

# **JAWAHARLAL INSTITUTE OF POST GRADUATE MEDICAL EDUCATION AND RESEARCH**

**(AN INSTITUTE OF NATIONAL IMPORTANCE)**

## **TENDER DOCUMENT**

*For Supply, Installation and commissioning of fire protection system as per NBC standards to prevent fire accidents and getting No Objection Certificate (NOC) from fire and safety authorities for JIPMER campus at Puducherry.*

**PART-III  
Price Bid**

**TENDER NO. HITES/IDS /JIPMER/FPS/17/43**

**Dated: 16<sup>th</sup> May 2017**

**HLL INFRATECH SERVICES LIMITED.  
Infrastructure Development Division.**

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## **1 COMMERCIAL CONDITIONS**

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for Supply, Installation and commissioning of fire protection system as per NBC standards to prevent fire accidents and getting No Objection Certificate (NOC) from fire and safety authorities for JIPMER campus at Puducherry.

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.4 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

### **1.1 UNIT RATES**

1.11 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

### **1.2 BRIEF DESCRIPTION OF PRICING**

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

### **1.3 INCOME TAX**

Any payment to the contractor as per contract, will be made after deducting income tax as per the rules and regulations.

### **1.4 SALES TAX AND EXCISE DUTY**

The tenderer shall clearly indicate sales tax, Excise and other duties as applicable in his offer for carrying out this work.

### **1.6. SUBMISSION OF BILL**

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

### **1.7. EXTRA ITEMS**

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

## **1.8. OVER TIME WORK**

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

- 1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.
- 1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.
- 1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners, architects and the consultants.
- 1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

## **2 SPECIAL CONDITIONS**

### **2.1. EXECUTION WORK**

2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

### **2.2. CERTIFICATE OF COMPLETION**

2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the plants.

2.2.2 The work shall not be considered as completed and put into beneficial use until the consultants have certified in writing that the same has been completed and put into beneficial use.

2.2.3 The defects liability period of one year shall commence from date of such completion or any specific date mentioned therein.

### **2.3. OTHER CONDITIONS**

1. The Contractor shall maintain safe custody of materials brought to the site. The Contractor shall also employ necessary watch and ward establishment for the work and other purposes as required at his own cost.

## **TERMS OF PAYMENT**

The rate of payment for the contract value under this contract shall be regulated and detailed below:

70% after supply of materials at site in good working condition on pro-rata basis.

Balance 30% will be paid after installation, testing, commissioning & handing over to the client/HITES, including all required statutory approvals including No-objection Certificate as required in this tender document.

**Special Conditions:**

- 1) The invoice/ bills shall be raised in the name of “The Director, JIPMER, Puducherry-A/c HLL Infratech services limited” and the same shall be submitted to the HLL Engineer in charge.
- 2) TIN no. of HITES should not be mentioned in any of the documents as HITES is acting on behalf of the client in the capacity of consultant alone.
- 3) The warranty of the items has to be given in the name of The Director, JIPMER, Puducherry.
- 4) The completed works shall be handed over to” The Director, JIPMER, Puducherry “after due verification by HLL Engineer in Charge.
- 5) The contractor shall comply with all statutory requirements applicable including PF and ESIC requirements for their employees.

## TECHNICAL SPECIFICATIONS

### **FIRE PROTECTION SYSTEM**

#### **1. SCOPE**

The basic system requirement shall be as per National Building Code of India 2005 -Part 4. In view of the requirement for compliance with the standards for Fire Protection system, the following buildings inside the campus are to be provided with necessary Fire Protection System.

1. Hospital Block
2. Institute Block
3. Administrative Block
4. OPD Block
5. EMS Building
6. ID Ward
7. PMRC
8. Community Hall
9. Kitchen Block
10. Pharmacy
11. Store Block
12. Aschoff House
13. Blackwell House
14. Curie House
15. Harvey House
16. Lister House
17. Laundry Building
18. Kendriya Vidyalaya
19. Workshop
20. Animal House



The scope of the work includes making all the buildings in the campus equipped with firefighting system and fire alarm system as per the BOQ. Following are the major works to be executed.

1. The buildings without firefighting & detection system (20 buildings), complete system needs to be done in accordance with NBC 2005
2. All the yard hydrants connected to the above buildings need to be serviced and replacement is to be made wherever required as per the BOQ
3. Hydrant points inside buildings need to be painted and serviced
4. The damaged hoses need to be replaced with new one
5. Damaged hose boxes are to be replaced and the existing hose boxes are to be serviced with replacement of damaged hoses/specials as per the BOQ
6. Inside the buildings, hose reels need to be replaced wherever required as per the BOQ
7. New branch pipe needs to be provided as per the BOQ
8. Corroded and damaged yard pipes need to be changed and fire pipes wherever exposed are to be painted
9. In the pump rooms, full service of pumps, specials and valves is to be done
10. Diesel engine pumps needs to be provided in pump room
11. Terrace tank & Terrace pump need to be given as per the BOQ

12. All the control valves need to be serviced and damaged needs to be replaced as per the BOQ
13. Sprinkler system are to be provided in Institution block, EMS building and Administrative building
14. Sufficient signage's are to be provided in appropriate places as per the BOQ
15. The detailed plan of all the buildings with firefighting system in place shall be prepared and kept on record. NOC from the fire department need to be taken for each buildings.

In addition to the above mentioned buildings, the pump rooms and the yard of the entire JIPMER campus is also to be equipped with fire protection system and servicing of the same is to be done wherever required.

The repair and servicing of the existing fire protection system is also included in the scope.

The Tenderer shall be responsible for preparing the drawings and prior to execution the tenderer should get it approved from the client engineer in charge.

## **2. CODES AND STANDARDS**

NBC: National Building Code 2005, Part 4, Fire and Life Safety  
& as per the direction given by the local fire force department

### **Engineering Practices**

IS-1239 / IS-3589: Specifications for MS/GI Pipes

IS-778/14846: Specifications for Gun Metal gate, globe, and check Values for water supply.

IS-814: Specifications for covered electrodes for metal arc welding of structural steel. BS-5155: Specifications for C.I. butterfly valve.

IS-1641: Specifications for C.I. screwed fittings.

IS-903: Specifications for Branch pipes (long Pattern)

IS-3844: Code of practice for installation of internal Fire Hydrant in Multi storied building

IS- 5290: Specifications for hydrant landing valves.

IS-903: Specifications for coupling double male double female instantaneous pattern for firefighting.

IS-1879: Malleable iron fittings (Parts I to X)

IS-4853: Recommended practice for radiographic inspection of fusion welded butt joints in steel pipes.

IS-636: Synthetic, jacketed hose pipes.

IS: 5 Specification for painting

### 3. PUMPING SYSTEM

| Sl No | Pump Details   |
|-------|--|
| 1     | Stand by pump diesel pump Near underground Static Water storage water tank. Fire Pump with minimum pressure of 3.5 kg/cm square at terrace level of 2280 l/min |
| 2     | Terrace pump Near terrace water tank to maintain minimum pressure of 2 kg/cm square of capacities 450 lpm and 900 lpm at required buildings                    |

### 4. DESIGN PARAMETERS

- The yard hydrants will be fixed on the stand post at 30 m intervals around the buildings.

- In each floor of specified buildings, in each riser, tapping will be taken for connecting a Single headed hydrant valve and a hose reel drum having 19mm dia rubber hose of 30m long with nozzle at one end.
- Each single headed hydrant valve will be provided with 2 Nos. of 15 m hose and 1 No. of branch pipe.
- Pipes will be laid in ring form around the areas to be protected. Tapping will be from the main hydrant line. Isolating valves will be provided from maintenance point of view as will be provided from maintenance point of view as well as fire service requirements.
- The ring main around the building will be laid 1m below ground level, 2m away, within 15Mtr from the face of the building.
- The wet riser and down comer system piping will be as per relevant IS standards.
- The hydrant mains will be sized for the entire aggregate pumping capacity considering velocity of 5 m/s.
- Minimum pressure of  $3.5 \text{ kg/cm}^2$  will be ensured at the remotest hydrant point.
- All the hydrants will be used oblique type with the outlet angle towards ground.
- All the outdoor hydrants will be provided with two (2) Nos. RRL hoses (63 mm size x15m long with couplings) and one (1) no. branch pipe with nozzle (20mm bore).
- At every internal hydrant location, one (1) no. of hose reel arrangement will be provided except for terrace level.
- The system will be automatic in operation.
- The power supply to MCC & control panel of the firewater pumps will be directly from the sub-station without any tapping.

## **5. AUTOMATIC SPRINKLER SYSTEM**

Automatic sprinkler system shall be provided at specified buildings as per the requirements of NBC 2005.

Sprinkler system will have installation control valve (Alarm valve), Sprinklers, flow switch , associated piping, etc. The sprinkler riser mains will be charged with water to the system design pressure. The operation system will be automatic through the pressure switches installed in the system. When the sprinkler bulb breaks due to fire breaks-out, the pressure will drop down in the pipe line. The drop in pressure is being sensed by the pressure switch. The pressure switch is connected to the MCC. The MCC will trigger the prime movers to run when it get signal from the pressure switch.

### **DESIGN PARAMETERS**

- At least one number sprinkler is to be provided per 12 sq.m of coverage area.
- One Alarm valve is considered for each sprinkler riser
- Tapping is taken from the sprinkler riser for all the sprinklers at the respective floors.
- Isolating valve is considered at the tap off points, from maintenance point of view.
- One number flow switch is also provided near the tap-off point from the individual vertical riser of each floor to get the fire indication in the main fire panel.
- The Automatic sprinkler system piping will be GI heavy grade as per relevant IS standards.

- The Sprinkler mains will be sized based on the number of sprinklers.
- Minimum pressure of 0.35 bar will be ensured at the remotest sprinkler point.
- The sprinklers used will be of Pendant type with rosette plate.
- One cabin will be housed near the riser to house the spare sprinklers, spanner, first-aid box, etc.
- The system will be automatic in operation.
- The power supply to the MCC & control panel of the firewater pumps will be independent and taken directly from the substation.

## **6. PIPE AND FITTINGS**

- Pipe for firefighting will be MS pipe conforming to IS : 1239 / IS : 3589 (Heavy grade for wet riser/ down comer / hydrant system and sprinkler system) including all fittings like bends, elbows, tees anchor fasteners, couplings etc., and will be of reputed make.
- Pipes 150 mm dia and below will conform to IS : 1239. Pipes 200 mm dia and above will be rolled and welded conforming to IS : 3589
- For pipes below 50 mm diameter, welded joints shall not be permitted. For pipes upto 50mm dia threaded forged steel fittings and for pipes above 50 mm dia MS fitting with welded joint shall be used.
- Flanges will have appropriate number of holes as per the relevant IS Standard

fastened with nuts, bolts and 3mm thick compressed rubber gasket.

- Shock absorbers for absorbing and to sustain water hammering in the firefighting and supply water pipe line to be provided at regular distance.

## **7. PIPE PROTECTION**

- All pipes above ground and in exposed locations will be painted with one coat of red oxide primer and two coats of synthetic enamel paint as per IS: 5 (Shade 536).
- All pipes under floors or below ground will be protected against soil corrosion by wrapping and coating material "Pypkote" as per IS: 10221.

## **8. PIPE SUPPORT**

All pipes will be adequately supported from ceiling or walls from existing inserts by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats or by using anchor fasteners type as per site conditions. All clamps will be painted with one coat of red oxide and two coats of black enamel paint.

## **9. FIRE ALARM CONTROL PANEL (FACP) (Conventional)**

The Fire detection system shall comprise of a central unit, connected by two wires to field devices. Including fire detection devices, alarm devices and control devices, located throughout the protected building area. The control unit shall continuously monitor the status of all sensing devices, and initiate action when a fire or smoke, heat condition is present. The alarm management shall be field configurable from the control panel via a key pad to enable the system and to permit future changes. This configuration shall be maintained under power failure conditions. The Fire alarm panel shall be designed to communicate with the sensors and field devices. It shall be a microprocessor based unit, and shall incorporate all hardware and software to

enable it to make decisions upon information received from sensors, and operate appropriate outputs to initiate required alarm and signals. The panel shall comply with IS 2189 code of practice. The control unit shall have a front panel comprising of indicating LED's, control keyboard, and LCD display. The panel shall have 16x2 characters LCD monitoring & programming setup through menu option. Alarm and Fault signaling and its annunciation shall be capable of zone wise by means of LED and LCD display. The panel shall be capable to do and indicate the zone wise disablement. The LCD message shall have priority when there is multiple even persists; Alarm should have higher priority than Fault. However, it must be possible to view all other events currently in the system, including, alarm, fault and disable. The visual indications must be arranged so that the different warning are clearly distinguished (i.e. amber for fault, red for alarm). The internal audible signal device may be the same for all alarms, but either tone variation shall be used to differentiate the signals. Outputs shall be provided for audible alarms, control functions and remote repeater. The panel shall have number of zones as required by site conditions (tenderer shall specify the number of zones). The zones must be fully field programmable to permit sensors to be allocated to any zone. It shall be CE certified.

### **Panel Indicators**

All visual indicators shall be LED's and no incandescent lamps are to be used. The following LED's must be provided:

- System ON.
- AC Power ON.
- Standby ON.
- Hooter Fault.
- Silenced.
- Zone wise Fire
- Zone wise Fault
- Zone wise Isolate

### **Panel Display**

The LCD text display must be able to simultaneously display a minimum of the following information in each display mode.



#### Zone Display Mode:

- Type of alarm (Fire/ Fault)
- Alarm count
- Total number of alarms
- Total number of Faults

#### Panel Controls

The panel is to incorporate a keyboard with the following functions:

Numeric keyboard

System reset button

Silence alarm button

Menu button

Enter button Left / Right Arrow button

The panel shall have 3 potential free contact form C relay (2 for fire and 1 for fault)

**Optional:** Zone wise Relay & zone wise Sounder, provided based on requirement.

#### **Technical Specifications:**

##### **Power**

- 120-240 VAC, 50 Hz.
- Wire size: 1.5 Sq. mm with 600V insulation

##### **Battery (Lead Acid only)**

- Charging Voltage: 27.9 VDC.
- Charging Capacity: 7 Amp Hour Battery Max.
- System Quiescent Current: 50mA + (4.2mA per zone)

##### **Initiating Device Circuits (Zone Circuit)**

- All zones are Class B wiring supervisory
- Normal Operating Voltage: Nominal 24 VDC
- Alarm Current: 20 -35mA threshold
- Short Circuit Current: 40mA Maximum
- Loop resistance: 50 ohms Maximum
- End-Of-Line Resistor: 4.7K, 1/4watt

- Standby Current: 6.8mA (2.4mA for Detectors)

#### **Notification Appliance Circuits (Sounder/Hooter Circuit)**

- Class B wiring Supervisory
- Operating Nominal Voltage: 24 VDC
- Hooter (NACs) output: 1 Amps.
- End-Of-Line Resistor: 4.7K, 1/4watt

#### **Remote Outputs**

- Fire Contact (C, NO, NC): 0.5A @ 220v AC/30v DC@ 2A
- Fault Contact (C, NO, NC): 0.5A @ 220v AC/30v DC@ 2A (Optional)

#### **24 VDC Power For remote devices**

- Operating Voltage: 24VDC, 500mA Max.

