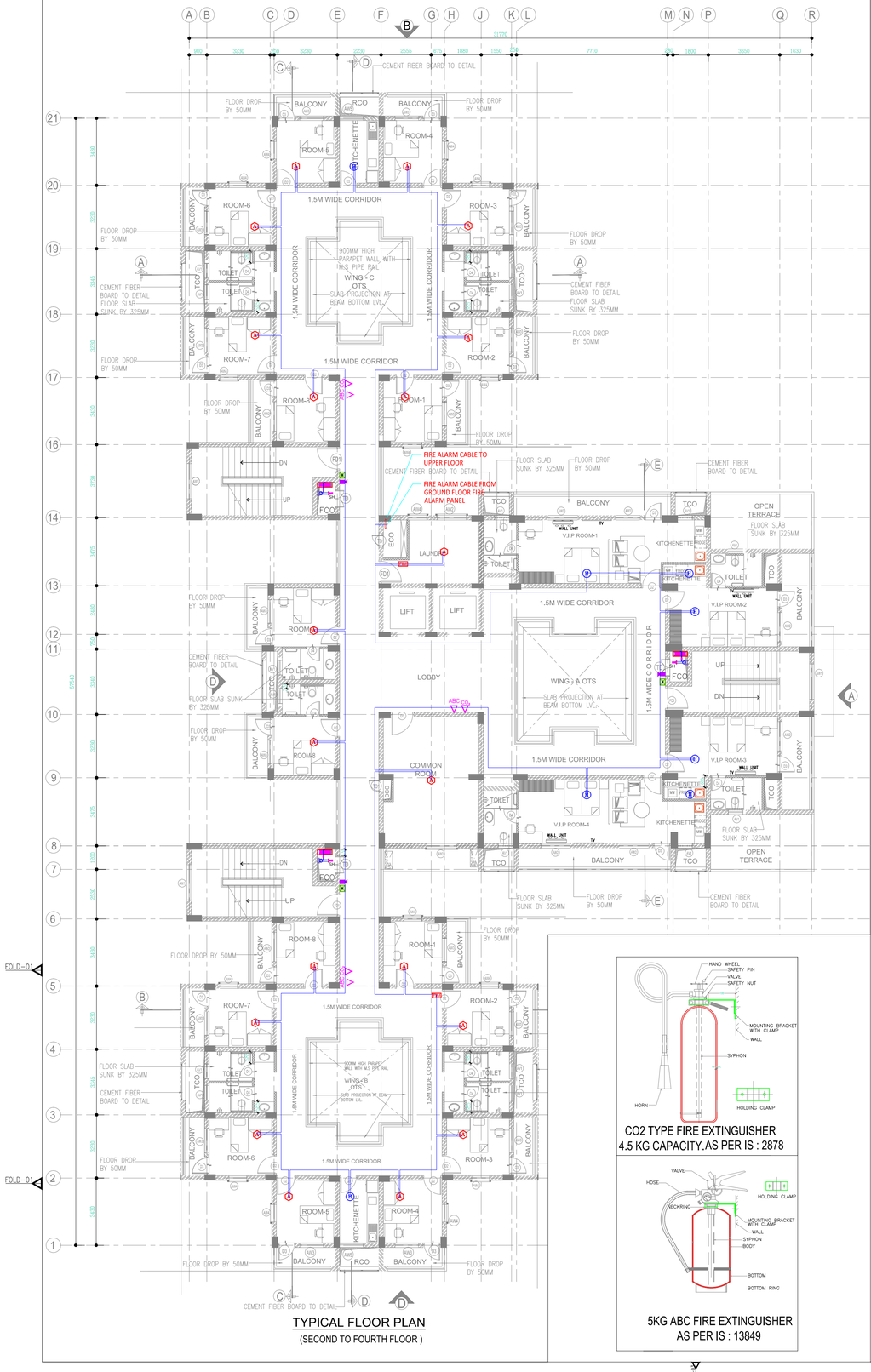
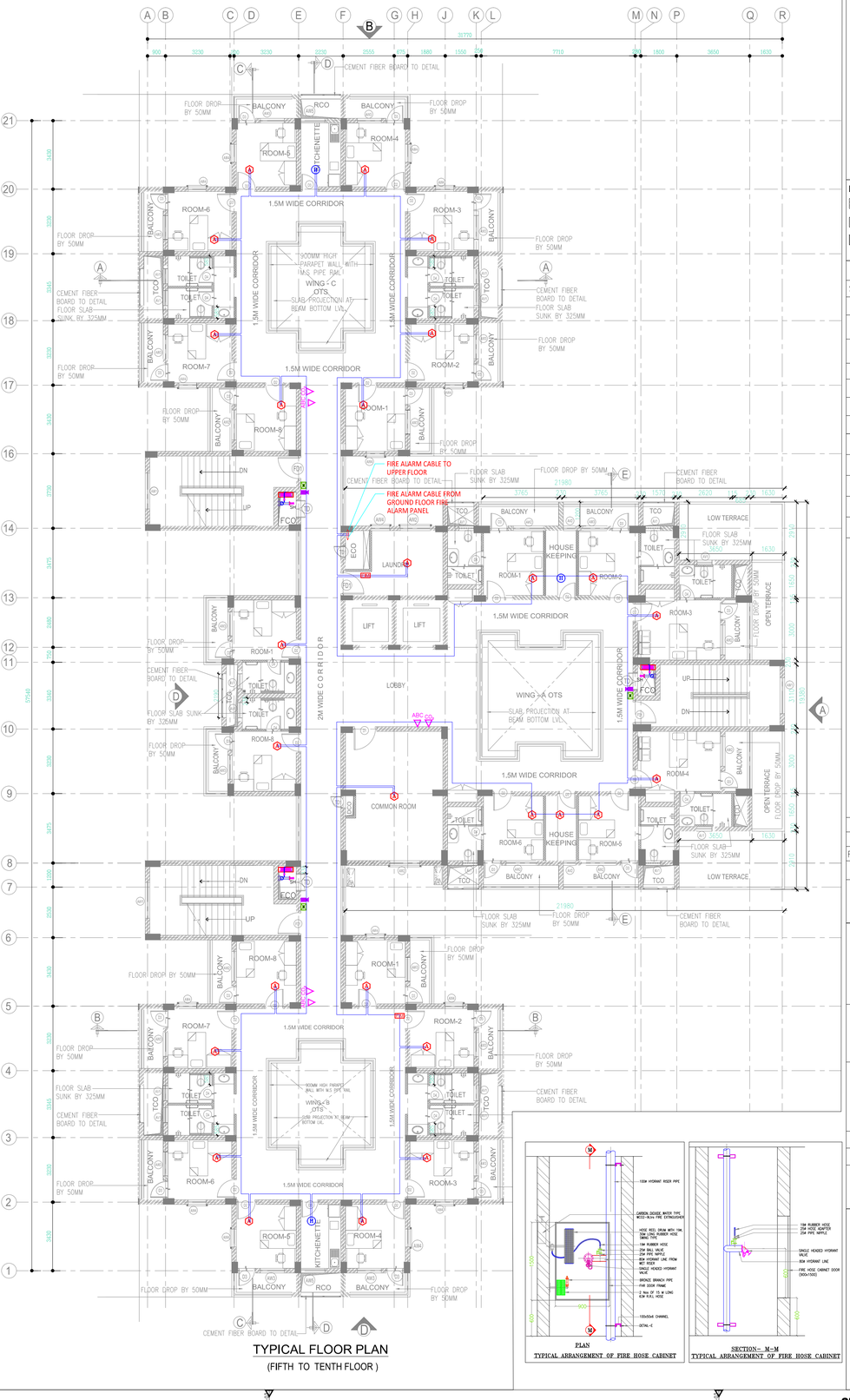
SUBSTATION



