



GOVERNMENT OF WEST BENGAL  
IRRIGATION & WATERWAYS DIRECTORATE  
OFFICE OF THE SUPERINTENDING ENGINEER  
NORTH BENGAL MECHANICAL & ELECTRICAL CIRCLE  
TINBATTI, SILIGURI-734005  
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## **NOTICE INVITING EXPRESSION OF INTEREST (EOI)**

**E.O.I.No - WBIW/SE/NBMEC/EOI-01(e)/2020-21**

Expression of Interest for the work of "Installation, Testing and Commissioning of Fire Fighting Arrangement (Phase-II) with Conventional Fire Detection Alarm System for Teesta Administrative Building, Annex Building and Adjacent Teesta Prokalpa Bhawan (Bungalow) at Tinbatti More, Siliguri." is being invited by the Superintending Engineer, North Bengal Mechanical & Electrical Circle, on behalf of the Governor of West Bengal from eligible and resourceful agencies/OEM/OEM authorized dealer having sufficient financial capability and experience for execution of similar nature of work.

### **Issue of EOI documents :**

To download the EOI documents, login the website [www.wbiwd.gov.in](http://www.wbiwd.gov.in) (the official website of the Irrigation & waterways Department, Government of West Bengal) and click to search in the "[Tender of I & W dept.](#)" link provided there in.

### **Submission of EoI :**

The intending agencies/OEM/OEM authorized dealer should submit their EOI for the work as cited above in a sealed envelope super scribing on "Installation, Testing and Commissioning of Fire Fighting Arrangement (Phase-II) with Conventional Fire Detection Alarm System for Teesta Administrative Building, Annex Building and Adjacent Teesta Prokalpa Bhawan (Bungalow) at Tinbatti More, Siliguri." at the Office of the Superintending Engineer, North Bengal Mechanical & Electrical Circle, Tinbatti, Siliguri-734005, West Bengal, within stipulated last date. The same can be sent by e-mail ([senorthbengal@gmail.com](mailto:senorthbengal@gmail.com)) by the intending agencies/OEM/OEM authorized dealer. No postal delay will be considered.

The intending agencies/OEM/OEM authorized dealer should submit their EoI as per list of items enclosed herewith. Rates and amounts should be filled up properly.

**The quoted rates should be inclusive of all taxes/duties complete.**

Before submitting EOI, the intending contractors/bidders should acquaintedsite make themselves of thoroughly with the local conditions prevailing at implementation of the work by undertaking field inspections and taking into consideration all probable likely factors and difficulties to be involved in execution of the work as per specification in all respects including transportation of materials, communication facilities, climate conditions, availability of materials in the market etc. and no claim whatsoever will be entertained on those accounts afterwards. He/ She may contact this office in any working day in between 11 am to 3 p.m. Intending agencies or their authorized representatives may remain present while opening of the sealed covers containing EOI's.

Since, the Notice Inviting Expression of Interests (Egoism) is being made for subsequent Tender; no work order will be issued in favour of any agency against the EOI's. No payment whatsoever would be borne by I& W Department for submission of EOIs.

The intending agencies should submit the following and self-attested copies of the same are to be submitted with the EOI.

- I. Credential Certificate:-BOQ duly authenticated by issuing authority and work order. Completion Certificate of 100% completed work of similar nature.
- II. Annual Turnover from business:-Profit and loss accounts statement in the prescribed form with annual turnover of last three financial years or during the period since formation of the company/ Firm/society, if it was set up in less than three year period.
- III. Company Details like Trade license and others documents.
- IV. Professional Tax Payment Certificate (PTPC) or Challan.
- V. PAN Card.
- VI. GST Registration Certificate.
- VII. Latest I.T. Return. (Last three years)

**Pre Bid Meeting:**

Pre Bid meeting will be held in the office chamber of the **Superintending Engineer, North Bengal Mechanical & Electrical Circle, Teesta Administrative Building, Tinbatti, Siliguri, 734005**(EOI Inviting Authority) on **14.07.2020 at 12:00 noon** in order to acclimatize the prospective contractors/bidders through an interactive open session, replying to their queries, and clear doubts in connection with the work/s, if any

**Last date of submission of bid is on 31.07.2020 up to 4.00p.m.**

# Technical Specification

**Name of The Work:** “Installation, Testing and Commissioning of Fire Fighting Arrangement (Phase-II) with Conventional Fire Detection Alarm System for Teesta Administrative Building, Annex Building and Adjacent Teesta Prokalpa Bhawan (Bungalow) at Tinbatti, Siliguri”.