### **10. CONVENTIONAL UL APPROVED DETECTORS:**

#### **Conventional Optical Smoke Sensor Detector:**

The Optical Detector shall confirm to the relevant standards having the following features-

1. Detector shall be UL approved.
2. It shall have smoke sensitivity of 1.9 +/- 0.6 %/ft
3. All the detectors shall have a visible dual blinking LED to indicate the healthiness/ trouble/ alarm condition of the detector. The LED shall be located in such a way that it shall be visible from the 360°.
4. It shall possess False alarm immunity and a superior signal to noise ratio.

#### **Conventional Heat Detector:**

The Heat Detector shall confirm to the relevant standards having the following features:

1. Detector shall be UL approved.
2. The detector should have fixed temperature rating of 59° C and rate of rise of 11.1°C/min.
3. All the detectors shall have a visible dual blinking LED to indicate the healthiness/ trouble/ alarm condition of the detector. The LED shall be located in such a way that it

shall be visible from the 360°.

4. It shall possess False alarm immunity and a superior signal to noise ratio.

**Standard base:**

1. The base shall be UL Listed
2. The base shall be common for PHOTO, THERMAL AND MULTI SENSOR.
3. Terminals of base shall be rust resistant. The base shall have separate in and out terminals.
4. The base shall have terminals to connect remote indicator.

**11. Manual Call Points (MCP):**

The Manual call points (MCP) shall conform to the relevant standards having the following features.

1. MCP shall be resettable Type.
2. MCP shall be either surface mounted or flush mounted.
3. The MCP shall have a LED to indicate Alarms
4. The MCP ABS type and red in colour.

**12. Conventional Sounder:**

The Sounder shall conform to the relevant standards having the following features.

1. The Sounder shall be a Conventional sounder. (Bidder shall consider external power supply - Sounders)
2. The sounder shall have an audibility level of 85dB
3. The sounder shall have the capability of being tested from the FACP.
4. The sounder ABS type and red in colour.

**13. Response Indicator:**

Response indicator shall have following features:

- Alarm status is indicated by Red colour LED
- Operates on 24VDC 10 mA

**14. SAFETY SIGNGES**

Safety signage shall be provided for exits & fire escape route.

**DESIGN PARAMETERS**

- Glow sign boards are provided in the exit staircases, fire escape etc.

## **SYSTEM DESCRIPTION**

The safety signage glows in darkness. This will guide the safe escape of occupants even in case of the power supply failure. This can also be useful to find the location of the firefighting appliances in case of emergency even in darkness.

## **15. STATUTORY AUTHORITIES' TESTS AND INSPECTIONS**

Tenderer shall be responsible for obtaining the final NOC from Statutory Authorities. The Tenderer shall be responsible for the submission of all necessary forms and drawings to the Statutory Authorities which shall conform to the latest architectural plans submitted to and kept by these Authorities. All expenses in connection with this shall be borne by the contractor.

However, only the Statutory fees paid by the contractor as per the GO, shall be reimbursed by HITES on producing the actual challan.

## **16. FINAL ACCEPTANCE TESTS**

Following commissioning and inspection of the entire installation, and prior to issue of the Completion Certificate, the Tenderer shall carry out final inspection from FIRE AND RESCUE DEPARTMENT and obtain the Final NOC.

Should the results of the acceptance tests show that plant, systems and/or equipment fail to perform to the efficiencies or other performance figures as given in this Specification, the Tenderer shall adjust, modify and if necessary replace the equipment without further payment in order that the required performance is obtained.

## **17. REJECTION OF INSTALLATION**

Any item of system or component which fails to comply with the requirements of this Specification in any respect whatsoever at any stage of manufacture, test, and erection or on completion at site may be rejected by the Contractor in whole or in part as he considers

necessary/appropriate. Adjustment and/or modification work as required by the Architect / Consultant/ Client/ Project Manager so as to comply with the Authority's requirements and the intent of the Specification shall be carried out by the Tenderer at his own expense and to the satisfaction of the Authority/Architect/Consultant.

After works have been accepted, the Tenderer may be required to carry out assist in carrying out additional performance tests as reasonably required by the Architect/Client/ Consultant/ Project Manager.

## **18. WARRANTY AND HANDOVER**

The Tenderer shall warrant that all plant, materials and equipment supplied and all workmanship performed by him to be free from defects of whatsoever nature before handover to the Owner.

## **19. HANDING OVER OF DOCUMENTS**

All testing and commissioning shall be done by the Tenderer to the entire satisfaction of the /Client/ Project Manager. And all testing and commissioning documents shall be handed over to the / Client/ Project Manager.

The Tenderer shall also hand over all maintenance and operation manuals, all certificates and all other documentation as per the terms of the contract to the /Client/ Project Manager.

## **20. SPECIAL CONDITION**

- As the work is to be executed in a working hospital, the work should be carried out without affecting the regular working of the Hospital. In any case no disturbance shall be made to the patients and the smooth functioning off the hospital

- The work to be executed without creating any type of pollution to hospital premises.
- The Contractor has to carry out site visit before submitting the tender
- The Successful bidder is responsible for preparation of the Fire NOC drawings and obtaining the Fire NOC from the local fire Department in a phased manner.
- The project is planned to be executed in a phased manner. The project is divided into two phases. The first part accounts for the Hospital Block, the second part accounts for the rest of the buildings and refurbishment of yard hydrants.
- The following buildings are considered under Phase I (a)
  1. Hospital Block
  2. ID Ward
  3. Institute Block
  4. OPD Block
  5. EMS Building
  6. PMRC
- The phase I (b) consists of the fire protection works in the remaining buildings and the yard hydrant works. The following buildings are considered under Phase I (b)
  1. Administrative Block and Canteen
  2. Aschoff House
  3. Blackwell House
  4. Community Hall
  5. Curie House
  6. Harvey House
  7. Kendriya Vidyalaya
  8. Kitchen Block

9. Lister House
10. Pharmacy
11. Pump room
12. Store Block
13. Laundry Building
14. Workshop
15. Animal House

- The phase I (a) consists of the works in buildings which have been identified with the highest priority of finishing with the FPS/FAS works and obtaining the fire NOC for these buildings will be prime importance.

### **LIST OF APPROVED MAKES**

| <b><u>LIST OF APPROVED MAKES OF FIRE FIGHTING SYSTEM INSTALLATION</u></b> |   |  |
|---|---|--|
| <b>S. No.</b>   | <b>Details of Materials / Equipment</b>   | <b>Manufacturer's Name</b>                           |
| 1   | Fire Pump                                 | Kirloskar, KSB, Wilo-Mather&Platt, Grundfoss         |
| 2   | Diesel Engine                             | Cummins, Greaves, KOEL                               |
| 3   | Motor                                     | ABB, Bharat Bijlee, Kirloskar, Siemens               |
| 4   | G.I. / M.S. Pipes (IS : 1239 / IS : 3589) | Jindal, Prakash, Tata Steel                          |
| 5   | Standard M.S. Fittings                    | Seamless Fittings, Pipeline products                 |
| 6   | DI / CI / Forged Steel Fittings           | Jainsons Industries, VS, SS fittings, BM fittings    |
| 7   | Paints                                    | Asian Paints, Berger, ICI, Shalimar Paints           |
| 8   | Single Headed Landing Valve               | New Age, Tyco, Viking.                               |
| 9   | Fire Brigade Inlet                        | New Age, Tyco, Viking.                               |
| 10  | Fire Hose                                 | New Age, Safeguard, Minimax                          |
| 11  | First Aid Hose Reel                       | New Age, Safeguard, Minimax                          |
| 12  | Branch Pipe                               | New Age, Safeguard, Minimax                          |
| 13  | Fireman Axe                               | New Age, Safeguard, Minimax                          |
| 14  | Installation Control Valve                | Tyco, Viking, Victaulic                              |
| 15  | Sprinkler Heads                           | Reliable, Tyco, Victaulic, Viking, Newage, HD, Sharp |
| 16  | Water Flow Switch                         | Honeywell, Rapid Control, System Sensor, Spray safe  |
| 17  | Pipe Protection Wrapping                  | IWL – Pypkote, Rustech - Coatek                      |
| 18  | Pipe clamp & supports                     | Chilly, Euroclamp, Kanwal                            |
| 19  | GM / Forged Brass Valves                  | Danfoss, RB, Honeywell, Zoloto                       |
| 20  | Sluice Valves                             | Indian Valve Company, Kirloskar, Kalpana             |
| 21  | Butterfly Valve                           | Audco, Danfoss, Honeywell, Tyco, Viking              |
| 22  | Check Valve – Wafer Type                  | Advance, Danfoss, Kirloskar, Honeywell               |



|    |  |  |
|----|--|--|
| 23 | Check Valve – Dual Plate   | Advance,Audco,Honeywell  |
| 24 | Air Release Valve  | Arco,OR,RB,Zoloto  |
| 25 | Mechanical Seal  | Burgmann,Sealol  |
| 26 | Y Strainer   | Emerald ,Sant,SKS,Zoloto   |
| 27 | Couplings  | Lovejoy  |
| 28 | Anti Vibration Mounting & Flexible Connections                           | Cori,Dunlop,Flexionics,Kanwal industrial Corporation,Resistoflex |
| 29 | Pressure Gauge   | Emerald ,Fiebig,H Guru,Wika                                      |
| 30 | Flexible hose for sprinkler  | New Age/Tyco   |
| 31 | Welding Rods   | ADOR,Esab  |
| 32 | Fastener   | Fisher,Hilti   |
| 33 | Switch gears and control switches and other items for fire control panel | L&T,ABB, Schneider   |
| 34 | GRP Tank   | Exeed, Trident infratech, SStar Fibre Industries                 |

| LIST OF APPROVED MAKES |                                      |   |
|------------------------|--------------------------------------|---|
| SL NO                  | ITEM                                 | MAKES                                     |
| B. Fire Alarm System   |                                      |   |
| 1                      | Smoke Detectors                      | Agni/ Ravel/ GST/ System Sensor           |
| 2                      | Heat Detectors                       | Agni/ Ravel/ GST/ System Sensor           |
| 3                      | Fire Alarm Panel                     | Agni/ Ravel/ GST/ System Sensor           |
| 4                      | Sounder                              | Agni/ Ravel/ GST/ System Sensor           |
| 5                      | Manual Call Stations / Hooters       | Agni/ Ravel/ GST/ System Sensor           |
| 7                      | Armoured copper conductor FRLS cable | National/Polycab/Gloster/RR Kabel/Finolex |

**BILL OF QUANTITIES**  
**ABSTRACT**

| <b>SL.<br/>NO</b> | <b>ITEM</b>   | <b>AMOUNT (Rs.)</b> |
|-------------------|---|---------------------|
| <b>A</b>          | <b>FOR THE FPS/FAS FOR THE HOSPITAL BUILDINGS<br/>including all expenses, taxes &amp; duties except service tax.</b>  |                     |
| <b>B</b>          | <b>FOR THE FPS/FAS FOR THE EXISTING BUILDINGS<br/>including all expenses, taxes &amp; duties except service tax.</b>  |                     |
| <b>(A+B)</b>      | <b>Total Amount for the work- Supply, Installation and<br/>commissioning of fire protection system and getting No<br/>Objection Certificate (NOC) from fire and safety authorities<br/>including all expenses, taxes &amp; duties except service tax.</b> |                     |

**A. FOR THE FPS/FAS FOR THE HOSPITAL BUILDINGS**

**1. HYDRANT SYSTEM FOR HOSPITAL BLOCK AT JIPMER**

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| <b>1</b> | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "C" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|          | a.150mm dia   | 540 | Mtrs |      |        |
|          | b.100mm dia   | 220 | Mtrs |      |        |
|          | c.80mm dia  | 12  | Mtrs |      |        |
|          |   |     |      |      |        |
| <b>2</b> | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|          | a.150mm dia   | 11  | Nos. |      |        |
|          |   |     |      |      |        |
| <b>3</b> | <b>NON RETURN VALVE</b>   |     |      |      |        |
|          | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.   |     |      |      |        |
|          | a.100mm dia   | 1   | Nos. |      |        |
|          |   |     |      |      |        |
| <b>4</b> | <b>HYDRANT VALVE</b>  |     |      |      |        |

|   |  |    |      |  |  |
|---|--|----|------|--|--|
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 42 | Nos. |  |  |
|   |  |    |      |  |  |
| 5 | <b>HOSE REEL SET</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 30 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 32 | Nos. |  |  |
|   |  |    |      |  |  |
| 6 | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 42 | Nos. |  |  |
|   |  |    |      |  |  |
| 7 | <b>FIRE HOSE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 84 | Nos. |  |  |
|   |  |    |      |  |  |
| 8 | <b>BRANCH PIPE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 42 | Nos. |  |  |
|   |  |    |      |  |  |
| 9 | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |

|    |  |    |      |  |  |
|----|--|----|------|--|--|
|    | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to riser main. | 2  | Nos. |  |  |
|    |  |    |      |  |  |
|    |  |    |      |  |  |
| 10 | <b>PRESSURE GAUGE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 2  | Nos  |  |  |
|    |  |    |      |  |  |
| 11 | <b>BALL VALVE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of Ball valve of following dia   |    |      |  |  |
|    | a 20mm dia   | 32 | Nos. |  |  |
|    |  |    |      |  |  |
| 12 | <b>AIR RELEASE VALVE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 10 | Nos. |  |  |
|    |  |    |      |  |  |
| 13 | <b>TERRACE TANK</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 2  | Nos. |  |  |
|    |  |    |      |  |  |
|    |  |    |      |  |  |
|    | <b>TOTAL</b>   |    |      |  |  |