TYPICAL FLOOR PLAN
(SECOND TO FOURTH FLOOR)

CO2 TYPE FIRE EXTINGUISHER
4.5 KG CAPACITY.AS PER IS : 2878

5KG ABC FIRE EXTINGUISHER
AS PER IS : 13849

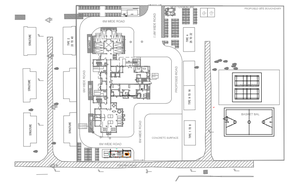


TYPICAL FLOOR PLAN
(FIFTH TO TENTH FLOOR)

PLAN
TYPICAL ARRANGEMENT OF FIRE HOSE CABINET

SECTION:- M-M
TYPICAL ARRANGEMENT OF FIRE HOSE CABINET

KEY PLAN



LEGEND :-

- 230MM THK FLY ASH BRICK WALL
- 115MM THK BRICK WALL
- COLUMN & R.C WALL

N

LEGENDS :

S.NO	SYMBOL	DESCRIPTION
1		HYDRANT PIPE
2	ABC	ABC TYPE FIRE EXTINGUISHER – 5 KG. CAPACITY.
3	CO_2	CO2 FIRE EXTINGUISHER – 4.5 KG. CAPACITY.
4	SH	SINGLE HEADED HYDRANT
5		HOSE REEL DRUM
6		HOSE BOX
7	FCO	FIRE CUTOUT
8	A	MULTISENSOR DETECTOR IN DIRECT CEILING
9	H	HEAT DETECTOR
10	M	MANUAL CALL POINT
11		HOOTER/STROBE WITH CONTROL REALY MODULE
12	FIM	FAULT ISOLATION MODULE

NOTE:–
MANUAL CALL POINT SHALL BE MOUNTING AT 1.4Mtr FFL
HOOTER CUM STROBE SHALL BE MOUNTING AT 2.4Mtr FFL

FIXING ARRANGEMENT OF VERTICAL PIPE
DETAIL–E

REV.	DESCRIPTION	DATE	BY	CHD.
R2	REVISED AS PER FIRE NOC COMMENTS	28.08.15	VSE	SAM
R1	ISSUED FOR CONSTRUCTION	25.09.14	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 0.5M 2M 4M / 0.5M 0 1M 3M 5M

CLIENT:

INDIAN INSTITUTE OF TROPICAL METEOROLOGY , PUNE.

PROJECT:

PROPOSED STUDENT'S HOSTEL AT IMD COLONY,PUNE

DRAWING TITLE:

FIRE ALARM & FIRE PROTECTION SYSTEM LAYOUT FOR TYPICAL FLOOR (2nd to 4th & 5th to 10th)

SCALE : 1:125 (A1)	DRAWN : V.SELVAN	R2
DATE : 20.12.12	CHKD : S.ARULMURUGAN	

DRAWING NO:

IITM-P-HST-FPS02-02-03-165659

LICENSED SURVEYOR:

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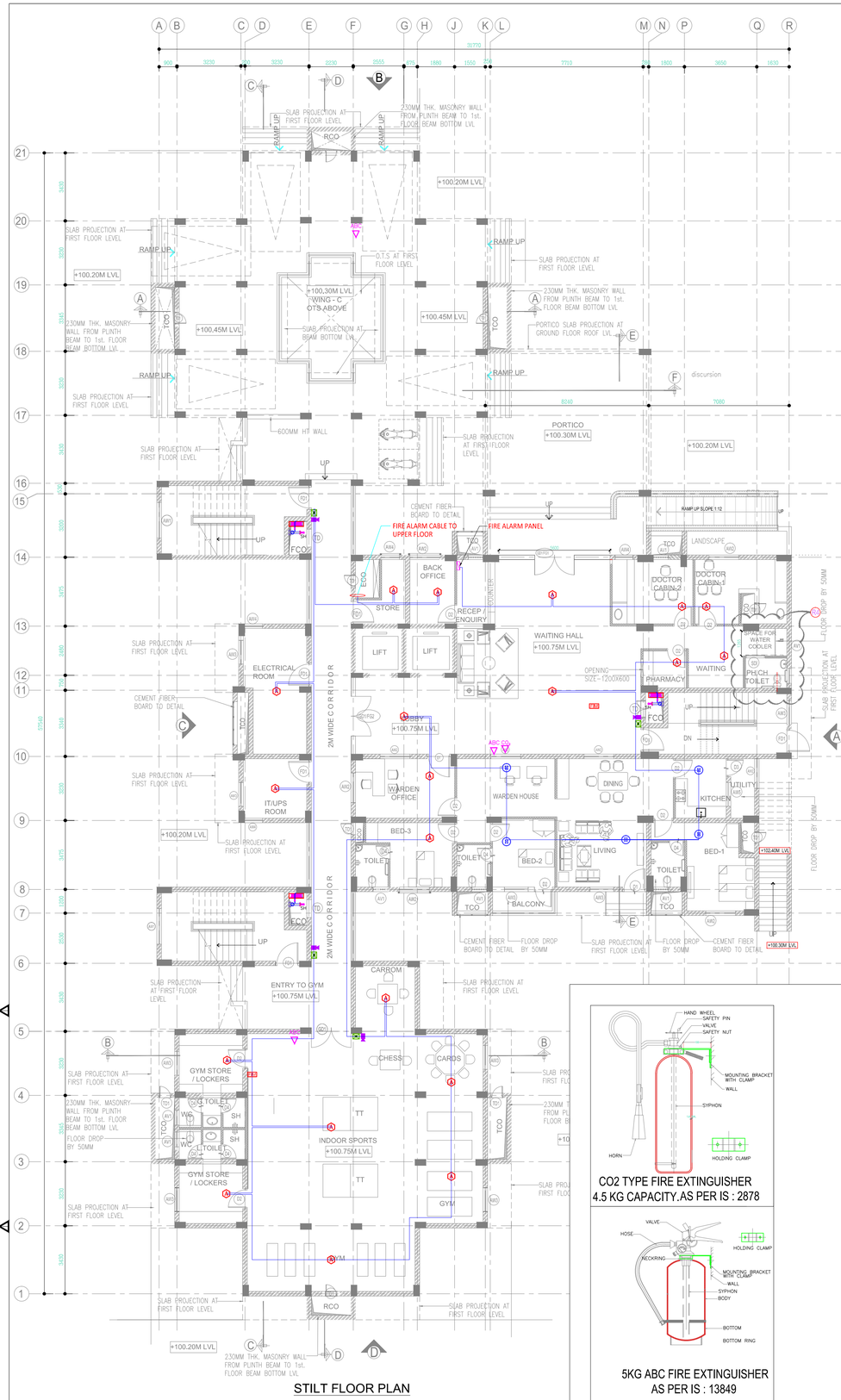
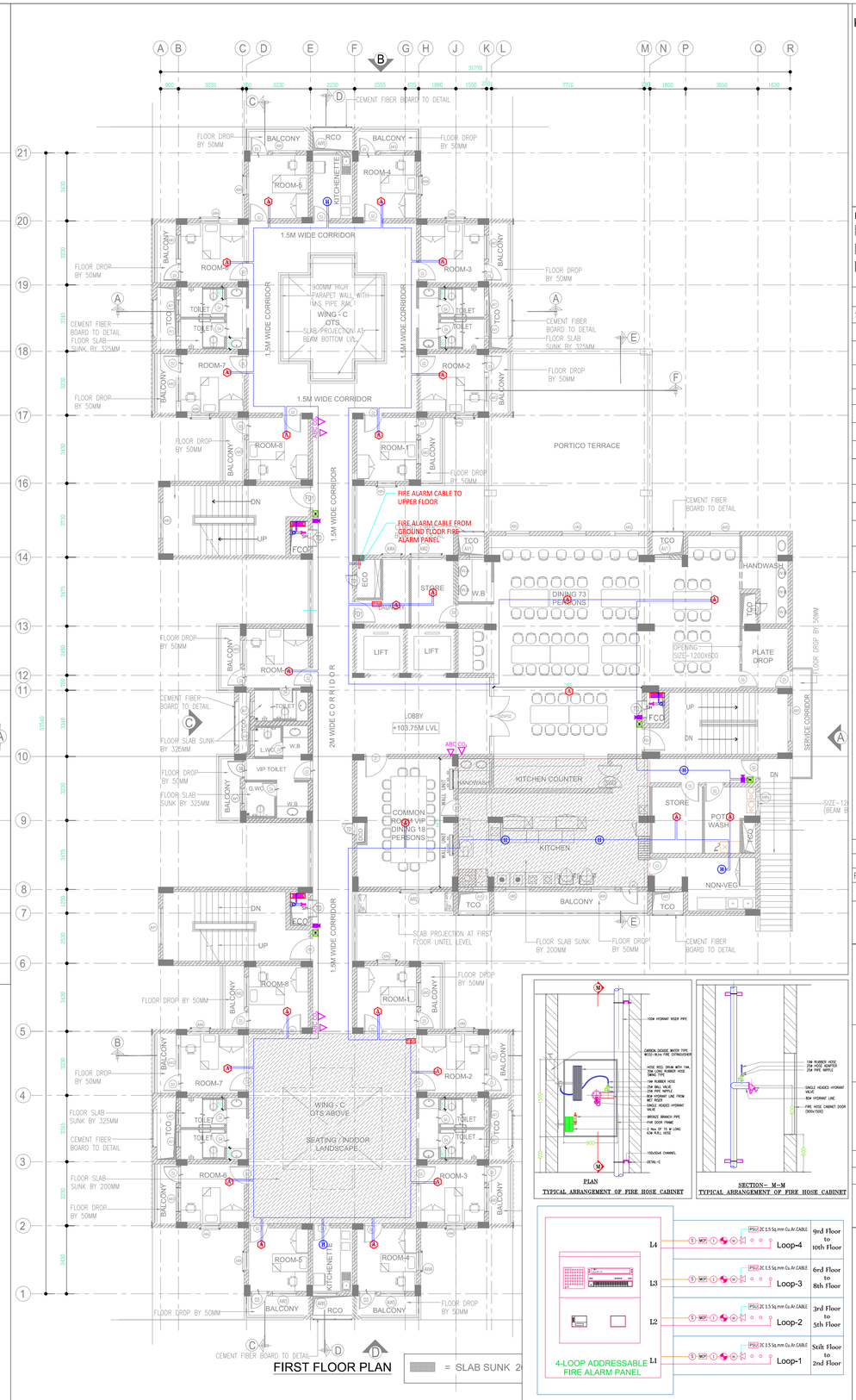
B.Tech, (Hons.), M.S., (Ill.), Ph.D., M.Am.Soc. C.E., F.I.E., F.I.V., Chartered Engineer – Registered Architect.