## 1.1 INTRODUCTION

### 1.1.1 Scope

1.1.1.1 These specifications cover water based fixed fire-fighting installations.

1.1.2 Related Documents: These General Specifications shall be read in conjunction with the conditions of contract, tender specifications, schedule of work, drawings and other documents connected with the work. In the event of any discrepancy between these specifications and general conditions of contract and specification, the latter shall overrule the former.

1.1.3 Terminology: The definition of terms used in these specifications shall be in accordance with relevant IS.

1.1.4 Bidders should inspect the site condition thoroughly in his own interest with examining existing Fire Fighting System installed at the buildings to familiarize themselves with the each installed items for providing their valuable technical specifications/suggestions to alter if required the BOQ items with specification in discuss with Engineer –In-Charge.

## 1.2 CONFORMITY WITH STATUTORY ACTS; RULES, STANDARDS AND CODES:

All components shall conform to relevant Indian Standard Specifications, wherever existing, amended to date.

## 1.3 SAFETY CODES AND LABOUR REGULATIONS:

(i) In respect of all labour employed directly or indirectly on the work for the performance of the fire-fighting contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provisions, B.I.S. recommendations, factory act, workman's compensation act, I&W. Dpt. code and instructions issued from time to time.

In addition, the Engineer-in-charge shall bear liberty to make arrangements and provide facilities as aforesaid and recover the cost incurred thereon from the contractor.

(ii) The contractor shall provide necessary barriers, warning signals and other safety measures while laying of pipelines, cables etc. or wherever necessary so as to avoid accident. He shall also indemnify I&W. Dpt. against claims for compensation arising out of negligence in his respect. Contractor shall be liable in accordance with the Indian Law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising therefrom during the execution of work. The contractor shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the contractor due to the above provision thereof.

1.4 WORKS TO BE ARRANGED BY THE DEPARTMENT: Unless otherwise specified in the tender documents, the following works shall be arranged by the Department:

- (i) Space for accommodating all the equipment and components involved in the work.
- (ii) Power supply, Water supply and Drain points as per para 1.6.

## 1.5 WORKS TO BE DONE BY THE CONTRACTOR:

Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost - whether specifically indicated in the schedule of work or not:-

- (i) Foundations for equipment including foundation bolts and vibration isolation spring/pads,
- (ii) Suspenders, brackets and floor/wall supports for suspending/supporting pipes.
- (iii) Suspenders and/or cable trays for laying the cables,
- (iv) Excavation and refilling of trenches in soil wherever the pipes are to be laid directly in ground, including necessary base treatment and supports.
- (v) Sealing of all floor slab/wall openings provided by the Department or made by the contractor for pipes and cables, from fire safety point of view, after laying of the same.
- (vi) Painting of all exposed metal surfaces of equipment and components with appropriate colour as per para 1.13.
- (vii) Making openings in the walls/ floors/slabs or modification in the existing openings wherever provided for carrying pipe line, cables etc.
- (viii) All electrical works including cable/wires, earthing etc. beyond power supply made available by the department.
- (ix) Making good all damages caused to the structure during installation and restoring the same to their original finish

## 1.6 POWER SUPPLY, WATER SUPPLY AND DRAINAGE

### 1.6.1 Power Supply:

(i) Unless otherwise specified, 3 phase, 415 volts, 50 Hz power supply (5 KW) shall be provided by the department free of charge to the contractor at one point for installation at site. Termination switchgear however, shall be provided by the contractor. Further extension if required shall be done by the contractor.

(ii) (a) The power supply for testing and commissioning of the complete installation shall be made available by the Department free of charge to the contractor. For this purpose, the power supply shall be given at the main incomer unit of the electrical panel to be provided by the contractor. The termination of this feeder in the main incomer unit shall be the responsibility of the contractor and nothing extra shall be paid on this account.