## **2. FIRE FIGHTING SYSTEM FOR I.D WARD AT JIPMER**

| SL NO | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|-------|---|-----|------|------|--------|
|       | <b>HYDRANT SYSTEM</b>   |     |      |      |        |
| 1     | <b>TERRACE PUMP</b>   | -   | -    | -    | -      |
|       | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.         | 1   | Nos. |      |        |
|       |   |     |      |      |        |
| 2     | <b>PIPING</b>   |     |      |      |        |
|       | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "C" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|       | a.100mm dia   | 30  | Mtrs |      |        |
|       | b.80mm dia  | 6   | Mtrs |      |        |
|       |   |     |      |      |        |
| 3     | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|       | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|       | a.100mm dia   | 2   | Nos. |      |        |
|       |   |     |      |      |        |
| 4     | <b>NON RETURN VALVE</b>   |     |      |      |        |

|   |  |   |      |  |  |
|---|--|---|------|--|--|
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |   |      |  |  |
|   | a.100mm dia  | 1 | Nos. |  |  |
|   |  |   |      |  |  |
| 5 | <b>HYDRANT VALVE</b>   |   |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 2 | Nos. |  |  |
|   |  |   |      |  |  |
| 6 | <b>HOSE REEL SET</b>   |   |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 30 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 2 | Nos. |  |  |
|   |  |   |      |  |  |
| 7 | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |  |  |
|   |  |   |      |  |  |
| 8 | <b>FIRE HOSE</b>   |   |      |  |  |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male & female coupling as per IS:901 binded with cu wire   | 4 | Nos. |  |  |
|   |  |   |      |  |  |
| 9 | <b>BRANCH PIPE</b>   |   |      |  |  |

|          |  |   |      |  |  |
|----------|--|---|------|--|--|
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |  |  |
| 10       | <b>FIRE BRIGADE INLET</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to riser main. | 1 | Nos. |  |  |
| 11       | <b>PRESSURE GAUGE</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 1 | Nos  |  |  |
| 12       | <b>BALL VALVE</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |  |  |
|          | a 20mm dia   | 2 | Nos. |  |  |
| 13       | <b>AIR RELEASE VALVE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 1 | Nos. |  |  |
| 14       | <b>TERRACE TANK</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 1 | Nos. |  |  |
|          | <b>TOTAL OF FPS</b>  |   |      |  |  |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   |   |      |  |  |
| 1        | <b>MANUAL CALL POINT</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of manual call points  | 2 | Nos. |  |  |
| 2        | <b>HOOTER</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of audio alarm hooters.  | 2 | Nos. |  |  |
| 3        | <b>FIRE ALARM PANEL</b>  |   |      |  |  |



|          |   |    |      |  |  |
|----------|---|----|------|--|--|
|          | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |  |  |
| 4        | <b>CABLE</b>  |    |      |  |  |
|          | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 50 | Mtrs |  |  |
| 5        | <b>SIGNAGES</b>   |    |      |  |  |
|          | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6  | Nos  |  |  |
| 6        | <b>BATTERY</b>  |    |      |  |  |
|          | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |  |  |
|          |   |    |      |  |  |
|          | <b>TOTAL OF FAS</b>   |    |      |  |  |
| <b>C</b> | <b><u>Civil Works</u></b>   |    |      |  |  |
| 1        | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 6  | each |  |  |
| 2        | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50 | Mtrs |  |  |
| 3        | Finishing walls with water proofing cement paint of required shade :  |    |      |  |  |
|          | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25 | sqm  |  |  |
| 4        | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :  |    |      |  |  |

|   |  |       |     |  |  |
|---|--|-------|-----|--|--|
|   | Cement mortar 1:4 (1 cement : 4 coarse sand)                             | 0.162 | cum |  |  |
| 5 | 15 mm cement plaster on rough side of single or half brick wall of mix : |       |     |  |  |
|   | 1:4 (1 cement: 4 coarse sand)  | 0.6   | sqm |  |  |
|   |  |       |     |  |  |
|   | <b>TOTAL OF CIVIL</b>  |       |     |  |  |
|   |  |       |     |  |  |
|   | <b>TOTAL (A+B+C)</b>   |       |     |  |  |

### **3. HYDRANT SYSTEM FOR INSTITUTE BLOCK AT JIPMER**

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| 1        | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "C" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|          | a.150mm dia   | 210 | Mtrs |      |        |
|          | b.100mm dia   | 80  | Mtrs |      |        |
|          | c.80mm dia  | 12  | Mtrs |      |        |
|          |   |     |      |      |        |
| 2        | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|          | a.150mm dia   | 2   | Nos. |      |        |
|          | b.100mm dia   | 4   | Nos. |      |        |
|          |   |     |      |      |        |
| 3        | <b>NON RETURN VALVE</b>   |     |      |      |        |

|   |  |    |      |  |  |
|---|--|----|------|--|--|
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |    |      |  |  |
|   | a.100mm dia  | 1  | Nos. |  |  |
|   |  |    |      |  |  |
| 4 | <b>HYDRANT VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290   | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 5 | <b>HOSE REEL SET</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 30 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 8  | Nos. |  |  |
|   |  |    |      |  |  |
| 6 | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 7 | <b>FIRE HOSE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 24 | Nos. |  |  |
|   |  |    |      |  |  |
| 8 | <b>BRANCH PIPE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 9 | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |

|    |   |      |      |  |  |
|----|---|------|------|--|--|
|    | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main.                                | 2    | Nos. |  |  |
|    |   |      |      |  |  |
| 10 | <b>PRESSURE GAUGE</b>   |      |      |  |  |
|    | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.  | 1    | Nos  |  |  |
|    |   |      |      |  |  |
| 11 | <b>BALL VALVE</b>   |      |      |  |  |
|    | Supply, installation, testing and commissioning of Ball valve of following dia  |      |      |  |  |
|    | a 20mm dia  | 8    | Nos. |  |  |
|    |   |      |      |  |  |
| 12 | <b>AIR RELEASE VALVE</b>  |      |      |  |  |
|    | Supply, installation, testing and commissioning of Air Release valve of 20mm dia  | 1    | Nos. |  |  |
|    |   |      |      |  |  |
| 13 | <b>SPRINKLER SYSTEM</b>   |      |      |  |  |
|    | Supply, installation, testing and commissioning of Sprinkler system including pendant and sidewall sprinklers, flexible hoses, MS 'C' class pipes of appropriate sizes confirming to IS: 1239, valves of appropriate sizes and associated civil works | 9000 | Sq,m |  |  |
|    |   |      |      |  |  |
| 14 | <b>TERRACE TANK</b>   |      |      |  |  |
|    | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity  | 2    | Nos. |  |  |
|    |   |      |      |  |  |
|    | <b>Total of A</b>   |      |      |  |  |
|    | <b>SPRINKLER SYSTEM</b>   |      |      |  |  |

|     |   |      |    |  |  |
|-----|---|------|----|--|--|
| 1   | Providing, laying, jointing and testing of following sizes of pipes conforming to IS-1239 with all accessories like all fittings (for pipes upto 50mm dia threaded forged steel fittings and for pipes above 50 mm dia MS fitting with welded joint shall be used) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting / fixing the pipe on floor/wall/ceiling with clamps, hangers (using anchor fastners) as per specification. GI pipe sleeve of suitable higher size shall be provided wherever the pipes are crossing the walls / floors and sealing the sleeves with glass wool in between & fire sealant compound at either end all as per Project Manager's requirements including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects. |      |    |  |  |
|     | All hangers, clamps, brackets etc. shall be of galvanized iron unless specified otherwise and then supply of the same shall also be included for rates under this head. Welding of any kind on the galvanized support / hanger shall not be permitted.  |      |    |  |  |
|     | Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow as per the approval of the Project Manager.  |      |    |  |  |
|     | For Sprinkler system - MS 'C' Heavy class pipe  |      |    |  |  |
| 1.1 | 25 mm dia   | 1784 | RM |  |  |
| 1.2 | 32 mm dia   | 154  | RM |  |  |
| 1.3 | 40 mm dia   | 160  | RM |  |  |
| 1.4 | 50 mm dia   | 240  | RM |  |  |
| 1.5 | 65 mm dia   | 398  | RM |  |  |
| 1.6 | 80 mm dia   | 290  | RM |  |  |
| 1.7 | 100 mm dia  | 188  | RM |  |  |
| 1.8 | 150 mm dia  | 310  | RM |  |  |
| 2   | Supplying, fixing, testing and commissioning of following BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O ring & PN 16 pressure rating as specified  |      |    |  |  |

|     |  |     |     |  |  |
|-----|--|-----|-----|--|--|
| 2.1 | 150 mm dia   | 4   | No  |  |  |
| 2.2 | 100 mm dia   | 11  | No  |  |  |
| 2.3 | 80 mm dia  | 4   | No  |  |  |
| 2.4 | 65 mm dia  | 1   | No  |  |  |
| 3   | Providing and fixing cast iron Dual plate Non-return valve of approved quality conforming to API-594 with bolts, nuts, washers, 3mm thick insertion rubber gaskets complete. as reqd.  |     |     |  |  |
|     | 150 mm dia   | 1   | No  |  |  |
| 4   | Providing & fixing brass quartzoid sprinklers (UL approved) of 15 mm dia size, suitable for sustaining the pressure on the seat & water hammer effect. The type & temperature rating shall be as follows :   |     |     |  |  |
| 4.1 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Pendant type  | 816 | No. |  |  |
| 4.2 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Sidewall extended coverage sprinkler quick response type.   | 20  | No. |  |  |
| 5   | Supply, installation, testing and commissioning of <b>electrically operated water flow switches</b> (Vane type) including tamper switch and accessories, complete with tap off socket arrangement as required, with potential free contact with 2 Nos. NONC.   | 3   | No. |  |  |
| 6   | Supplying, fixing, testing & commissioning of Sprinkler Flexible Hose 1000 mm in length, Unbraided, UL Listed along with all necessary accessories like Nipple threaded , Reducing Nipple threaded, Large Bracket with Bolt, Small Bracket with Bolt, clamps, reducer collar, Meter Square Bar etc complete as per spec. | 741 | No. |  |  |
| 7   | Supply, installation, testing and commissioning of Ball valve of following dia   |     |     |  |  |
|     | a 20mm dia   | 12  | No. |  |  |
| 8   | Providing and fixing of <b>spring loaded relief valve</b> suitable for pressure of 16 Kg / sqcm including flanges nuts bolt and washer etc. complete as required.  | 3   | No. |  |  |

|    |  |   |     |  |  |
|----|--|---|-----|--|--|
| 9  | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 2 | No. |  |  |
| 10 | Providing & Fixing of Installation <b>Control Valve</b> with turbine type Mechanic Alarm Gong to be connected with control valve, drain & test valve and all other necessary components as per manufacturer's specifications complete as required. | 3 | No. |  |  |
|    |  |   |     |  |  |
|    | <b>TOTAL OF B</b>  |   |     |  |  |
|    |  |   |     |  |  |
|    | <b>TOTAL</b>   |   |     |  |  |

#### 4. HYDRANT SYSTEM FOR OPD BLOCK AT JIPMER

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| 1        | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "C" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|          | a.150mm dia   | 240 | Mtrs |      |        |
|          | b.100mm dia   | 84  | Mtrs |      |        |
|          | c.80mm dia  | 24  | Mtrs |      |        |
|          |   |     |      |      |        |
|          |   |     |      |      |        |
| 2        | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |

|   |  |    |      |  |  |
|---|--|----|------|--|--|
|   | a.150mm dia  | 6  | Nos. |  |  |
|   | b.100mm dia  | 4  | Nos. |  |  |
|   |  |    |      |  |  |
| 3 | <b>NON RETURN VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |    |      |  |  |
|   | a.100mm dia  | 1  | Nos. |  |  |
|   |  |    |      |  |  |
| 4 | <b>HYDRANT VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 10 | Nos. |  |  |
|   |  |    |      |  |  |
| 5 | <b>HOSE REEL SET</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 30 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 6  | Nos. |  |  |
|   |  |    |      |  |  |
| 6 | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 10 | Nos. |  |  |
|   |  |    |      |  |  |
| 7 | <b>FIRE HOSE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS with male & female coupling as per IS:901 binded with cu wire  | 20 | Nos. |  |  |
|   |  |    |      |  |  |



|    |  |    |      |  |  |
|----|--|----|------|--|--|
| 8  | <b>BRANCH PIPE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 10 | Nos. |  |  |
| 9  | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to riser main. | 2  | Nos. |  |  |
| 10 | <b>PRESSURE GAUGE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 2  | Nos  |  |  |
| 11 | <b>BALL VALVE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of Ball valve of following dia   |    |      |  |  |
|    | a 20mm dia   | 6  | Nos. |  |  |
| 12 | <b>AIR RELEASE VALVE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 2  | Nos. |  |  |
| 13 | <b>TERRACE TANK</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 1  | Nos. |  |  |
|    |  |    |      |  |  |
|    | <b>Total of FPS</b>  |    |      |  |  |
|    | <b><u>Civil Works</u></b>  | -  | -    |  |  |

|   |  |     |     |  |  |
|---|--|-----|-----|--|--|
| 1 | Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. | 100 | cum |  |  |
|   | <b>Total of Civil</b>  |     |     |  |  |
|   |  |     |     |  |  |
|   | <b>TOTAL</b>   |     |     |  |  |

| <b>5. FIRE PROTECTION SYSTEM FOR EMS BLOCK AT JIPMER</b> |   |            |             |             |               |
|--|---|------------|-------------|-------------|---------------|
| <b>SI No</b>   | <b>Description Of Work</b>  | <b>Qty</b> | <b>Unit</b> | <b>Rate</b> | <b>Amount</b> |
| <b>A</b>   | <b>SERVICING OF ITEMS FOR EMS</b>   |            |             |             |               |
| 1  | General servicing and maintenance of 100Butterfly Valve inclduing Gasket changing                               | 2          | Nos         |             |               |
| 2  | General servicing and maintenance of Hydrant Valve incluidng replacement of washer, panitnign (if required) etc | 6          | Job         |             |               |
| 3  | General servicing and maintenance of Hose Box incluidng replacement of broken glass, beeding, painting etc      | 3          | Job         |             |               |
| 4  | General servicing and maintenance of Fire Brigade Inlet 3 way   | 2          | Nos         |             |               |
| 5  | General servicing and maintenance of Manual Call Point including changing of broken glass, switch etc           | 2          | Nos         |             |               |
| 6  | General servicing and maintenance of Hooter including changing of card, speaker etc                             | 2          | Nos         |             |               |

|                  |  |     |     |  |  |
|------------------|--|-----|-----|--|--|
| 7                | General servicing and maintenance of addressable/conventional Smoke/Heat detector including cleaning, removing dust with blower  | 605 | Nos |  |  |
| 8                | General servicing and maintenance of 6 loop addressable Notifier Fire Alarm Panel including and reprogramming  | 1   | Nos |  |  |
| 9                | General servicing and maintenance of 4zone conventional Fire Alarm Panel including changing of damaged power supply card, zone card, resistance etc.   | 1   | Nos |  |  |
| 10               | Test running and conducting demonstration  | 1   | Job |  |  |
| <b>SUB TOTAL</b> |  |     |     |  |  |
| -                |  |     |     |  |  |
| <b>B</b>         | <b>SPRINKLER SYSTEM</b>  |     |     |  |  |
| 1                | Providing, laying, jointing and testing of following sizes of pipes conforming to IS-1239 with all accessories like all fittings (for pipes upto 50mm dia threaded forged steel fittings and for pipes above 50 mm dia MS fitting with welded joint shall be used) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting / fixing the pipe on floor/wall/ceiling with clamps, hangers (using anchor fasteners) as per specification. GI pipe sleeve of suitable higher size shall be provided wherever the pipes are crossing the walls / floors and sealing the sleeves with glass wool in between & fire sealant compound at either end all as per Project Manager's requirements including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects. |     |     |  |  |

|     |  |     |    |  |  |
|-----|--|-----|----|--|--|
|     | All hangers, clamps, brackets etc. shall be of galvanized iron unless specified otherwise and then supply of the same shall also be included for rates under this head. Welding of any kind on the galvanized support / hanger shall not be permitted.                                       |     |    |  |  |
|     | Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow as per the approval of the Project Manager. |     |    |  |  |
|     | For Sprinkler system - MS `C' Heavy class pipe   |     |    |  |  |
| 1.1 | 25 mm dia  | 562 | RM |  |  |
| 1.2 | 32 mm dia  | 70  | RM |  |  |
| 1.3 | 40 mm dia  | 72  | RM |  |  |
| 1.4 | 50 mm dia  | 162 | RM |  |  |
| 1.5 | 65 mm dia  | 126 | RM |  |  |
| 1.6 | 80 mm dia  | 42  | RM |  |  |
| 1.7 | 100 mm dia   | 24  | RM |  |  |
| 1.8 | 150 mm dia   | 274 | RM |  |  |
| 2   | Supplying, fixing, testing and commissioning of following BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O ring & PN 16 pressure rating as specified   |     |    |  |  |
| 2.1 | 150 mm dia   | 3   | No |  |  |
| 2.2 | 100 mm dia   | 1   | No |  |  |
| 2.3 | 80 mm dia  | 2   | No |  |  |
| 2.4 | 65 mm dia  | 7   | No |  |  |
| 3   | Providing and fixing cast iron Dual plate Non -return valve of approved quality conforming to API-594 with bolts, nuts, washers, 3mm thick insertion rubber gaskets complete. as reqd.   |     |    |  |  |
|     | 150 mm dia   | 1   | No |  |  |