STUDENTS HOSTEL - TYPICAL FLOOR PLANS

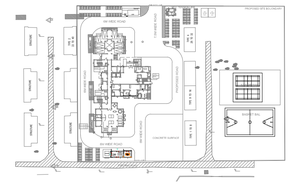


STILT FLOOR PLAN



FIRST FLOOR PLAN

KEY PLAN



LEGEND :-

- 230MM THK FLY ASH BRICK WALL
- 115MM THK BRICK WALL
- COLUMN & R.C WALL

N

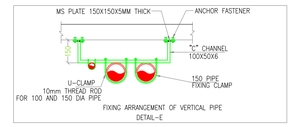
LEGENDS :

S.NO	SYMBOL	DESCRIPTION
1		HYDRANT PIPE
2	ABC	ABC TYPE FIRE EXTINGUISHER – 5 KG. CAPACITY.
3	CO_2	CO2 FIRE EXTINGUISHER – 4.5 KG. CAPACITY.
4	SH	SINGLE HEADED HYDRANT
5		HOSE REEL DRUM
6		HOSE BOX
7	FCO	FIRE CUTOUT
8	A	MULTISENSOR DETECTOR IN DIRECT CEILING
9	H	HEAT DETECTOR
10		MANUAL CALL POINT
11		HOOTER/STROBE WITH CONTROL REALY MODULE
12	FIM	FAULT ISOLATION MODULE

NOTE:–

MANUAL CALL POINT SHALL BE MOUNTING AT 1.4Mtr FFL

HOOTER CUM STROBE SHALL BE MOUNTING AT 2.4Mtr FFL



REV.	DESCRIPTION	DATE	BY	CHD
R2	REVISED AS PER FIRE NOC COMMENTS	28.08.15	VSE	SAM
R1	ISSUED FOR CONSTRUCTION	25.09.14	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 0.5M 1M 2M 3M 4M 5M

CLIENT:

INDIAN INSTITUTE OF TROPICAL METEOROLOGY , PUNE.