(ii) (b) Unless otherwise specified in the contract, further power distribution to the various equipments shall be done by the contractor.

(iii) Where the power supply has to be arranged by the Department at more than one point as per the terms of the contract, the termination of all such power feeders in the incomer of respective control panels to be provided by the contractor shall be the responsibility of the contractor and nothing extra shall be paid on this account.

(iv) The contractor shall use the power supply only for the bonafied use of the work.

No major fabrication work shall be done at site. Power shall be used only for welding/cutting works. The power supply shall be disconnected in case of such default and the contractor shall then have to arrange the required power supply at his cost.

### 1.6.2 Water Supply:

Water supply shall be made available to the contractor by the Department free of charge at only one point for installation. Further extension if required shall be done by the contractor at his cost.

### 1.6.3 Drainage:

- (i) Drain traps in pump room shall be arranged by the department.
- (ii) Piping Connections from the equipment to the drain trap shall be done by the contractor. These items of work shall be measured and paid as per contract.

### 1.7 MACHINERY FOR ERECTION:

All tools and tackles required for unloading/handling of equipment and materials at site, their assembly, erection, testing and commissioning shall be the responsibility of the contractor.

### 1.8 COMPLETENESS OF THE TENDER, SUBMISSION OF PROGRAMME, APPROVAL OF DRAWINGS AND COMMENCEMENT OF WORK

#### (i) Completeness of the tender:-

All sundry equipment, fittings, assemblies, accessories, hardware items, foundation bolts, supports, termination lugs for electrical connections, cable glands, junction boxes and all other items which are useful and necessary for proper assembly and efficient working of the various equipments and components of the work shall be deemed to have been included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.

#### (ii) Submission of programme:-

Within fifteen days from the date of receipt of the letter of award, the successful tenderer shall submit his programme or submission of drawings, supply of equipment, installation, testing, commissioning and handing over of the installation to the Engineer-in-Charge.

#### (iii) Submission of Drawings:-

The contractor shall submit the drawings to the Engineer-in-Charge as per para 1.17.2 for approval before start of work.

#### (iv) Commencement of Work:-

The contractor shall commence work as soon as the drawings submitted by him are approved either in full or in part as the case may be.

### 1.9 DESPATCH OF MATERIALS TO SITE AND THEIR SAFE CUSTODY:

The contractor shall dispatch materials to site in consultation with the Engineer-in-Charge.

### 1.10 CO-ORDINATION WITH OTHER AGENCIES:

The contractor shall co-ordinate with all other agencies involved at the site of work so that the work of other agencies is not hampered due to delay in his work. Piping, cabling or any other work, which directly affect the progress of work of other agencies, shall be given priority.

### 1.11 QUALITY OF MATERIALS AND WORKMANSHIP

(i) The components of the installation shall be of such design so as to satisfactorily function under all conditions of operation.

(ii) The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.

(iii) All equipment and materials to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after sales service.

### 1.12 CARE OF THE BUILDING:

Care shall be taken by the contractor during execution of the work to avoid damage to the building. He shall be responsible for repairing all such damages and restoring the same to the original finish at his cost. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

1.13 COLOUR SCHEME FOR THE EQUIPMENT AND COMPONENTS:

1.13.1 The entire metal work above ground level shall be painted with red colour shade No.: 536 of IS: 5.

1.13.2 Pump, motor and engine shall be painted with red colour shade No. 536 of IS: 5.

1.14 INSPECTION AND TESTING

1.14.1 Initial Inspection and testing

(i) Initial inspection of materials and equipment at manufacturer's works may be done by the Engineer-in-Charge or his representative. For item/ equipment requiring initial inspection at manufacturer's works, the contractor will intimate the date of testing of equipment at the manufacturer's works before dispatch. The contractor shall give sufficient advance notice regarding the dates proposed for such tests to the department's representative(s) to facilitate his presence during testing. The Engineer-in-charge at his discretion may witness such testing. Equipment will be inspected at the manufacturer/authorized dealer's premises, before dispatch to the site by the contractor.

(ii) The department also reserves the right to inspect the fabrication job at factory and the successful tenderer has to make arrangements for the same.