|     |  |     |     |  |  |
|-----|--|-----|-----|--|--|
| 4   | Providing & fixing brass quartzoid sprinklers (UL approved) of 15 mm dia size, suitable for sustaining the pressure on the seat & water hammer effect. The type & temperature rating shall be as follows :   |     |     |  |  |
| 4.1 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Pendant type  | 232 | No. |  |  |
| 4.2 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Sidewall extended coverage sprinkler quick response type.   | 20  | No. |  |  |
| 5   | Supply, installation, testing and commissioning of <b>electrically operated water flow switches</b> (Vane type) including tamper switch and accessories, complete with tap off socket arrangement as required, with potential free contact with 2 Nos. NONC.   | 2   | No. |  |  |
| 6   | Supplying, fixing, testing & commissioning of Sprinkler Flexible Hose 1000 mm in length, Unbraided, UL Listed along with all necessary accessories like Nipple threaded , Reducing Nipple threaded, Large Bracket with Bolt, Small Bracket with Bolt, clamps, reducer collar, Meter Square Bar etc complete as per spec. | 205 | No. |  |  |
| 7   | Supply, installation, testing and commissioning of Ball valve of following dia   |     |     |  |  |
|     | a 20mm dia   | 8   | No. |  |  |
| 8   | Providing and fixing of <b>spring loaded relief valve</b> suitable for pressure of 16 Kg / sqcm including flanges nuts bolt and washer etc. complete as required.  | 2   | No. |  |  |

|                                      |  |    |     |  |  |
|--------------------------------------|--|----|-----|--|--|
| 9                                    | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 4  | No. |  |  |
| 10                                   | Providing & Fixing of Installation <b>Control Valve</b> with turbine type Mechanic Alarm Gong to be connected with control valve, drain & test valve and all other necessary components as per manufacturer's specifications complete as required. | 2  | No. |  |  |
|                                      |  |    |     |  |  |
| <b>TOTAL OF SPRINKLER SYSTEM (B)</b> |  |    |     |  |  |
| <b>C</b>                             | <b>REPLACEMENT AND EXTRA ITEMS FOR EMS</b>   |    |     |  |  |
| 1                                    | Supply & erection of Air Release Valve   | 2  | Nos |  |  |
| 2                                    | Supply & erection of 20mm Ball Valve   | 6  | Nos |  |  |
| 3                                    | Supply & erection of CI butterfly Valve 100mm dia  | 2  | Nos |  |  |
| 4                                    | Supply & erection of single headed SS hdyrant valve  | 2  | Nos |  |  |
| 5                                    | Supply & erection of Female coupling for hdyrant valve   | 2  | Nos |  |  |
| 6                                    | Supply & erection of Lug for hdyrant valve   | 4  | Nos |  |  |
| 7                                    | Supply & erection of double door hose box  | 5  | Nos |  |  |
| 8                                    | Supply & erection of 63mm dia CP Hose 15mtr length with male & female SS coupling  | 10 | Nos |  |  |
| 9                                    | Supply & erection of Hose Reel with 20mm dia Termoplast Hose of 30 mtr length with PVC shut of Nozzle  | 5  | Nos |  |  |
| 10                                   | Supply & erection of Bracnh Pipe SS with ISI mark  | 6  | Nos |  |  |
| 11                                   | Supply & erection of Manual call Point break glass type  | 3  | Nos |  |  |
| 12                                   | Supply & erection of Electronic Hooter   | 3  | Nos |  |  |
| 13                                   | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel  | 3  | Nos |  |  |
| 14                                   | Supply & erection of Addressable Manual call Point break glass type  | 2  | Nos |  |  |

|                                      |   |     |      |      |        |
|--------------------------------------|---|-----|------|------|--------|
| 15                                   | Supply & erection of addressable Electronic Hooter  | 2   | Nos  |      |        |
| 16                                   | Supply & erection of addressable Detector   | 30  | Nos  |      |        |
| 17                                   | Supply & erection of 2 x 1.5 Sq.mm FRLS armoooured cable  | 100 | Mtr  |      |        |
| 18                                   | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6   | Nos  |      |        |
|                                      | SUB TOTAL   |     |      |      |        |
| C                                    | Civil Works   |     |      |      |        |
| 1                                    | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50  | Mtrs |      |        |
| 2                                    | Finishing walls with water proofing cement paint of required shade :  |     |      |      |        |
|                                      | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25  | sqm  |      |        |
| 3                                    | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 60  | each |      |        |
|                                      | Total of Civil  |     |      |      |        |
|                                      |   |     |      |      |        |
|                                      | GRAND TOTAL (A + B+C)   |     |      |      |        |
|                                      |   |     |      |      |        |
| 6. HYDRANT SYSTEM FOR PMRC AT JIPMER |   |     |      |      |        |
| SL NO                                | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
| A                                    | FPS   |     |      |      |        |

|   |   |     |      |  |  |
|---|---|-----|------|--|--|
| 1 | <b>PIPING</b>   |     |      |  |  |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "C" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |  |  |
|   | a.150mm dia   | 270 | Mtrs |  |  |
|   | b.100mm dia   | 90  | Mtrs |  |  |
|   | c.80mm dia  | 24  | Mtrs |  |  |
|   |   |     |      |  |  |
|   |   |     |      |  |  |
| 2 | <b>BUTTERFLY VALVE</b>  |     |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |  |  |
|   | a.150mm dia   | 6   | Nos. |  |  |
|   | b.100mm dia   | 4   | Nos. |  |  |
|   |   |     |      |  |  |
| 3 | <b>NON RETURN VALVE</b>   |     |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.   |     |      |  |  |
|   | a.100mm dia   | 1   | Nos. |  |  |
|   |   |     |      |  |  |
| 4 | <b>HYDRANT VALVE</b>  |     |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290  | 15  | Nos. |  |  |
|   |   |     |      |  |  |
| 5 | <b>HOSE REEL SET</b>  |     |      |  |  |



|    |  |    |      |  |  |
|----|--|----|------|--|--|
|    | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 30 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 9  | Nos. |  |  |
| 6  | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 15 | Nos. |  |  |
| 7  | <b>FIRE HOSE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS with male & female coupling as per IS:901 binded with cu wire  | 30 | Nos. |  |  |
| 8  | <b>BRANCH PIPE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 15 | Nos. |  |  |
| 9  | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to riser main.   | 2  | Nos. |  |  |
| 10 | <b>PRESSURE GAUGE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 2  | Nos  |  |  |
|    |  |    |      |  |  |

|    |  |     |      |  |   |
|----|--|-----|------|--|---|
| 11 | <b>BALL VALVE</b>  |     |      |  |   |
|    | Supply, installation, testing and commissioning of Ball valve of following dia   |     |      |  |   |
|    | a 20mm dia   | 9   | Nos. |  |   |
| 12 | <b>AIR RELEASE VALVE</b>   |     |      |  |   |
|    | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 3   | Nos. |  |   |
| 13 | <b>TERRACE TANK</b>  |     |      |  |   |
|    | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 2   | Nos. |  |   |
|    |  |     |      |  |   |
|    | <b>Total of FPS</b>  |     |      |  |   |
|    | <b><u>Civil Works</u></b>  | -   | -    |  | - |
| 1  | Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. | 100 | cum  |  |   |
|    | <b>Total of Civil</b>  |     |      |  |   |
|    |  |     |      |  |   |
|    | <b>TOTAL</b>   |     |      |  |   |

**B.****FOR THE FPS/FAS FOR THE EXISTING BUILDINGS**

| <b>1.REVAMPING OF FIRE FIGHTING SYSTEM AT ADMIN BLOCK AND CANTEEN AT JIPMER</b> |  |            |             |             |               |
|---|--|------------|-------------|-------------|---------------|
| <b>SL NO</b>  | <b>DESCRIPTION</b>   | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>  | <b>GENERAL SERVICING &amp; MAINTENANCE OF ADMIN BLOCK AND CANTEEN</b>  |            |             |             |               |
| 1   | General servicing and maintenance of Sluice Valve upto 150mm including gasket changing   | 2          | Nos         |             |               |
| 2   | General servicing and maintenance of 100mm Butterfly Valve including Gasket changing   | 2          | Nos         |             |               |
| 3   | General servicing and maintenance of Hydrant Valve including replacement of washer, painting (if required) etc.                          | 16         | Job         |             |               |
| 4   | General servicing and maintenance of Hose Box including replacement of broken glass, beading, painting etc.                              | 6          | Job         |             |               |
| 5   | General servicing and maintenance of Hose Reel including changing of braided hose and connections  | 3          | Nos         |             |               |
| 6   | General servicing and maintenance of Fire Brigade Inlet 3 way  | 8          | Nos         |             |               |
| 7   | General servicing and maintenance of Manual Call Point including changing of broken glass, switch etc.                                   | 9          | Nos         |             |               |
| 8   | General servicing and maintenance of Hooter including changing of card, speaker etc.   | 9          | Nos         |             |               |
| 9   | General servicing and maintenance of Smoke/Heat detector including cleaning, removing dust with blower                                   | 350        | Nos         |             |               |
| 10  | General servicing and maintenance of 4 zone Fire Alarm Panel including changing of damaged power supply card, zone card, resistance etc. | 12         | Nos         |             |               |

|          |   |   |     |  |  |
|----------|---|---|-----|--|--|
| 11       | General servicing and maintenance of 12 Fire Alarm Panel including changing of damaged power supply card, zone card, resistance etc.  | 1 | Nos |  |  |
| 12       | Test running and conducting demonstration   | 1 | Job |  |  |
|          |   |   |     |  |  |
| <b>B</b> |   |   |     |  |  |
| 1        | Providing, laying, jointing and testing of following sizes of pipes conforming to IS-1239 with all accessories like all fittings (for pipes upto 50mm dia threaded forged steel fittings and for pipes above 50 mm dia MS fitting with welded joint shall be used) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting / fixing the pipe on floor/wall/ceiling with clamps, hangers (using anchor fastners) as per specification. Gpipe sleeve of suitable higher size shall be provided wherever the pipes are crossing the walls / floors and sealing the sleeves with glass wool in between & fire sealent compound at either end all as per Project Manager's requirements including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects. |   |     |  |  |
|          | All hangers, clamps, brackets etc. shall be of galvanized iron unless specified otherwise and then supply of the same shall also be included for rates under this head. Welding of any kind on the galvanized support / hanger shall not be permitted.  |   |     |  |  |
|          | Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow as per the approval of the Project Manager.  |   |     |  |  |
|          | For Sprinkler system - MS `C' Heavy class pipe  |   |     |  |  |

|     |  |      |     |  |  |
|-----|--|------|-----|--|--|
| 1.1 | 25 mm dia  | 1272 | RM  |  |  |
| 1.2 | 32 mm dia  | 144  | RM  |  |  |
| 1.3 | 40 mm dia  | 128  | RM  |  |  |
| 1.4 | 50 mm dia  | 304  | RM  |  |  |
| 1.5 | 65 mm dia  | 266  | RM  |  |  |
| 1.6 | 80 mm dia  | 72   | RM  |  |  |
| 1.7 | 100 mm dia   | 114  | RM  |  |  |
| 1.8 | 150 mm dia   | 370  | RM  |  |  |
| 2   | Supplying, fixing, testing and commissioning of following BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O ring & PN 16 pressure rating as specified   |      |     |  |  |
| 2.1 | 150 mm dia   | 3    | No  |  |  |
| 2.2 | 100 mm dia   | 4    | No  |  |  |
| 2.3 | 80 mm dia  | 10   | No  |  |  |
| 2.4 | 65 mm dia  | 7    | No  |  |  |
| 3   | Providing and fixing cast iron Dual plate Non -return valve of approved quality conforming to API-594 with bolts, nuts, washers, 3mm thick insertion rubber gaskets complete. as reqd.   |      |     |  |  |
|     | 150 mm dia   | 1    | No  |  |  |
| 4   | Providing & fixing brass quartzoid sprinklers (UL approved) of 15 mm dia size, suitable for sustaining the pressure on the seat & water hammer effect. The type & temperature rating shall be as follows :                           |      |     |  |  |
| 4.1 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Pendant type  | 552  | No. |  |  |
| 4.2 | Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Sidewall extended coverage sprinkler quick response type. | 20   | No. |  |  |

|   |   |     |     |  |  |
|---|---|-----|-----|--|--|
| 5 | Supply, installation, testing and commissioning of <b>electrically operated water flow switches</b> (Vane type) including tamper switch and accessories, complete with tap off socket arrangement as required, with potential free contact with 2 Nos. NONC.  | 2   | No. |  |  |
| 6 | Supplying, fixing, testing & commissioning of Sprinkler Flexible Hose 1000 mm in length, Unbraided, UL Listed along with all necessary accessories like Nipple threaded, Reducing Nipple threaded, Large Bracket with Bolt, Small Bracket with Bolt, clamps, reducer collar, Meter Square Bar etc complete as per spec. | 502 | No. |  |  |
| 7 | Supply, installation, testing and commissioning of Ball valve of following dia  |     |     |  |  |
|   | a 20mm dia  | 10  | No. |  |  |
| 8 | Providing and fixing of <b>spring loaded relief valve</b> suitable for pressure of 16 Kg / sqcm including flanges nuts bolt and washer etc. complete as required.   | 2   | No. |  |  |
| 9 | Providing & Fixing of Installation <b>Control Valve</b> with turbine type Mechanic Alarm Gong to be connected with control valve, drain & test valve and all other necessary components as per manufacturer's specifications complete as required.  | 2   | No. |  |  |
|   | <b>Total of Sprinkler System</b>  |     |     |  |  |

| <b>C REPLACING AND PROVIDING NEW ITEMS FOR ADMIN BUILDING</b> |   |            |             |             |               |
|---|---|------------|-------------|-------------|---------------|
| <b>SI No</b>  | <b>Description Of Work</b>                          | <b>Qty</b> | <b>Unit</b> | <b>Rate</b> | <b>Amount</b> |
| 1   | Supply & erection of Air Release Valve              | 3          | Nos         |             |               |
| 2   | Supply & erection of 20mm Ball Valve                | 12         | Nos         |             |               |
| 3   | Supply & erection of CI Sluice Valve 100mm dia      | 2          | Nos         |             |               |
| 4   | Supply & erection of single headed SS hydrant valve | 6          | Nos         |             |               |

|          |  |     |     |  |  |
|----------|--|-----|-----|--|--|
| 5        | Supply & erection of Female coupling for hydrant valve   | 8   | Nos |  |  |
| 6        | Supply & erection of Lug for hydrant valve   | 12  | Nos |  |  |
| 7        | Supply & erection of double door hose box  | 7   | Nos |  |  |
| 8        | Supply & erection of 63mm dia CP Hose 15mtr length with male & female SS coupling                        | 18  | Nos |  |  |
| 9        | Supply & erection of Hose Reel with 20mm dia Thermoplastic Hose of 30 mtr length with PVC shut of Nozzle | 12  | Nos |  |  |
| 10       | Supply & erection of Branch Pipe SS with ISI mark  | 16  | Nos |  |  |
| 11       | Supply & erection of Manual call Point break glass type  | 5   | Nos |  |  |
| 12       | Supply & erection of Electronic Hooter   | 5   | Nos |  |  |
| 13       | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel  | 10  | Nos |  |  |
| 14       | Supply & erection of 2 x 1.5 Sq.mm FRLS armored cable  | 850 | Mtr |  |  |
| 15       | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"  | 14  | Nos |  |  |
| 16       | Dismantling of existing pipe & Supply & erection of MS C class pipe of 100mm dia                         | 70  | Mtr |  |  |
| 17       | Dismantling of existing pipe & Supply & erection of MS C class pipe of 150mm dia                         | 40  | Mtr |  |  |
| 18       | Supply and erection of MS C class pipe of 80mm dia   | 10  | Mtr |  |  |
| 19       | Supply & erection of GRP tank of nominal capacity 5000 ltrs  | 2   | Nos |  |  |
| 20       | Supply & erection of Heat/smoke detector   | 220 | Nos |  |  |
|          |  |     |     |  |  |
| <b>D</b> |  |     |     |  |  |

|   |  |    |     |  |  |
|---|--|----|-----|--|--|
| 1 | Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. | 55 | cum |  |  |
| 2 | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.   | 50 | Mtr |  |  |
| 3 | Finishing walls with water proofing cement paint of required shade :   |    |     |  |  |
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete   | 25 | sqm |  |  |
|   | <b>Total of Civil works</b>  |    |     |  |  |
|   |  |    |     |  |  |
|   | <b>GRAND TOTAL (A + B+C)</b>   |    |     |  |  |
|   |  |    |     |  |  |