PROJECT:

PROPOSED STUDENT'S HOSTEL AT IMD COLONY,PUNE

DRAWING TITLE:

FIRE ALARM & FIRE PROTECTION SYSTEM LAYOUT FOR STILT & FIRST FLOOR

SCALE : 1:125 (A1)	DRAWN : V.SELVAN	R2
DATE : 20.12.12	CHKD : S.ARULMURUGAN	

DRAWING NO:

IITM-P-HST-FPS02-01-03-165657

LICENSED SURVEYOR:

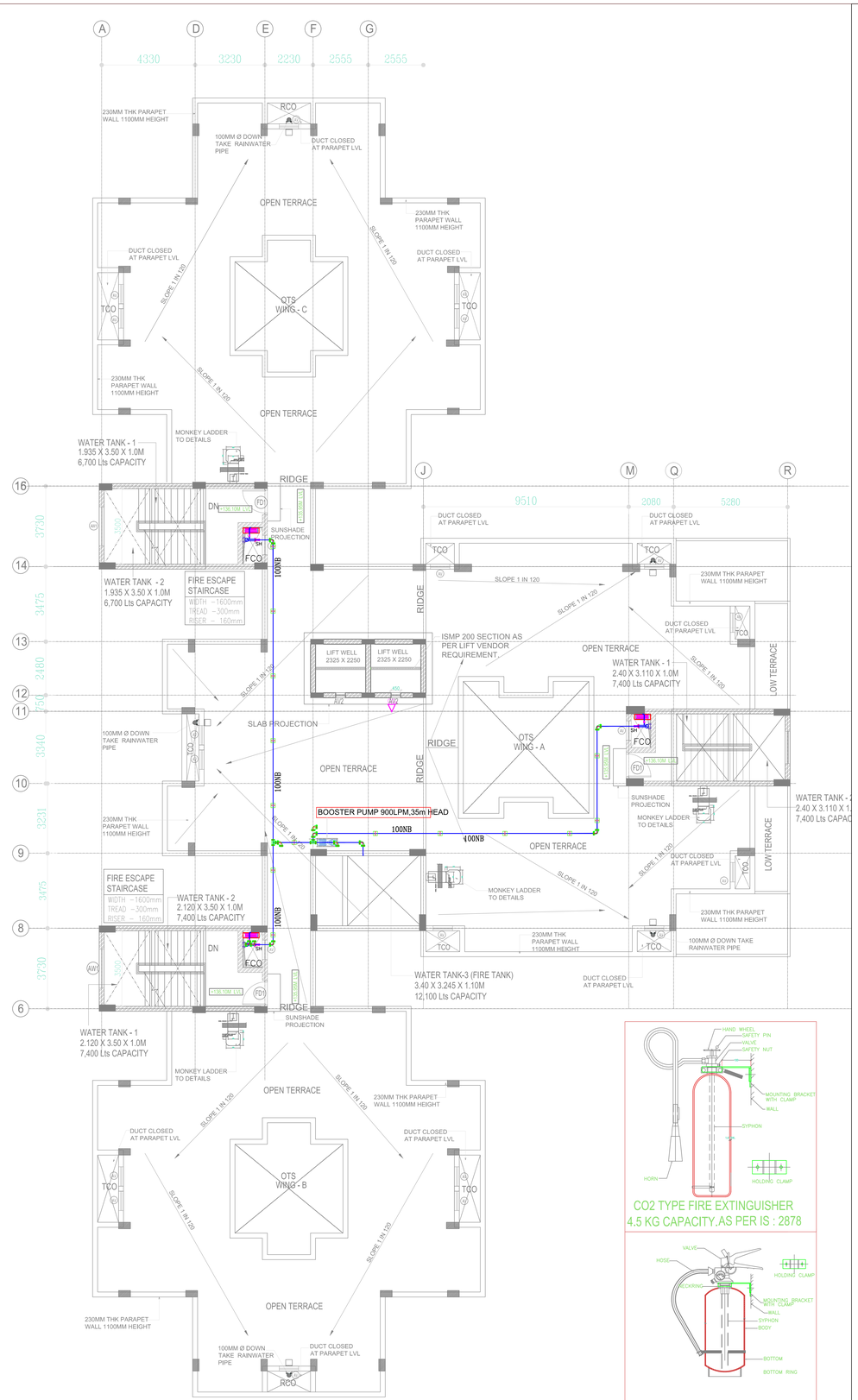
CRN
C R NARAYANA RAO

10, KARPAGAMBALCONY NAGAR, MYLAPORE, CHENNAI-600 004

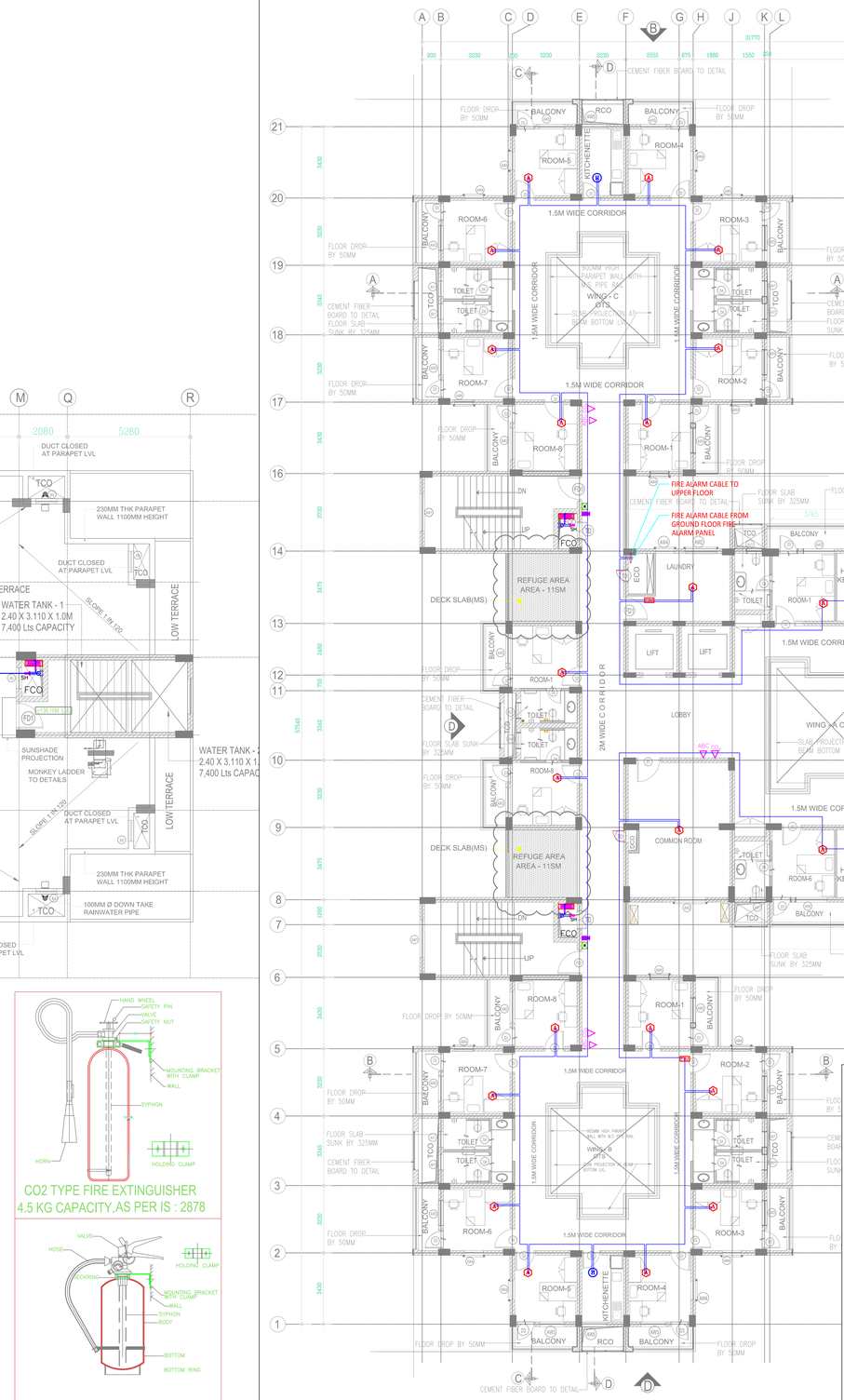
B.Tech., (Hons.), M.S., (Ill.), Ph.D., M.Am.Soc. C.E., F.I.E., F.I.V., Chartered Engineer – Registered Architect.