(iii) The materials duly inspected by Engineer-in-Charge or his authorized representative shall be dispatched to site by the contractor.

(iv) No additional payments shall be made to the contractor for initial inspection/testing at the manufacturer's works by the representative of the Engineer-in-Charge. However, the department will bear the expenses of its representative deputed for carrying out initial inspection/testing.

1.14.2 Final Inspection and Testing:

Final Inspection and testing will be done by the Engineer-in-Charge or his representative.

The installation will be offered for inspection to the Department of Fire & Emergency Services (DF&ES). The contractor or his representatives shall attend such inspection of the Chief Fire Officer, extend all test facilities as are considered necessary, rectify and comply with all observations of the Chief Fire Officer which will be a part of the agreement and arrange for obtaining necessary clearance certificate/ NOC in favour of the department. In case the contractor fails to attend the inspection and make desired facilities available during inspection, the department reserves the right to provide the same at the risk and cost of the contractor and impose penalty for the same. The installation will be accepted by the department only after receiving clearance from Chief Fire Officer for the work executed by the contractor under the agreement.

Testing on Completion of Installation: The entire system shall be tested after Completion of Installation as per the operating sequence specified.

Standard and Codes:

SL. NO.	Standard and code	Description
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1.	IS-1648-1961	Code of practice for fire safety of building (general) firefighting equipment and maintenance.
2.	IS-3844-1966	Code of practice for installation of internal fire hydrant in multi-storied building.
3.	IS-2217-1963	Recommendation for providing first aid and fire-fighting arrangement in public buildings.
4.	IS-2190-971	Code of practice for selection, installation and maintenance of portable first fire appliance.
5.	IS-3589	Electrically welded steel pipes (Medium class)
6.	IS-1239	Mild steel tubes, tubular and other wrought steel fittings (Medium class)
7.	IS-780	C.I. Double flanges sluice valve
8.	IS-778	Gun metal valve
9.	IS-909-1965	External fire hydrant (underground)
10.	IS-5290-1969	Internal landing valve
11.	IS-884-1969	First and hose reel
12.	IS-934-1976	Specification for portable chemical fire extinguisher soda acid type
13.	IS-2873-1969	Specification for fire extinguisher for carbon dioxide
14.	IS-2189 & 2109	Automatic fire alarm system or Bss-3116

#### 1.14.3 Safety Measures:

All equipments shall incorporate suitable safety provisions to ensure safety of the operating personnel at all times. The initial and final inspection reports shall bring out explicitly the safety provisions incorporated in each equipment.

#### 1.15 GUARANTEE:

(i) The contractor shall guarantee the complete system to provide the specified flow and pressure under all conditions and outlets.

(ii) All equipments shall be guaranteed for a period of 12 months from the date of acceptance and taking over of the installation by the Department against unsatisfactory performance and/or breakdown due to defective design material, manufacture workmanship or installation. The equipment or component or any part thereof so found defective during the guarantee period shall be repaired or replaced free of cost to the satisfaction of the Engineer-in-charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-in-charge in this regard shall be final.

### 1.16 TENDER DRAWINGS, DRAWINGS FOR APPROVAL AND COMPLETION DRAWINGS

#### 1.16.1 Tender Drawings

The drawings appended with the tender documents are intended to show the areas allotted for various equipment, tentative pipe routes. The equipment offered shall be suitable for installation in the spaces shown in these drawings.

#### 1.16.2 Drawings for approval on award of the work

Approvals: - The Contractor shall prepare all submission drawing and obtain all approvals of fire-fighting works from fire-fighting authorities.

The contractor shall prepare and submit following drawings and get them approved from the Engineer-in-charge before the start of the work. The approval of drawings however does not absolve the contractor of his responsibility to supply the equipment/materials as per agreement. In case of any contradiction between the approved drawings and agreement the decision of the Engineer-in-Charge shall be final and binding on the contractor.