## 2. FIRE FIGHTING SYSTEM FOR ASCHOFF HOUSE AT JIPMER

| SL NO | DESCRIPTION  | QTY | UNIT | RATE | AMOUNT |
|-------|--------------|-----|------|------|--------|
| A     | FPS          |     |      |      |        |
| 1     | TERRACE PUMP |     |      |      |        |



|   |   |    |      |  |  |
|---|---|----|------|--|--|
|   | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.         | 1  | Nos. |  |  |
|   |   |    |      |  |  |
| 2 | <b>PIPING</b>   |    |      |  |  |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class conforming to IS : 1239 with malleable specials conforming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |    |      |  |  |
|   | a.100mm dia   | 60 | Mtrs |  |  |
|   | b.80mm dia  | 6  | Mtrs |  |  |
|   |   |    |      |  |  |
| 3 | <b>BUTTERFLY VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |    |      |  |  |
|   | a.100mm dia   | 3  | Nos. |  |  |
|   |   |    |      |  |  |
| 4 | <b>NON RETURN VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.   |    |      |  |  |
|   | a.100mm dia   | 1  | Nos. |  |  |
|   |   |    |      |  |  |
| 5 | <b>HYDRANT VALVE</b>  |    |      |  |  |

|    |  |   |      |  |  |
|----|--|---|------|--|--|
|    | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 4 | Nos. |  |  |
|    |  |   |      |  |  |
| 6  | <b>HOSE REEL SET</b>   |   |      |  |  |
|    | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 4 | Nos. |  |  |
|    |  |   |      |  |  |
| 7  | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |  |  |
|    | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 4 | Nos. |  |  |
|    |  |   |      |  |  |
| 8  | <b>FIRE HOSE</b>   |   |      |  |  |
|    | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male & female coupling as per IS:901 bound with CU wire  | 8 | Nos. |  |  |
|    |  |   |      |  |  |
| 9  | <b>BRANCH PIPE</b>   |   |      |  |  |
|    | Supply, installation, testing and commissioning of ss branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 4 | Nos. |  |  |
|    |  |   |      |  |  |
| 10 | <b>FIRE BRIGADE INLET</b>  |   |      |  |  |

|          |  |   |      |   |   |
|----------|--|---|------|---|---|
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main. | 1 | Nos. |   |   |
| 11       | <b>PRESSURE GAUGE</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 1 | Nos  |   |   |
| 12       | <b>BALL VALVE</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |   |   |
|          | a 20mm dia   | 4 | Nos. |   |   |
| 13       | <b>AIR RELEASE VALVE</b>   |   |      |   |   |
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 1 | Nos. |   |   |
| 14       | <b>TERRACE TANK</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of GRP tank of 5000ltrs nominal capacity   | 1 | Nos. |   |   |
|          | <b>TOTAL OF FPS (A)</b>  |   |      |   |   |
| <b>B</b> | <b><u>FIRE ALARM SYSTEM</u></b>  |   |      |   |   |
|          | -  | - | -    | - | - |
| 1        | <b>MANUAL CALL POINT</b>   |   |      |   |   |
|          | Supply, installation, testing and commissioning of manual call points  | 4 | Nos. |   |   |
| 2        | <b>HOOTER</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of audio alarm hooters.  | 4 | Nos. |   |   |
| 3        | <b>FIRE ALARM PANEL</b>  |   |      |   |   |

|                         |   |    |      |   |  |
|-------------------------|---|----|------|---|--|
|                         | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |   |  |
| 4                       | <b>CABLE</b>  |    |      |   |  |
|                         | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 50 | Mtrs |   |  |
| 5                       | <b>SIGNAGES</b>   |    |      |   |  |
|                         | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6  | Nos  |   |  |
| 6                       | <b>BATTERY</b>  |    |      |   |  |
|                         | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |   |  |
| <b>TOTAL of FAS (B)</b> |   |    |      |   |  |
| <b>C</b>                | <b><u>Civil Works</u></b>   | -  | -    | - |  |
| 1                       | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 6  | each |   |  |
| 2                       | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50 | Mtrs |   |  |
| 3                       | Finishing walls with water proofing cement paint of required shade :  |    |      |   |  |
|                         | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25 | sqm  |   |  |
| 4                       | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :  |    |      |   |  |

|   |  |       |     |  |  |
|---|--|-------|-----|--|--|
|   | Cement mortar 1:4 (1 cement : 4 coarse sand)                             | 0.162 | cum |  |  |
| 5 | 15 mm cement plaster on rough side of single or half brick wall of mix : |       |     |  |  |
|   | 1:4 (1 cement: 4 coarse sand)  | 0.6   | sqm |  |  |
|   | <b>Total of Civil</b>  |       |     |  |  |
|   |  |       |     |  |  |
|   | <b>TOTAL (A+B+C)</b>   |       |     |  |  |

### 3. FIRE FIGHTING SYSTEM FOR BLACK WELL HOUSE AT JIPMER

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| 1        | <b>TERRACE PUMP</b>   |     |      |      |        |
|          | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.         | 1   | Nos. |      |        |
| 2        | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|          | a.100mm dia   | 18  | Mtrs |      |        |
|          | b.80mm dia  | 6   | Mtrs |      |        |
|          |   |     |      |      |        |
| 3        | <b>BUTTERFLY VALVE</b>  |     |      |      |        |

|   |  |   |      |  |  |
|---|--|---|------|--|--|
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.  |   |      |  |  |
|   | a.100mm dia  | 2 | Nos. |  |  |
|   | Make :intervalve/Karthar   |   |      |  |  |
|   |  |   |      |  |  |
| 4 | <b>NON RETURN VALVE</b>  |   |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |   |      |  |  |
|   | a.100mm dia  | 1 | Nos. |  |  |
|   |  |   |      |  |  |
| 5 | <b>HYDRANT VALVE</b>   |   |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 4 | Nos. |  |  |
|   |  |   |      |  |  |
| 6 | <b>HOSE REEL SET</b>   |   |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 4 | Nos. |  |  |
|   |  |   |      |  |  |
| 7 | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 4 | Nos. |  |  |
|   |  |   |      |  |  |
| 8 | <b>FIRE HOSE</b>   |   |      |  |  |

|          |  |   |      |  |   |
|----------|--|---|------|--|---|
|          | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia and tested to bursting pressure of 15kg/sqcm and with Aluminium coupling as per IS:901 binded with cu wire    | 8 | Nos. |  |   |
| 9        | <b>BRANCH PIPE</b>   |   |      |  |   |
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 4 | Nos. |  |   |
| 10       | <b>FIRE BRIGADE INLET</b>  |   |      |  |   |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main. | 1 | Nos. |  |   |
| 11       | <b>PRESSURE GAUGE</b>  |   |      |  |   |
|          | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 1 | Nos  |  |   |
| 12       | <b>BALL VALVE</b>  |   |      |  |   |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |  |   |
|          | a 20mm dia   | 4 | Nos. |  |   |
| 13       | <b>AIR RELEASE VALVE</b>   |   |      |  |   |
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 1 | Nos. |  |   |
| 14       | <b>TERRACE TANK</b>  |   |      |  |   |
|          | Supply, installation, testing and commissioning of GRP tank of 5000ltrs nominal capacity   | 1 | Nos. |  |   |
|          | <b>Total of FPS (A)</b>  |   |      |  |   |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   | - | -    |  | - |
| 1        | <b>MANUAL CALL POINT</b>   |   |      |  |   |

|                         |   |    |      |   |  |
|-------------------------|---|----|------|---|--|
|                         | Supply, installation, testing and commissioning of manual call points   | 4  | Nos. |   |  |
| 2                       | <b>HOOTER</b>   |    |      |   |  |
|                         | Supply, installation, testing and commissioning of audio alarm hooters.   | 4  | Nos. |   |  |
|                         |   |    |      |   |  |
|                         |   |    |      |   |  |
| 3                       | <b>FIRE ALARM PANEL</b>   |    |      |   |  |
|                         | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |   |  |
|                         |   |    |      |   |  |
| 4                       | <b>CABLE</b>  |    |      |   |  |
|                         | Supply ,Installation, testing and commissioning of 2*1.5sqmm copper armoured FRLS cable   | 50 | Mtrs |   |  |
|                         |   |    |      |   |  |
| 5                       | <b>SIGNAGES</b>   |    |      |   |  |
|                         | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6  | Nos  |   |  |
|                         |   |    |      |   |  |
| 6                       | <b>BATTERY</b>  |    |      |   |  |
|                         | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |   |  |
|                         |   |    |      |   |  |
| <b>TOTAL of FAS (B)</b> |   |    |      |   |  |
| <b>C</b>                | <b><u>Civil Works</u></b>   | -  | -    | - |  |
| 1                       | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 6  | each |   |  |
| 2                       | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe   | 50 | Mtrs |   |  |



|   |  |       |     |  |  |
|---|--|-------|-----|--|--|
|   | etc.   |       |     |  |  |
| 3 | Finishing walls with water proofing cement paint of required shade :   |       |     |  |  |
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete   | 25    | sqm |  |  |
| 4 | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : |       |     |  |  |
|   | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.162 | cum |  |  |
| 5 | 15 mm cement plaster on rough side of single or half brick wall of mix :   | 0.6   | sqm |  |  |
|   | 1:4 (1 cement: 4 coarse sand)  |       |     |  |  |
|   | <b>Total of Civil works</b>  |       |     |  |  |
|   |  |       |     |  |  |
|   | <b>TOTAL (A+B+C)</b>   |       |     |  |  |

| <b><u>4. FIRE FIGHTING SYSTEM FOR COMMUNITY HALL AT JIPMER</u></b> |  |            |             |             |               |
|--|--|------------|-------------|-------------|---------------|
| <b>SL NO</b>   | <b>DESCRIPTION</b>   | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>   | <b>FPS</b>   |            |             |             |               |
| <b>1</b>   | <b>TERRACE PUMP</b>  |            |             |             |               |
|  | Supply, installation, testing and commissioning of terrace pump rated for 900lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 10 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel. | 1          | Nos.        |             |               |
| <b>2</b>   | <b>PIPING</b>  |            |             |             |               |

|   |   |    |      |  |  |
|---|---|----|------|--|--|
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |    |      |  |  |
|   | a.100mm dia   | 30 | Mtrs |  |  |
|   | b.80mm dia  | 6  | Mtrs |  |  |
| 3 | <b>BUTTERFLY VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |    |      |  |  |
|   | a.100mm dia   | 2  | Nos. |  |  |
|   |   |    |      |  |  |
| 4 | <b>NON RETURN VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.   |    |      |  |  |
|   | a.100mm dia   | 1  | Nos. |  |  |
|   |   |    |      |  |  |
| 5 | <b>HYDRANT VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia WITH ISI mark oblique type with instantaneous hose coupling adaptor confirming to IS:5290   | 2  | Nos. |  |  |
|   |   |    |      |  |  |
| 6 | <b>HOSE REEL SET</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 1  | Nos. |  |  |
|   |   |    |      |  |  |
| 7 | <b>HOSE BOX DOUBLE DOOR</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside.  | 2  | Nos. |  |  |

|          |  |   |      |  |  |
|----------|--|---|------|--|--|
|          |  |   |      |  |  |
| 8        | <b>FIRE HOSE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia and tested to bursting pressure of 15kg/sqcm and with Aluminium coupling as per IS:901 binded with cu wire    | 4 | Nos. |  |  |
|          |  |   |      |  |  |
| 9        | <b>BRANCH PIPE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |  |  |
|          |  |   |      |  |  |
| 10       | <b>FIRE BRIGADE INLET</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main. | 1 | Nos. |  |  |
|          |  |   |      |  |  |
| 11       | <b>PRESSURE GAUGE</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 1 | Nos  |  |  |
|          |  |   |      |  |  |
| 12       | <b>BALL VALVE</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |  |  |
|          | a 20mm dia   | 4 | Nos. |  |  |
|          |  |   |      |  |  |
| 13       | <b>AIR RELEASE VALVE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 1 | Nos. |  |  |
|          |  |   |      |  |  |
| 14       | <b>TERRACE TANK</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of GRP tank of 5000ltrs nominal capacity   | 3 | Nos. |  |  |
|          |  |   |      |  |  |
|          | <b>TOTAL OF FPS</b>  |   |      |  |  |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   |   |      |  |  |
| 1        | <b>MANUAL CALL POINT</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of manual call points  | 1 | Nos. |  |  |

|                         |   |    |      |  |   |
|-------------------------|---|----|------|--|---|
| 2                       | <b>HOOTER</b>   |    |      |  |   |
|                         | Supply, installation, testing and commissioning of audio alarm hooters.   | 1  | Nos. |  |   |
| 3                       | <b>FIRE ALARM PANEL</b>   |    |      |  |   |
|                         | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |  |   |
| 4                       | <b>CABLE</b>  |    |      |  |   |
|                         | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 50 | Mtrs |  |   |
| 5                       | <b>SIGNAGES</b>   |    |      |  |   |
|                         | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6  | Nos  |  |   |
| 6                       | <b>BATTERY</b>  |    |      |  |   |
|                         | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |  |   |
| <b>Total of FAS (B)</b> |   |    |      |  |   |
| <b>C</b>                | <b><u>Civil Works</u></b>   | -  | -    |  | - |
| 1                       | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 6  | each |  |   |
| 2                       | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50 | Mtrs |  |   |
| 3                       | Finishing walls with water proofing cement paint of required shade :  |    |      |  |   |
|                         | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25 | sqm  |  |   |

|                       |  |     |     |  |  |
|-----------------------|--|-----|-----|--|--|
| 4                     | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : |     |     |  |  |
|                       | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.3 | cum |  |  |
| 5                     | 15 mm cement plaster on rough side of single or half brick wall of mix :   | 0.8 | sqm |  |  |
|                       | 1:4 (1 cement: 4 coarse sand)  |     |     |  |  |
| <b>Total of Civil</b> |  |     |     |  |  |
|                       |  |     |     |  |  |
| <b>TOTAL (A+B+C)</b>  |  |     |     |  |  |