Contractor's attention is invited to the following:
1. 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 Receipts, listing drawing number & revision number, title, from whom received, date received, number of copies received, details of transmittal from the issuer & any other relevant details to be advised from time to time.
Archive all previous revision issues immediately upon receipt of a new revision and not to use superseded drawings for any purpose whatsoever. The superseded drawings shall be clearly marked as "SUPERSEDED" & the previous revision is archived.
2. In the event of any discrepancy between the drawings and site conditions, the same shall be brought to the notice of the Architect / PMC / Client for clarification before proceeding with the work.
3. The Contractor shall allow the representative of Client / PMC / Architect to inspect the work at any time.
4. Any work carried out by the Contractor using a superseded drawing & other than 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.

STUDENTS HOSTEL - TYPICAL FLOOR PLANS



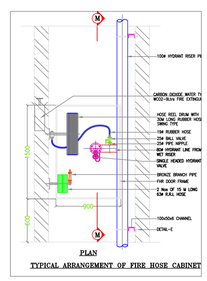
TERRACE FLOOR PLAN



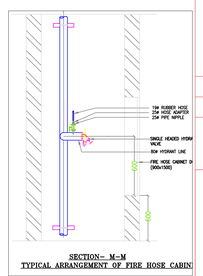
SEVENTH FLOOR PLAN

CO2 TYPE FIRE EXTINGUISHER
4.5 KG CAPACITY.AS PER IS : 2878

5KG ABC FIRE EXTINGUISHER
AS PER IS : 13849



PLAN
TYPICAL ARRANGEMENT OF FIRE HOSE CABINET



SECTION- M-M
TYPICAL ARRANGEMENT OF FIRE HOSE CABIN

KEY PLAN

LEGEND :-

230MM THK FLY ASH BRICK WALL
115MM THK BRICK WALL
COLUMN & R.C WALL

N

LEGENDS :

S.NO	SYMBOL	DESCRIPTION
1		HYDRANT PIPE
2	ABC	ABC TYPE FIRE EXTINGUISHER – 5 KG. CAPACITY.
3	CO2	CO2 FIRE EXTINGUISHER – 4.5 KG. CAPACITY.
4	SH	SINGLE HEADED HYDRANT
5		HOSE REEL DRUM
6		HOSE BOX
7	FCO	FIRE CUTOUT
8	A	MULTISENSOR DETECTOR IN DIRECT CEILING
9	H	HEAT DETECTOR
10		MANUAL CALL POINT
11		HOOTER/STROBE WITH CONTROL REALY MODULE

FIXING ARRANGEMENT OF VERTICAL PIPE
DETAIL-E

REV.	DESCRIPTION	DATE	BY	CHD.
R2	REVISED AS PER FIRE NOC COMMENTS	28.08.15	VSE	SAM
R1	ISSUED FOR CONSTRUCTION	25.09.14	VSE	SAM

AMENDMENT

GRAPHIC SCALE: 0 0.5M 2M 4M / 0.5M 0 1M 3M 5M

CLIENT:

INDIAN INSTITUTE OF TROPICAL METEOROLOGY , PUNE.

PROJECT:

PROPOSED STUDENT'S HOSTEL AT IMD COLONY,PUNE

DRAWING TITLE:

FIRE PROTECTION SYSTEM LAYOUT FOR TERRACE & SEVENTH FLOOR

SCALE : 1:120 (A1)	DRAWN : V.SELVAN	R2
DATE : 20.12.12	CHKD : S.ARULMURUGAN	

DRAWING NO:

IITM-P-HST-FPS02-T1-03-165653

LICENSED SURVEYOR:

CRN
C R NARAYANA RAO

10, KARPAGAMBALCONY NAGAR, MYLAPORE, CHENNAI-600 004

B.Tech., (Hons.), M.S., (Ill.), Ph.D., M.Am.Soc. C.E., F.I.E., F.I.V., Chartered Engineer – Registered Architect.

FOLD-01 FOLD-01 FOLD-01 FOLD-01

STUDENTS HOSTEL - TYPICAL FLOOR PLANS