- (a) Lay out drawings of the equipment such as main pipe, diesel engine, driven pump, jokey pump, standby pump, related pipe lines inside pump room including different types of valves, wet riser, external hydrants (if any) etc. to be installed in pump room and terrace.
- (b) Drawings showing the details of erection of entire equipment including their foundations.
- (c) Plumbing drawings showing the layout of entire piping, diameter and length of pipes hydrant, air vessel, valves and isometric drawings showing connections for all equipment.
- (d) Electrical wiring diagrams for all electrical equipment and controls including the sizes and capacities of the various cables and equipment.
- (e) Electrical line diagram of entire system.
- (f) Dimensioned drawings of all electrical and control panels
- (g) Drawings showing details of supports for pipes, cable tray etc.
- (h) Any other drawings relevant to the work.

#### 1.17.3 Completion Drawings

Three sets of the following laminated drawings shall be submitted by the contractor while handing over the installation to the Department. Out of this one of the sets shall be laminated on a hard base for display in the fire control room. In addition one set will be given on compact disc

- (a) Installation drawings giving complete details of all the equipment, including their foundations,
- (b) Plumbing layout drawings giving sizes and lengths of all the pipes and the sizes and locations of all types of valves, and including isometric drawings for the entire piping including the pipe connections to the various equipment.
- (c) Line diagram and layout of all electrical control panels giving switch gear ratings and their disposition, cable feeder sizes and their layout,
- (d) Control wiring drawings with all control components and sequence of operations to explain the operation of control circuits.

#### 1.18 DOCUMENTS TO BE FURNISHED ON COMPLETION OF INSTALLATION

Three sets of the following documents shall be furnished to the department by the contractor on completion of work:-

- (a) Completion drawings as per para 1.17.3
- (b) 3 sets of manufacturer's technical catalogues of all equipment and accessories.



(c) Operation and maintenance manual of all major equipment, detailing all adjustments, operation and maintenance procedure.

Reputed manufacturer/vendor list should be submitted in the following format.

ACCEPTABLE MAKES AND OF MATERIALS

SL. NO.	ITEM	ACCEPTABLE MAKE
1.	MCB	Siemens /Schneider /Legrand /L&T/ABB
2.	ACB/MCCB/Contactors	Legrand /Schneider /Siemens /L&T/ABB
3.	FRLSPVCinsulated,copperconductor strandedcable/XLPECables(ISIMarked)	Finolex /Polycab /Havells /L&T/RRKable.
4.	GI/MSPipe (ISIMarked)	Jindal(Hissar) /TATA/SAIL/Bansal
5.	C. T.	L&T/AE/KAPPA
6.	Fire dieselengine	Cummins /Koel/KirloskarGreen /Caterpillar
7.	Fire pump /Jockypump /dieselpump	Kirlosker /Grandfos /Mather Platt
8.	Ammeter,voltmeter,frequeuncymeter kilowathourmeter,PFmeter	L&T/Schneider /ABB/Siemens/AE
9.	Indicating lamp	Siemens,L&T, AE, IMP,RassControl, Kaycee
10.	Selector switch	L&T,GE,Kaycee,AE,IMP,RASSControl,Salzer.
11.	Batteries	Exide /Amron/Stamford.
12.	DOLstarter	L&T/Seimense/Schinder
13.	Sluice valve/NRV	Kirlosker/Advance/Zoloto/Sant/Leader/Lifeguard
14.	SingleHeadedinternalNon-Hydrant,4 wayFBIC	Kirlosker/advance/Zoloto/Leader/Lifeguard
15.	ShutoffNozzle	Kirlosker/advance/Zoloto/Leader/Lifeguard
16.	ButterflyValve	Kirloskar/Bugatti/Zoloto/Audco/Honeywell/Lifeguard
17.	HydrantValve	Kirloskar/Bugatti/Zoloto/Audco/Honeywell/Lifeguard
18.	Non-ReturnValve	Kirloskar/Bugatti/Zoloto/Koley/Honeywell/Lifeguard.
19.	GunMetalValve	Leader/Sant/Kirti/Saint/VS/Zoloto
20.	Stainless SteelStrainer	Kirloskar/Leader/Hammer/SANT/Lifeguard/Honeywe
21.	HoseBox/RRLHosereel/FirstAidHose	Newage/Minimax/Superex/Lifeguard
22.	FireBrigade	Kirloskar/Leader/Hammer/SANT/Lifeguard/Honeywe
23.	InstallationControlValve	Tyco/HD/Viking/CD
24.	BranchPipe, Nozzle and Coupling	Newage/Minimax/superex/Lifeguard
25.	PressureSwitch	Indfoss/Switzewr/Systemsensor/Danfoss
26.	Pressuregauges	Fiebig/H-guru/Bell/Wika
27.	Fireextinguisher	Omex/SafeGuard/Lifeguard/fireshield
28.	Sprinkler (UL Listed)	Spray Safe/ HD
29.	Relays	L&T / Siemens
30.	Starters	L&T / Siemens/ Cutler Hammer
31.	Control Cable	CCI/ Gloster/ Havells
32.	HRC Fuses	L&T / Siemens
33.	Single phasing preventor / over load protection unit	Minilee / Siemens
34.	Moduled case circuit breakers	L&T / Siemens
35.	Fuse Disconnecter switch / switch fuse units	L&T / Siemens/ MDS/ GE Power/ ABB/Indo Asian Schneider/Control & Switch Gear