### **5. FIRE FIGHTING SYSTEM FOR CURIE HOUSE AT JIPMER**

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| 1        | <b>TERRACE PUMP</b>   |     |      |      |        |
|          | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.         | 1   | Nos. |      |        |
|          |   |     |      |      |        |
| 2        | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
|          | a.100mm dia   | 60  | Mtrs |      |        |

|   |  |    |      |  |  |
|---|--|----|------|--|--|
|   | b.80mm dia   | 8  | Mtrs |  |  |
| 3 | <b>BUTTERFLY VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.  |    |      |  |  |
|   | a.100mm dia  | 4  | Nos. |  |  |
| 4 | <b>NON RETURN VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |    |      |  |  |
|   | a.100mm dia  | 1  | Nos. |  |  |
| 5 | <b>HYDRANT VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 12 | Nos. |  |  |
| 6 | <b>HOSE REEL SET</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 12 | Nos. |  |  |
| 7 | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 12 | Nos. |  |  |
| 8 | <b>FIRE HOSE</b>   |    |      |  |  |

|          |  |    |      |  |  |
|----------|--|----|------|--|--|
|          | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with male & female SS coupling as per IS:901 binded with cu wire | 24 | Nos. |  |  |
| 9        | <b>BRANCH PIPE</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 12 | Nos. |  |  |
| 10       | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main.                   | 1  | Nos. |  |  |
| 11       | <b>PRESSURE GAUGE</b>  |    |      |  |  |
|          | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 1  | Nos  |  |  |
| 12       | <b>BALL VALVE</b>  |    |      |  |  |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |    |      |  |  |
|          | a 20mm dia   | 12 | Nos. |  |  |
| 13       | <b>AIR RELEASE VALVE</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 1  | Nos. |  |  |
| 14       | <b>TERRACE TANK</b>  |    |      |  |  |
|          | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 1  | Nos. |  |  |
|          |  |    |      |  |  |
|          | <b>TOTAL OF FPS</b>  |    |      |  |  |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   |    |      |  |  |
| 1        | <b>MANUAL CALL POINT</b>   |    |      |  |  |

|                     |   |     |      |   |  |
|---------------------|---|-----|------|---|--|
|                     | Supply, installation, testing and commissioning of manual call points   | 12  | Nos. |   |  |
| 2                   | <b>HOOTER</b>   |     |      |   |  |
|                     | Supply, installation, testing and commissioning of audio alarm hooters.   | 12  | Nos. |   |  |
| 3                   | <b>FIRE ALARM PANEL</b>   |     |      |   |  |
|                     | Supply, installation, testing and commissioning of Control Panel of 6Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1   | Nos. |   |  |
| 4                   | <b>CABLE</b>  |     |      |   |  |
|                     | Supply ,Installation, testing and commissioning of 2 x 1.5 Sq.mm FRLS Cu. Armoured cable  | 180 | Mtrs |   |  |
| 5                   | <b>BATTERY</b>  |     |      |   |  |
|                     | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2   | Nos  |   |  |
| <b>Total of FAS</b> |   |     |      |   |  |
| <b>C</b>            | <b><u>Civil Works</u></b>   | -   | -    | - |  |
| 1                   | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 16  | each |   |  |
| 2                   | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50  | Mtrs |   |  |
| 3                   | Finishing walls with water proofing cement paint of required shade :  |     |      |   |  |
|                     | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25  | sqm  |   |  |



|                       |  |     |     |  |  |
|-----------------------|--|-----|-----|--|--|
| 4                     | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : |     |     |  |  |
|                       | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.3 | cum |  |  |
| 5                     | 15 mm cement plaster on rough side of single or half brick wall of mix :   | 0.8 | sqm |  |  |
|                       | 1:4 (1 cement: 4 coarse sand)  |     |     |  |  |
| <b>Total of Civil</b> |  |     |     |  |  |
|                       |  |     |     |  |  |
| <b>TOTAL (A+B+C)</b>  |  |     |     |  |  |

| <b>6. FIRE FIGHTING SYSTEM FOR HARVEY HOUSE AT JIPMER</b> |   |            |             |             |               |
|---|---|------------|-------------|-------------|---------------|
| <b>SL NO</b>  | <b>DESCRIPTION</b>  | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>  | <b>FPS</b>  |            |             |             |               |
| 1   | <b>TERRACE PUMP</b>   |            |             |             |               |
|   | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel. | 2          | Nos.        |             |               |
|   |   |            |             |             |               |
| 2   | <b>PIPING</b>   |            |             |             |               |

|   |   |    |      |  |  |
|---|---|----|------|--|--|
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |    |      |  |  |
|   | a.100mm dia   | 60 | Mtrs |  |  |
|   | b.80mm dia  | 6  | Mtrs |  |  |
|   |   |    |      |  |  |
| 3 | <b>BUTTERFLY VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |    |      |  |  |
|   | a.100mm dia   | 4  | Nos. |  |  |
|   |   |    |      |  |  |
| 4 | <b>NON RETURN VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.   |    |      |  |  |
|   | a.100mm dia   | 2  | Nos. |  |  |
|   |   |    |      |  |  |
| 5 | <b>HYDRANT VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290  | 12 | Nos. |  |  |
|   |   |    |      |  |  |
| 6 | <b>HOSE REEL SET</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 12 | Nos. |  |  |
|   |   |    |      |  |  |

|    |  |    |      |  |  |
|----|--|----|------|--|--|
| 7  | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 12 | Nos. |  |  |
| 8  | <b>FIRE HOSE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male & female coupling as per IS:901 binded with cu wire   | 24 | Nos. |  |  |
| 9  | <b>BRANCH PIPE</b>   |    |      |  |  |
|    | Supply, installation, testing and commissioning of Aluminium branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.   | 12 | Nos. |  |  |
| 10 | <b>FIRE BRIGADE INLET</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main.   | 2  | Nos. |  |  |
| 11 | <b>PRESSURE GAUGE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 2  | Nos  |  |  |
| 12 | <b>BALL VALVE</b>  |    |      |  |  |
|    | Supply, installation, testing and commissioning of Ball valve of following dia   |    |      |  |  |
|    | a 20mm dia   | 12 | Nos. |  |  |
| 13 | <b>AIR RELEASE VALVE</b>   |    |      |  |  |

|          |   |     |      |  |   |
|----------|---|-----|------|--|---|
|          | Supply, installation, testing and commissioning of Air Release valve of 20mm dia  | 2   | Nos. |  |   |
| 14       | <b>TERRACE TANK</b>   |     |      |  |   |
|          | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity  | 2   | Nos. |  |   |
|          |   |     |      |  |   |
|          | <b>TOTAL OF FPS</b>   |     |      |  |   |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>  |     |      |  |   |
| 1        | <b>MANUAL CALL POINT</b>  |     |      |  |   |
|          | Supply, installation, testing and commissioning of manual call points   | 12  | Nos. |  |   |
|          |   |     |      |  |   |
| 2        | <b>HOOTER</b>   |     |      |  |   |
|          | Supply, installation, testing and commissioning of audio alarm hooters.   | 12  | Nos. |  |   |
|          |   |     |      |  |   |
| 3        | <b>FIRE ALARM PANEL</b>   |     |      |  |   |
|          | Supply, installation, testing and commissioning of Control Panel of 6 Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system . | 1   | Nos. |  |   |
|          |   |     |      |  |   |
| 4        | <b>CABLE</b>  |     |      |  |   |
|          | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 150 | Mtrs |  |   |
|          |   |     |      |  |   |
| 5        | <b>BATTERY</b>  |     |      |  |   |
|          | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2   | Nos  |  |   |
|          |   |     |      |  |   |
|          | <b>Total of FAS</b>   |     |      |  |   |
|          | <b><u>Civil Works</u></b>   | -   | -    |  | - |

|   |   |     |      |  |  |
|---|---|-----|------|--|--|
| 1 | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 12  | each |  |  |
| 2 | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 150 | Mtrs |  |  |
| 3 | Finishing walls with water proofing cement paint of required shade :  |     |      |  |  |
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 75  | sqm  |  |  |
| 4 | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :  |     |      |  |  |
|   | Cement mortar 1:4 (1 cement : 4 coarse sand)  | 0.4 | cum  |  |  |
| 5 | 15 mm cement plaster on rough side of single or half brick wall of mix :  |     |      |  |  |
|   | 1:4 (1 cement: 4 coarse sand)   | 1   | sqm  |  |  |
|   | <b>Total of Civil</b>   |     |      |  |  |
|   |   |     |      |  |  |
|   | <b>TOTAL (A+B+C)</b>  |     |      |  |  |

| <b>7. REVAMPING OF FIRE FIGHTING SYSTEM AT KENDRIYA VIDYALAYA AT JIPMER</b> |  |            |             |             |               |
|---|--|------------|-------------|-------------|---------------|
| <b>SL NO</b>  | <b>DESCRIPTION</b>   | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>  | <b>GENERAL SERVICING &amp; MAINTENANCE OF KENDRIYA VIDYALAYA</b> |            |             |             |               |

|   |   |           |      |  |  |
|---|---|-----------|------|--|--|
| 1 | General servicing and maintenance of 100Butterfly Valve inclduing Gasket changing   | 2         | Nos  |  |  |
| 2 | General servicing and maintenance of Hydrant Valve includng replacement of washer, panitnign (if required) etc  | 5         | Job  |  |  |
| 3 | General servicing and maintenance of Hose Box includng replacement of broken glass, beeding, painting etc   | 5         | Job  |  |  |
| 4 | General servicing and maintenance of Fire Brigade Inlet 3 way   | 1         | Nos  |  |  |
|   |   | SUB TOTAL |      |  |  |
| B | NEW ITEMS REQUIRED  |           |      |  |  |
| 1 | HOSE REEL SET   |           |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 5         | Nos. |  |  |
|   |   |           |      |  |  |
| 2 | FIRE HOSE   |           |      |  |  |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm diawith ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male & female coupling as per IS:901 binded with cu wire   | 5         | Nos. |  |  |
|   |   |           |      |  |  |
|   | Sub Total   |           |      |  |  |
| C | Civil Works   |           |      |  |  |
| 1 | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 10        | each |  |  |

|  |                    |  |  |  |  |
|--|--------------------|--|--|--|--|
|  | <b>SUB TOTAL</b>   |  |  |  |  |
|  |                    |  |  |  |  |
|  | <b>GRAND TOTAL</b> |  |  |  |  |

| <b>8. FIRE FIGHTING SYSTEM FOR KITCHEN BLOCK AT JIPMER</b> |   |            |             |             |               |
|--|---|------------|-------------|-------------|---------------|
| <b>SL NO</b>   | <b>DESCRIPTION</b>  | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>   | <b>FPS</b>  |            |             |             |               |
| <b>1</b>   | <b>PIPING</b>   |            |             |             |               |
|  | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |            |             |             |               |
| a  | 100mm dia   | 50         | Mtrs        |             |               |
| b  | 80mm dia  | 6          | Mtrs        |             |               |
|  |   |            |             |             |               |
| <b>2</b>   | <b>BUTTERFLY VALVE</b>  |            |             |             |               |
|  | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |            |             |             |               |
|  | 100mm dia   | 2          | Nos.        |             |               |
|  |   |            |             |             |               |
| <b>3</b>   | <b>HYDRANT VALVE</b>  |            |             |             |               |
|  | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290  | 2          | Nos.        |             |               |
|  |   |            |             |             |               |
| <b>4</b>   | <b>HOSE REEL SET</b>  |            |             |             |               |
|  | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 2          | Nos.        |             |               |

|          |  |   |      |   |   |
|----------|--|---|------|---|---|
|          |  |   |      |   |   |
| 5        | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |   |   |
|          |  |   |      |   |   |
| 6        | <b>FIRE HOSE</b>   |   |      |   |   |
|          | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 4 | Nos. |   |   |
|          |  |   |      |   |   |
| 7        | <b>BRANCH PIPE</b>   |   |      |   |   |
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |   |   |
|          |  |   |      |   |   |
| 8        | <b>FIRE BRIGADE INLET</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to wet riser main.   | 1 | Nos. |   |   |
|          |  |   |      |   |   |
| 9        | <b>BALL VALVE</b>  |   |      |   |   |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |   |   |
|          | a 20mm dia   | 2 | Nos. |   |   |
|          |  |   |      |   |   |
|          | <b>Total of FPS</b>  |   |      |   |   |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   | - | -    | - |   |
|          |  | - | -    | - | - |
| 1        | <b>MANUAL CALL POINT</b>   |   |      |   |   |
|          | Supply, installation, testing and commissioning of manual call points  | 3 | Nos. |   |   |
|          |  |   |      |   |   |



|                     |   |     |      |   |  |
|---------------------|---|-----|------|---|--|
| 2                   | <b>HOOTER</b>   |     |      |   |  |
|                     | Supply, installation, testing and commissioning of audio alarm hooters.   | 3   | Nos. |   |  |
| 3                   | <b>FIRE ALARM PANEL</b>   |     |      |   |  |
|                     | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1   | Nos. |   |  |
| 4                   | <b>CABLE</b>  |     |      |   |  |
|                     | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 120 | Mtrs |   |  |
| 5                   | <b>SIGNAGES</b>   |     |      |   |  |
|                     | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6   | Nos  |   |  |
| 6                   | <b>BATTERY</b>  |     |      |   |  |
|                     | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2   | Nos  |   |  |
| <b>Total of FAS</b> |   |     |      |   |  |
| <b>C</b>            | <b><u>Civil Works</u></b>   | -   | -    | - |  |
| 1                   | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 5   | each |   |  |
| 2                   | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50  | Mtrs |   |  |
| 3                   | Finishing walls with water proofing cement paint of required shade :  |     |      |   |  |
|                     | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25  | sqm  |   |  |

|  |                       |  |  |  |  |
|--|-----------------------|--|--|--|--|
|  | <b>Total of Civil</b> |  |  |  |  |
|  |                       |  |  |  |  |
|  | <b>TOTAL (A+B+C)</b>  |  |  |  |  |

| <b>9. FIRE FIGHTING SYSTEM FOR LISTER HOUSE AT JIPMER (2 BUILDINGS)</b> |   |            |             |             |               |
|---|---|------------|-------------|-------------|---------------|
| <b>SL NO</b>  | <b>DESCRIPTION</b>  | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>  | <b>FPS</b>  |            |             |             |               |
| <b>1</b>  | <b>TERRACE PUMP</b>   |            |             |             |               |
|   | Supply, installation, testing and commissioning of terrace pump rated for 450lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 5 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.         | 2          | Nos.        |             |               |
|   |   |            |             |             |               |
| <b>2</b>  | <b>PIPING</b>   |            |             |             |               |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |            |             |             |               |
|   | a.100mm dia   | 60         | Mtrs        |             |               |
|   | b.80mm dia  | 8          | Mtrs        |             |               |
|   |   |            |             |             |               |
| <b>3</b>  | <b>BUTTERFLY VALVE</b>  |            |             |             |               |