36.	Fire Alarm panel	Appolo/Edwards/System Sensor
37.	Fire electrical control panel	Diamond Electrical/SPC electrotechpvt. Ltd.

\*\*\* Civil portion of the work (estimate/sanction/tender/execution) may be taken up by corresponding civil counter part of I&WD.

Name of Work: Installation, Testing and Commissioning of Fire Fighting Arrangement (Phase-II) with Conventional Fire Detection Alarm System for Teesta Administrative Building, Annex Building and Adjacent Teesta Prokalpa Bhawan (Bungalow) at Tinbatti More, Siliguri.							
Sl. No.	Item Description	Quantity	Units	Description of Work proposed by the Bidders (Budgetary Quotes)	RATE including all charges and taxes in Figures to be entered by the Bidder (Budgetary Quotes)	TOTAL AMOUNT including all charges and taxes (Budgetary Quotes)	TOTAL AMOUNT in Words (Budgetary Quotes)
1	2	3	4		5	6	7
1	Supply, Installation, Testing Commissioning of <b>Electric Motor Driven main fire pump</b> suitable for automatic operation and consisting of followings: complete in all respect as required. (a) Horizontal type single stage/multistage centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5Kg/sq. cm a highest and farthest outlet at specified flow of 171m <sup>3</sup> /Hr at 80MWC head conforming to IS: 1520. [The pump should be capable of delivering 150% rated discharge at a head not less than 65% of the rated head](b) Suitable HP squirrel cage induction motor, TEFC, synchronous speed 1500RPM/2900RPM, suitable for operation on 415Volts, 3Phase, 50Hz AC with IP55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation. Conforming to IS-325 (c) M.S. fabricated Common base plate, coupling guard, foundation bolts etc. as required. (d) Suitable cement concrete foundation duly plastered with anti vibration pads.	1	Set				
2	Supply, Installation, Testing Commissioning of <b>Diesel Engine Driven main fire pump</b> suitable for automatic operation and consisting of followings: complete in all respect as required (a) Horizontal type single/multistage centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5Kg/sq. cm at highest and farthest out let at specified flow of 171m <sup>3</sup> /Hr (2850LPM) at 80MCW head. (b) 133 HP, 1500 to 1800RPM (Diesel Engine) Water cooled with radiator, Diesel Tank, exhaust pipe extended upto 2m or as required as per condition, outside pump house duly insulated with 50mm thick glass wool with 1.0mm thick aluminium sheet cladding, residential silencer, instruments and protection as per specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. (c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (d) Suitable cement concrete foundation duly plastered with anti vibration pads.	1	Set				
2.1	Supply, Installation, Testing & Commissioning of drain pump/sump pump of suitable capacity with all types of attachment as necessary.	1	Set				
3	Fabrication, Supplying, Installation, Testing and Set Commissioning of <b>Electrical Control Panel</b> of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after proper treatment process, cable alley, inter-connection, having switch gears and accessories mounting and internal wiring, earthing terminals of suitable types & nos. numbering etc. complete in all respect: suitable for operation on 415Volts, 3Phase, 50Hz AC supply with enclosure protection of every terminals of class IP 42 as required.						
3.1	A COMMON PANEL IN FIRE PUMP HOUSE (i) INCOMER (a) 400 Amps, 4 Pole, 50KA, MCCB with Microprocessor release with Ics = 100% Icu digital Voltmeter (0-500Volts)of LED/LCD display with selector switch, Digital Ammeter (0-400Amps) of LED/LCD display with inbuilt selector switch and CT's etc. set of 3 Phase LED indicating lamps of appropriate colours, Set of Aluminium Bus bar for 600Amps: 1set. (ii) OUTGOING. Main Fire Pump i) 200Amps 4 Pole MCCB, 35/36 KA Ics = 100% Icu with suitable HP fully automatic Star/Delta starter with over load protection, (without no volt and under voltage trip) current sensing type single phase complete with all accessories and internal wiring required for automatic operation, selector switch for local remote, auto/manual OFF operation: 2set. ii) Digital Ammeter of LED/LCD display with selector switch alongwith suitable ratio CTs: 2set. iii) Pump on LED indicating lamp: 2Nos.						
3.2	JOCKEY PUMP Control i) 63Amps, 4Pole MCCB, 25KA Ics = 100% Icu with suitable HP fully automatic Star/Delta starter with over load protection, (without no volt and under voltage trip) current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual OFF operation: 1set. ii) Digital ammeter with selector switch alongwith suitable ratio CTs: 1set.						
3.3	Diesel Engine Control for Diesel Engine comprising: (i) Auto/Manual selector switch and 3 attempt starting device, timers and relays as required, push buttons, start/stop in manual mode. (ii) Indicator lamp for High/Low Lub oil pressure, High Water Temperature and Engine ON indicator. (iii) Battery charger suitable for 12V/24V DC boost and fickle selector switch, 0-30 Volts DC Voltmeter, 0-20A DC Ammeter. (iv) All standard relays and accessories for automatic operation of Diesel Engine.						

Sl. No.	Item Description	Quantity	Units	Description of Work proposed by the Bidders (Budgetary Quotes)	RATE including all charges and taxes in Figures to be entered by the Bidder (Budgetary Quotes)	TOTAL AMOUNT including all charges and taxes (Budgetary Quotes)	TOTAL AMOUNT in Words (Budgetary Quotes)
1	2	3	4		5	6	7
3.4	SYSTEM CONTROLLER: Designing, Supply, Installation, Testing and Commissioning of system controller to control operation of Main Electric Fire Pumps, Pressurisation Pump/Jockey Pump including drain pumps/sump pump in sequence as per National & International standards & specification consisting of relays, timers, sensors, annunciation window for fault indication, complete as per specification and full satisfaction of EIC.	1	Complete Job				
4	Supplying and laying of insulated, FRLS PVC sheathed aluminium conductor 1.1KV grade armoured U.G. Cable of following sizes on surface by utilizing suitable size cable tray/in existing cable tray, suitably clamped as required						
4.1	(a) 3.5 core 150 sq. mm	80	m				
4.2	(b) 3.5 core 70 sq. mm	60	m				
4.3	(c) 4 core 16 sq. mm	350	m				
5	Copper lugs at both ends of suitable size and type as required (a) 2 x 22/0.3 (1.5 Sq. mm) for control cable.	1	Lot				
6	Supply and making end termination with brass compression gland and AL lugs for following sizes of PVC insulated, PVC sheathed/XLPE Al conductor cables of 1.1 KV grade as required.						
6.1	(a) 3.5 core 150 sq. mm	10	Set				
6.2	(b) 3.5 core 70 sq. mm	10	Set				
6.3	(c) 4 core 16 sq. mm	20	Set				
7	Supply, installation and testing of earthing station with G.I. plate of size 600mm x 6mm including accessories and providing masonry enclosure with copper plate having locking arrangement and watering pipe including charcoal/cock and salt complete as per specification.	4	Set				
8	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS: 3589 and 1239 including fitting like elbows, tees, flanges, tapers, nuts bolts, gasket, etc., fixing the pipe on the wall/ceiling with suitable clamps and painting with two or more coats of synthetic enamel paint of required shade complete as required. Make: TATA/Jindal						
8.1	(a) 150NB	20	m				
8.2	(b) 100NB	60	m				
8.3	(c) 80NB	15	m				
8.4	(d) 65NB	15	m				
8.5	(e) 25NB	30	m				
9	Supply, installation, testing & commissioning of CI Gate Valve as per IS:14846 (PN 16) with matching flanges complete with nuts & bolts. ISI Marked						
9.1	Size:150NB	6	Nos.				
9.2	Size:65NB	3	Nos.				
9.3	Size:100NB	6	Nos.				
10	Supply, installation, testing & commissioning of Non Return Valve Wafer type as per IS:13095 with matching flanges complete with nuts & bolts. ISI Marked						