|   |  |    |      |  |  |
|---|--|----|------|--|--|
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.  |    |      |  |  |
|   | a.100mm dia  | 4  | Nos. |  |  |
|   |  |    |      |  |  |
| 4 | <b>NON RETURN VALVE</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of slim seal type cast iron non return valves with flanges ,nuts, bolts and rubber gaskets for seating the valves complete.  |    |      |  |  |
|   | a.100mm dia  | 2  | Nos. |  |  |
|   |  |    |      |  |  |
| 5 | <b>HYDRANT VALVE</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of single headed valve of SS of 63 mm dia oblique type with ISI mark instantaneous hose coupling adaptor confirming to IS:5290   | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 6 | <b>HOSE REEL SET</b>   |    |      |  |  |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum,19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 7 | <b>HOSE BOX DOUBLE DOOR</b>  |    |      |  |  |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 12 | Nos. |  |  |
|   |  |    |      |  |  |
| 8 | <b>FIRE HOSE</b>   |    |      |  |  |

|                     |  |    |      |   |   |
|---------------------|--|----|------|---|---|
|                     | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire | 24 | Nos. |   |   |
| 9                   | <b>BRANCH PIPE</b>   |    |      |   |   |
|                     | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 12 | Nos. |   |   |
| 10                  | <b>FIRE BRIGADE INLET</b>  |    |      |   |   |
|                     | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement to be connected to riser main.                         | 2  | Nos. |   |   |
| 11                  | <b>PRESSURE GAUGE</b>  |    |      |   |   |
|                     | Supply, installation, testing and commissioning of pressure gauge with 0 to 12kg range 4" dia.   | 2  | Nos  |   |   |
| 12                  | <b>BALL VALVE</b>  |    |      |   |   |
|                     | Supply, installation, testing and commissioning of Ball valve of following dia   |    |      |   |   |
|                     | a 20mm dia   | 12 | Nos. |   |   |
| 13                  | <b>AIR RELEASE VALVE</b>   |    |      |   |   |
|                     | Supply, installation, testing and commissioning of Air Release valve of 20mm dia   | 2  | Nos. |   |   |
| 14                  | <b>TERRACE TANK</b>  |    |      |   |   |
|                     | Supply, installation, testing and commissioning of GRP tank of 5000 ltr nominal capacity   | 2  | Nos. |   |   |
| <b>TOTAL OF FPS</b> |  |    |      |   |   |
| <b>B</b>            | <b><u>FIRE ALARM SYSTEM</u></b>  |    |      |   |   |
|                     | -  | -  | -    | - | - |

|                     |   |     |      |  |   |
|---------------------|---|-----|------|--|---|
| 1                   | <b>MANUAL CALL POINT</b>  |     |      |  |   |
|                     | Supply, installation, testing and commissioning of manual call points   | 12  | Nos. |  |   |
| 2                   | <b>HOOTER</b>   |     |      |  |   |
|                     | Supply, installation, testing and commissioning of audio alarm hooters.   | 12  | Nos. |  |   |
| 3                   | <b>FIRE ALARM PANEL</b>   |     |      |  |   |
|                     | Supply, installation, testing and commissioning of Control Panel of 6Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1   | Nos. |  |   |
| 4                   | <b>CABLE</b>  |     |      |  |   |
|                     | Supply ,Installation, testing and commissioning of 2*1.5sqmm copper armoured FRLS cable   | 100 | Mtrs |  |   |
| 5                   | <b>SIGNAGES</b>   |     |      |  |   |
|                     | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6   | Nos  |  |   |
| 6                   | <b>BATTERY</b>  |     |      |  |   |
|                     | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2   | Nos  |  |   |
| <b>TOTAL OF FAS</b> |   |     |      |  |   |
|                     | <b><u>Civil Works</u></b>   | -   | -    |  | - |
| 1                   | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 12  | each |  |   |
| 2                   | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 100 | Mtrs |  |   |

|                       |  |     |     |  |  |
|-----------------------|--|-----|-----|--|--|
| 3                     | Finishing walls with water proofing cement paint of required shade :   |     |     |  |  |
|                       | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete   | 50  | sqm |  |  |
| 4                     | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : |     |     |  |  |
|                       | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.4 | cum |  |  |
| 5                     | 15 mm cement plaster on rough side of single or half brick wall of mix :   | 1   | sqm |  |  |
|                       | 1:4 (1 cement: 4 coarse sand)  |     |     |  |  |
| <b>Total of Civil</b> |  |     |     |  |  |
|                       |  |     |     |  |  |
| <b>TOTAL (A+B+C)</b>  |  |     |     |  |  |

| <b>10. FIRE FIGHTING SYSTEM AT PHARMACY BLOCK AT JIPMER</b> |   |     |     |  |  |
|---|---|-----|-----|--|--|
| <b>A</b>  | <b>GENERAL SERVICING &amp; MAINTENANCE OF PHARMACY BLOCK</b>  |     |     |  |  |
| 1   | General servicing and maintenance of Manual Call Point including changing of broken glass, switch etc   | 8   | Nos |  |  |
| 2   | General servicing and maintenance of Hooter including changing of card, speaker etc   | 9   | Nos |  |  |
| 3   | General servicing and maintenance of Smoke/Heat detector including cleaning, removing dust with blower  | 200 | Nos |  |  |
| 4   | General servicing and maintenance of 8 zone conventional Fire Alarm Panel including changing of damaged power supply card, zone card, resistance etc. | 1   | Nos |  |  |

|       |   |           |      |      |        |
|-------|---|-----------|------|------|--------|
| 5     | General servicing and maintenance of 12 zone conventional Fire Alarm Panel including changing of damaged power supply card, zone card, resistance etc.  | 12        | Nos  |      |        |
| 6     | Test running and conducting demonstration   | 1         | Job  |      |        |
|       |   | SUB TOTAL |      |      |        |
| -     |   |           |      |      |        |
| B     | REPLACING ITEMS FOR PHARMACY BUILDING   |           |      |      |        |
|       |   |           |      |      |        |
| SI No | Description Of Work   | Qty       | Unit | Rate | Amount |
| 1     | Supply, installation, testing and commissioning of terrace pump rated for 900lpm at 25 M head high efficiency volute type with cast iron casing coupled to a squirrel cage induction motor, totally enclosed fan cooled with supply condition 415 V, 3 phase, 50 HZ, foot mounted type rated for suitable 10 HP at 2900 rpm with suitable starter (DOL/ Star Delta) and control panel.        | 1         | Nos  |      |        |
| 2     | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |           |      |      |        |
|       | a.100mm dia   | 60        | Mtrs |      |        |
|       | b.80mm dia  | 8         | Mtrs |      |        |
| 3     | Supply & erection of Air Release Valve  | 2         | Nos  |      |        |
| 4     | Supply & erection of 20mm Ball Valve  | 8         | Nos  |      |        |
| 5     | Supply & erection of CI butterfly Valve 100mm dia   | 3         | Nos  |      |        |
| 6     | Supply & erection of CI Non Return Valve 100mm dia  | 1         | Nos  |      |        |

|    |   |           |      |  |  |
|----|---|-----------|------|--|--|
| 7  | Supply & erection of single headed SS hdyrant valve   | 8         | Nos  |  |  |
| 8  | Supply & erection of double door hose box   | 8         | Nos  |  |  |
| 9  | Supply & erection of 63mm dia CP Hose 15mtr length with male & female SS coupling   | 16        | Nos  |  |  |
| 10 | Supply & erection of Hose Reel with 20mm dia Termoplast Hose of 30 mtr length with PVC shut of Nozzle   | 8         | Nos  |  |  |
| 11 | Supply & erection of Bracnh Pipe SS with ISI mark   | 8         | Nos  |  |  |
| 12 | Supply & erection of Manual call Point break glass type   | 5         | Nos  |  |  |
| 13 | Supply & erection of Electronic Hooter  | 5         | Nos  |  |  |
| 14 | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 8         | Nos  |  |  |
| 15 | Supply & erection of 2 x 1.5 Sq.mm FRLS armoured cable  | 75        | Mtr  |  |  |
| 16 | Supply & erection of GRP tank of 5000 ltr nominal capacity  | 2         | Nos  |  |  |
| 17 | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 4         | Nos  |  |  |
|    |   | SUB TOTAL |      |  |  |
| C  | Civil Works   |           |      |  |  |
| 1  | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 12        | each |  |  |
| 2  | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 75        | Mtrs |  |  |
| 3  | Finishing walls with water proofing cement paint of required shade :  |           |      |  |  |



|   |  |     |     |  |  |
|---|--|-----|-----|--|--|
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete   | 38  | sqm |  |  |
| 4 | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : |     |     |  |  |
|   | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.2 | cum |  |  |
| 5 | 15 mm cement plaster on rough side of single or half brick wall of mix :   | 1   | sqm |  |  |
|   | 1:4 (1 cement: 4 coarse sand)  |     |     |  |  |
|   | <b>Total of Civil</b>  |     |     |  |  |
|   |  |     |     |  |  |
|   | <b>GRAND TOTAL (A + B+C)</b>   |     |     |  |  |

| <b>11. PUMP ROOM</b> |   |   |     |  |  |
|----------------------|---|---|-----|--|--|
| <b>A</b>             | <b>GENERAL SERVICING &amp; MAINTENANCE OF PUMPROOMS</b>   |   |     |  |  |
| 1                    | General servicing and repairing of Main Electrical Motor Driven Pump including meggaring, warnishing (heating) etc and replacement of gland packing, allingment cencking etc.                                 | 2 | Job |  |  |
| 2                    | General servicing and repairing of Jockey Pump iincluding meggaring, painting, warnishing (heating) etc and allingment cencking etc.  | 2 | Job |  |  |
| 3                    | Servicing and painting of Motor Control Panel inclduing changing of control wiring, switches, meggaring and including incorporate the system control for sequential operation of pumps and operation of pumps | 2 | Job |  |  |
| 4                    | General servicing and maintenance of Sluice Valve upto 100mm including gasket changing  | 4 | Nos |  |  |

|       |   |     |      |  |  |
|-------|---|-----|------|--|--|
| 5     | General servicing and maintenance of Non Return Valve upto 100mm including gasket changing  | 4   | Nos  |  |  |
|       |   |     |      |  |  |
| B     |   |     |      |  |  |
|       |   |     |      |  |  |
| SI No | Description Of Work   | Qty | Unit |  |  |
| 1     | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |  |  |
|       | a.150mm dia   | 10  | Mtrs |  |  |
|       | b.100 mm dia  | 10  | Mtrs |  |  |
|       | c. 80 mm dia  | 6   | Mtrs |  |  |
|       | d. 25 mm dia  | 6   | Mtrs |  |  |
| 2     | Supply of & erection Pressure Switch  | 6   | Nos  |  |  |
| 3     | Supply & erection of Pressure Gauge   | 2   | Nos  |  |  |
| 4     | Supply & erection of Air Release Valve  | 2   | Nos  |  |  |
| 5     | Supply & erection of 25mm Ball Valve  | 2   | Nos  |  |  |
| 6     | Supply & erection of CI Sluice Valve 100mm dia  | 1   | Nos  |  |  |
| 7     | Supply & erection of CI Sluice Valve 150mm dia  | 1   | Nos  |  |  |
| 8     | Supply & erection of CI Non Return Valve 100mm dia  | 2   | Nos  |  |  |
| 9     | Supply & erection of CI Foot Valve 100mm dia  | 2   | Nos  |  |  |
| 10    | Supply & erection of CI Foot Valve 80mm dia   | 2   | Nos  |  |  |

|          |  |                  |     |  |  |
|----------|--|------------------|-----|--|--|
| 11       | Supplying, Installation, Testing and Commissioning of Engine driven pump suitable for automatic operation and consisting of horizontal type, end suction pump of cast iron body & cast iron impeller with cast iron shaft, gland packed type with specified flow of 2280 lpm at 90 mtr head coupled to 90HP, suitable RPM, water cooled diesel engine conforming to relevant BS and IS standards with auto start mechanism. M.S. fabricated Common base plate, coupling guard, foundation bolts etc. as required on Suitable cement concrete foundation duly plastered with antivibration pads etc | 2                | Nos |  |  |
| 12       | Supply and erection of Diesel Tank made out of MS having capacity of 100 LTr indluing supply of 50 Ltr Diesel for testing  | 2                | Nos |  |  |
|          |  | <b>SUB TOTAL</b> |     |  |  |
| <b>C</b> | <b>Civil Works</b>   |                  |     |  |  |
| 1        | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :   |                  |     |  |  |
|          | Cement mortar 1:4 (1 cement : 4 coarse sand)   | 0.8              | cum |  |  |
| 2        | 15 mm cement plaster on rough side of single or half brick wall of mix :   |                  |     |  |  |
|          | 1:4 (1 cement: 4 coarse sand)  | 2                | sqm |  |  |
|          | <b>Total of Civil works</b>  |                  |     |  |  |
|          |  |                  |     |  |  |
|          | <b>GRAND TOTAL(A+B+C)</b>  |                  |     |  |  |

## 12. FIRE FIGHTING SYSTEM FOR STORE AT JIPMER

| SL NO    | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
|----------|---|-----|------|------|--------|
| <b>A</b> | <b>FPS</b>  |     |      |      |        |
| <b>1</b> | <b>PIPING</b>   |     |      |      |        |
|          | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
| a        | 100mm dia   | 50  | Mtrs |      |        |
| b        | 80mm dia  | 6   | Mtrs |      |        |
|          |   |     |      |      |        |
| <b>2</b> | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|          | 100mm dia   | 2   | Nos. |      |        |
|          |   |     |      |      |        |
| <b>3</b> | <b>HYDRANT VALVE</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290  | 2   | Nos. |      |        |
|          |   |     |      |      |        |
| <b>4</b> | <b>HOSE REEL SET</b>  |     |      |      |        |
|          | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 2   | Nos. |      |        |
|          |   |     |      |      |        |
| <b>5</b> | <b>HOSE BOX DOUBLE DOOR</b>   |     |      |      |        |

|                     |  |   |      |  |  |
|---------------------|--|---|------|--|--|
|                     | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |  |  |
| 6                   | <b>FIRE HOSE</b>   |   |      |  |  |
|                     | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 4 | Nos. |  |  |
| 7                   | <b>BRANCH PIPE</b>   |   |      |  |  |
|                     | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |  |  |
| 8                   | <b>FIRE BRIGADE INLET</b>  |   |      |  |  |
|                     | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement.   | 1 | Nos. |  |  |
| 9                   | <b>BALL VALVE</b>  |   |      |  |  |
|                     | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |  |  |
|                     | a 20mm dia   | 2 | Nos. |  |  |
| <b>Total of FPS</b> |  |   |      |  |  |
| <b>B</b>            | <b>FIRE ALARM SYSTEM</b>   |   |      |  |  |
| 1                   | <b>MANUAL CALL POINT</b>   |   |      |  |  |
|                     | Supply, installation, testing and commissioning of manual call points  | 6 | Nos. |  |  |
| 2                   | <b>HOOTER</b>  |   |      |  |  |
|                     | Supply, installation, testing and commissioning of audio alarm hooters.  | 6 | Nos. |  |  |

|          |   |    |      |  |   |
|----------|---|----|------|--|---|
| 3        | <b>FIRE ALARM PANEL</b>   |    |      |  |   |
|          | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |  |   |
| 4        | <b>CABLE</b>  |    |      |  |   |
|          | Supply ,Installation, testing and commissioning of 2*1.5sqmm copper armoured FRLS cable   | 50 | Mtrs |  |   |
| 5        | <b>SIGNAGES</b>   |    |      |  |   |
|          | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 6  | Nos  |  |   |
| 6        | <b>BATTERY</b>  |    |      |  |   |
|          | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |  |   |
|          |   |    |      |  |   |
|          | <b>TOTAL</b>  |    |      |  |   |
| <b>C</b> | <b><u>Civil Works</u></b>   | -  | -    |  | - |
| 1        | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 5  | each |  |   |
| 2        | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50 | Mtrs |  |   |
| 3        | Finishing walls with water proofing cement paint of required shade :  |    |      |  |   |
|          | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 30 | sqm  |  |   |
|          | <b>TOTAL</b>  |    |      |  |   |
|          |   |    |      |  |   |
|          | <b>GRAND TOTAL</b>  |    |      |  |   |

| 13. Extension work for yard piping |   |     |      |      |        |
|------------------------------------|---|-----|------|------|--------|
| SI No                              | Description Of Work   | Qty | Unit | Rate | Amount |
| 1                                  | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
| a                                  | 150 mm  | 804 | Mtr  |      |        |
| b                                  | 80 mm   | 108 | Mtr  |      |        |
| 2                                  | Making excavation in trenches in soil with 1mtr depth for laying underground pipe and refilling the soil  | 150 | Cu.M |      |        |
| 3                                  | Making excavation in road cutting and concreting with 1mtr depth for laying underground pipe  | 50  | Cu.M |      |        |
| 4                                  | Making support with angle for existing pipe   | 350 | Kg   |      |        |
| 5                                  | Supply & erection of CI Sluice Valve 150mm dia  | 8   | Nos  |      |        |
| 6                                  | Supplying and applying thick readymade wrapping & coating 4mm thick material over one coat of coal tar primer for underground pipes   | 205 | Sq.m |      |        |
| 7                                  | Supply & erection of CI Sluice Valve 80mm dia   | 40  | Nos  |      |        |
| 8                                  | Supply & erection of single headed SS hydrant valve   | 40  | Nos  |      |        |
| 9                                  | Supply & erection of Double door hose box   | 40  | Nos  |      |        |
| 10                                 | Supply & erection of 63mm dia CP Hose 15mtr length with male & female SS coupling   | 80  | Nos  |      |        |

|    |   |    |     |  |  |
|----|---|----|-----|--|--|
| 11 | Supply & erection of Branch Pipe SS with ISI mark | 40 | Nos |  |  |
|    | <b>SUB TOTAL</b>                                  |    |     |  |  |

| <b>14. FIRE FIGHTING SYSTEM FOR LAUNDRY BLOCK AT JIPMER</b> |   |     |      |      |        |
|---|---|-----|------|------|--------|
| SL NO   | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
| <b>A</b>  | <b>FPS</b>  |     |      |      |        |
| <b>1</b>  | <b>PIPING</b>   |     |      |      |        |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
| a   | 100mm dia   | 50  | Mtrs |      |        |
| b   | 80mm dia  | 6   | Mtrs |      |        |
|   |   |     |      |      |        |
| <b>2</b>  | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|   | 100mm dia   | 2   | Nos. |      |        |
|   |   |     |      |      |        |
| <b>3</b>  | <b>HYDRANT VALVE</b>  |     |      |      |        |
|   | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290  | 2   | Nos. |      |        |
|   |   |     |      |      |        |
| <b>4</b>  | <b>HOSE REEL SET</b>  |     |      |      |        |
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.  | 2   | Nos. |      |        |
|   |   |     |      |      |        |



|                     |  |   |      |   |   |
|---------------------|--|---|------|---|---|
| 5                   | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |   |   |
|                     | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |   |   |
| 6                   | <b>FIRE HOSE</b>   |   |      |   |   |
|                     | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 4 | Nos. |   |   |
| 7                   | <b>BRANCH PIPE</b>   |   |      |   |   |
|                     | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |   |   |
| 8                   | <b>FIRE BRIGADE INLET</b>  |   |      |   |   |
|                     | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement  | 1 | Nos. |   |   |
| 9                   | <b>BALL VALVE</b>  |   |      |   |   |
|                     | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |   |   |
|                     | a 20mm dia   | 2 | Nos. |   |   |
| <b>Total of FPS</b> |  |   |      |   |   |
| <b>B</b>            | <b>FIRE ALARM SYSTEM</b>   | - | -    | - |   |
|                     |  | - | -    | - | - |
| 1                   | <b>MANUAL CALL POINT</b>   |   |      |   |   |
|                     | Supply, installation, testing and commissioning of manual call points  | 2 | Nos. |   |   |
| 2                   | <b>HOOTER</b>  |   |      |   |   |

|                     |   |    |      |   |  |
|---------------------|---|----|------|---|--|
|                     | Supply, installation, testing and commissioning of audio alarm hooters.   | 2  | Nos. |   |  |
| 3                   | <b>FIRE ALARM PANEL</b>   |    |      |   |  |
|                     | Supply, installation, testing and commissioning of Control Panel of 4Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .  | 1  | Nos. |   |  |
| 4                   | <b>CABLE</b>  |    |      |   |  |
|                     | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 50 | Mtrs |   |  |
| 5                   | <b>SIGNAGES</b>   |    |      |   |  |
|                     | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 2  | Nos  |   |  |
| 6                   | <b>BATTERY</b>  |    |      |   |  |
|                     | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |   |  |
| <b>Total of FAS</b> |   |    |      |   |  |
| <b>C</b>            | <b><u>Civil Works</u></b>   | -  | -    | - |  |
| 1                   | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 5  | each |   |  |
| 2                   | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 50 | Mtrs |   |  |
| 3                   | Finishing walls with water proofing cement paint of required shade :  |    |      |   |  |
|                     | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete  | 25 | sqm  |   |  |

|  |                       |  |  |  |  |
|--|-----------------------|--|--|--|--|
|  | <b>Total of Civil</b> |  |  |  |  |
|  |                       |  |  |  |  |
|  | <b>TOTAL (A+B+C)</b>  |  |  |  |  |

| <b><u>15. FIRE FIGHTING SYSTEM FOR WORKSHOP AT JIPMER</u></b> |   |            |             |             |               |
|---|---|------------|-------------|-------------|---------------|
| <b>SL NO</b>  | <b>DESCRIPTION</b>  | <b>QTY</b> | <b>UNIT</b> | <b>RATE</b> | <b>AMOUNT</b> |
| <b>A</b>  | <b>FPS</b>  |            |             |             |               |
| <b>1</b>  | <b>PIPING</b>   |            |             |             |               |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |            |             |             |               |
| a   | 100mm dia   | 60         | Mtrs        |             |               |
| b   | 80mm dia  | 6          | Mtrs        |             |               |
|   |   |            |             |             |               |
| <b>2</b>  | <b>BUTTERFLY VALVE</b>  |            |             |             |               |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |            |             |             |               |
|   | 100mm dia   | 2          | Nos.        |             |               |
|   |   |            |             |             |               |
| <b>3</b>  | <b>HYDRANT VALVE</b>  |            |             |             |               |
|   | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290  | 2          | Nos.        |             |               |
|   |   |            |             |             |               |
| <b>4</b>  | <b>HOSE REEL SET</b>  |            |             |             |               |

|   |  |   |      |   |   |
|---|--|---|------|---|---|
|   | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 2 | Nos. |   |   |
|   |  |   |      |   |   |
| 5 | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |   |   |
|   | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |   |   |
|   |  |   |      |   |   |
| 6 | <b>FIRE HOSE</b>   |   |      |   |   |
|   | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 4 | Nos. |   |   |
|   |  |   |      |   |   |
| 7 | <b>BRANCH PIPE</b>   |   |      |   |   |
|   | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |   |   |
|   |  |   |      |   |   |
| 8 | <b>FIRE BRIGADE INLET</b>  |   |      |   |   |
|   | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement  | 1 | Nos. |   |   |
|   |  |   |      |   |   |
| 9 | <b>BALL VALVE</b>  |   |      |   |   |
|   | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |   |   |
|   | a 20mm dia   | 2 | Nos. |   |   |
|   |  |   |      |   |   |
|   | <b>Total of FPS</b>  |   |      |   |   |
| B | <b>FIRE ALARM SYSTEM</b>   | - | -    | - |   |
|   |  | - | -    | - | - |
| 1 | <b>MANUAL CALL POINT</b>   |   |      |   |   |

|          |   |    |      |  |  |
|----------|---|----|------|--|--|
|          | Supply, installation, testing and commissioning of manual call points   | 2  | Nos. |  |  |
| 2        | <b>HOOTER</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of audio alarm hooters.   | 2  | Nos. |  |  |
| 3        | <b>FIRE ALARM PANEL</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of Control Panel of 4 Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .   | 1  | Nos. |  |  |
| 4        | <b>CABLE</b>  |    |      |  |  |
|          | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 60 | Mtrs |  |  |
| 5        | <b>SIGNAGES</b>   |    |      |  |  |
|          | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 2  | Nos  |  |  |
| 6        | <b>BATTERY</b>  |    |      |  |  |
|          | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |  |  |
|          |   |    |      |  |  |
| <b>C</b> | <b><u>Civil Works</u></b>   | -  | -    |  |  |
| 1        | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 8  | each |  |  |
| 2        | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.  | 60 | Mtrs |  |  |

|   |  |    |     |  |  |
|---|--|----|-----|--|--|
| 3 | Finishing walls with water proofing cement paint of required shade : |    |     |  |  |
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete       | 30 | sqm |  |  |
|   | <b>Total of Civil</b>  |    |     |  |  |
|   |  |    |     |  |  |
|   | <b>TOTAL (A+B+C)</b>   |    |     |  |  |

| <b><u>16. FIRE FIGHTING SYSTEM FOR ANIMAL HOUSE AT JIPMER</u></b> |   |     |      |      |        |
|---|---|-----|------|------|--------|
| SL NO   | DESCRIPTION   | QTY | UNIT | RATE | AMOUNT |
| <b>A</b>  | <b>FPS</b>  |     |      |      |        |
| 1   | <b>PIPING</b>   |     |      |      |        |
|   | Supply, Installation, Testing and Commissioning of MS pipes of the following sizes "c" class confirming to IS : 1239 with malleable specials confirming to IS:1239 part - II, such as elbows, reducers, flanges etc. Including cutting, Welding, fixing in / on walls, ceiling by using suitable supports etc and painting with two or more coats of synthetic enamel paint of required shade |     |      |      |        |
| a   | 100mm dia   | 50  | Mtrs |      |        |
| b   | 80mm dia  | 6   | Mtrs |      |        |
|   |   |     |      |      |        |
| 2   | <b>BUTTERFLY VALVE</b>  |     |      |      |        |
|   | Supply, installation, testing and commissioning of slim seal type cast iron butterfly valves lever operated type with necessary flanges, nuts, rubber insertion gaskets, nuts and bolts complete.   |     |      |      |        |
|   | 100mm dia   | 2   | Nos. |      |        |
|   |   |     |      |      |        |
| 3   | <b>HYDRANT VALVE</b>  |     |      |      |        |
|   | Supply, installation, testing and commissioning of single headed valve of gun metal of 63 mm dia oblique type with instantaneous hose coupling adaptor confirming to IS:5290  | 2   | Nos. |      |        |

|          |  |   |      |  |  |
|----------|--|---|------|--|--|
|          |  |   |      |  |  |
| 4        | <b>HOSE REEL SET</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of hydraulic hose reel complete with swing type drum, 19mm rigid hose having a length of 25 Mtrs. with stop cock and PVC nozzle on one end and all other necessary fixing materials.   | 2 | Nos. |  |  |
|          |  |   |      |  |  |
| 5        | <b>HOSE BOX DOUBLE DOOR</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of hose cabinet of internal type to accommodate two piece of hose pipes along with 2 pair of male and female coupling and one branch pipe. The cabinet is made of MS / Fiberglass sheet, glass fronted with hinged door and lock. The cabinet is spray painted to scarlet red color outside. | 2 | Nos. |  |  |
|          |  |   |      |  |  |
| 6        | <b>FIRE HOSE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of controlled percolated hose in 15M length of 63 mm dia with ISI mark and tested to bursting pressure of 15kg/sqcm and with SS male and female coupling as per IS:901 binded with cu wire   | 4 | Nos. |  |  |
|          |  |   |      |  |  |
| 7        | <b>BRANCH PIPE</b>   |   |      |  |  |
|          | Supply, installation, testing and commissioning of SS branch pipe with 63 mm male hexagonal base nozzle confirming to IS:903.  | 2 | Nos. |  |  |
|          |  |   |      |  |  |
| 8        | <b>FIRE BRIGADE INLET</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of 3way Fire Brigade Inlet connection of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arrangement  | 1 | Nos. |  |  |
|          |  |   |      |  |  |
| 9        | <b>BALL VALVE</b>  |   |      |  |  |
|          | Supply, installation, testing and commissioning of Ball valve of following dia   |   |      |  |  |
|          | a 20mm dia   | 2 | Nos. |  |  |
|          |  |   |      |  |  |
|          |  |   |      |  |  |
| <b>B</b> | <b>FIRE ALARM SYSTEM</b>   | - | -    |  |  |

|          |   |    |      |  |  |
|----------|---|----|------|--|--|
|          |   | -  | -    |  |  |
| 1        | <b>MANUAL CALL POINT</b>  |    |      |  |  |
|          | Supply, installation, testing and commissioning of manual call points   | 2  | Nos. |  |  |
|          |   |    |      |  |  |
| 2        | <b>HOOTER</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of audio alarm hooters.   | 2  | Nos. |  |  |
|          |   |    |      |  |  |
| 3        | <b>FIRE ALARM PANEL</b>   |    |      |  |  |
|          | Supply, installation, testing and commissioning of Control Panel of 4 Zone complete with charger, rectifier, alarm display with all other necessary attachments with provision for Public Addressing system .   | 1  | Nos. |  |  |
|          |   |    |      |  |  |
| 4        | <b>CABLE</b>  |    |      |  |  |
|          | Supply ,Installation, testing and commissioning of 2*1.5sqmm coper armoured FRLS cable  | 60 | Mtrs |  |  |
|          |   |    |      |  |  |
| 5        | <b>SIGNAGES</b>   |    |      |  |  |
|          | Supply & erection of necessary Glow Sign Board made of 3mm thick PVC foam board for each floor 12" x 4"   | 2  | Nos  |  |  |
|          |   |    |      |  |  |
| 6        | <b>BATTERY</b>  |    |      |  |  |
|          | Supply & erection of 12 V 7 Ah battery for Fire Alarm Panel   | 2  | Nos  |  |  |
|          |   |    |      |  |  |
|          |   |    |      |  |  |
| <b>C</b> | <b><u>Civil Works</u></b>   | -  | -    |  |  |
| 1        | Providing openings in reinforced cement concrete work by cutting out cores of diameter up to 200 mm and depth up to 400 mm using rotary cutting tool including fixing of cutting tool, erection of staging, supports, clamps, accessories, water supply etc all as per site requirement | 5  | each |  |  |



|   |  |    |      |  |  |
|---|--|----|------|--|--|
| 2 | Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc. | 60 | Mtrs |  |  |
| 3 | Finishing walls with water proofing cement paint of required shade :   |    |      |  |  |
|   | Old work (one or more coats applied @ 2.20 kg/10 sqm) complete   | 25 | sqm  |  |  |
|   | <b>Total of Civil</b>  |    |      |  |  |
|   |  |    |      |  |  |
|   | <b>TOTAL (A+B+C)</b>   |    |      |  |  |