Sl. No.	Item Description	Quantity	Units	Description of Work proposed by the Bidders (Budgetary Quotes)	RATE including all charges and taxes in Figures to be entered by the Bidder (Budgetary Quotes)	TOTAL AMOUNT including all charges and taxes (Budgetary Quotes)	TOTAL AMOUNT in Words (Budgetary Quotes)
1	2	3	4		5	6	7
10.1	Size: 150NB	4	Nos.				
10.2	Size: 80	3	Nos.				
11	Supply, installation, testing & commissioning of CI Wafer type Non Return Valve with matching flanges complete with nuts & bolts.						
11.1	Size: 150NB	6	Nos.				
11.2	Size: 65NB	4	Nos.				
12	Providing, installation, testing and commissioning of suction strainer with stainless steel strainer fabricated out of 1.6mm thick stainless steel sheet with 3mm dia hole with stainless steel flange.						
12.1	Size: 100NB	3	Nos.				
12.2	Size: 80NB	2	Nos.				
13	Arrangement for Repairing (If required) and Shifting the Existing Main Electrical Pump Set & Jockey Pump Set with associate existing panel as applicable from old Pump House to new Pump house & erection as well installation of the said pumps with commissioning including shifting of Electrical Panel with all required cables as per direction and complete satisfaction of EIC.	1	Complete Job				
<b>CONVENTIONAL FIRE DETECTION ALARM SYSTEM</b>							
14	SITC of Multicriteria Smoke Detector with Base.	168	Nos.				
15	SITC of Heat Detector with base.	10	Nos.				
16	SITC of Glass Break Type Manual Call Point.	7	Nos.				
17	SITC of Hooter cum Sounder.	7	Nos.				
18	SITC of copper armoured cable 2 X 1.5 sq mm with accessories.	700	m				
19	SITC of cable Junction Box with terminals.	10	Nos.				
20	SITC Of 12 Zone Conventional Digital Main Fire Alarm Panel with 24 V Battery Back up Fault signals , Zone Selection etc.	1	No.				
21	System Commissioning Charges	1	Complete Job				
22	Providing and installation for pressurized wet riser by tapping from existing header at indoor of buildings with erection, fabrication, testing of MS black steel pipe Medium grade conforming to IS: 1239, Part-I including all fittings viz. Elbows, Tees, Flanges, etc. reducer clamps, MS support dash fasteners etc. including painting the pipe with two coats of approved red oxide primer and two coats of approved red enamel paint and welded joints complete with cutting and making good the complete with cutting and making good the walls, floors or any applicable surface for pumping system as per direction and complete satisfaction of EIC.						
22.1	100mm NB	60	m				
22.2	25mm	6	m				
22.3	MS angle, supporting with fastners & 'U' Clamps	200	kg				
22.4	Supply and Wrapping Coating for U/G Piping 150mm size pipe including successful holiday test.	5	Roll				
23	Supply and Installation of Swing type Hose Reel with 30m of 25mm High Pressure PVC Hose and Hand control Nozzle.	7	Nos.				
24	Supply and installation of GM Ball Valve 25mm with nipple.	11	Nos.				
25	Supply and Installation of Butterfly Valve 100mm with companion flanges, nut bolt, etc.	4	Nos.				
26	Supply and Installation of Air release Valve with socket and nipple	4	Nos.				
27	Arrangement for fitting-fixing "NO SMOKING" board, "No Parking" Board, "Emergency Exit" Board at appropriately proper position with adequate numbers as required.	1	Job				
28	Supply and installation, testing commissioning a Closed Circuit TV System and Fire Alarm Panel, Emergency Public Address System which covered all corner of the floor of the buildings.	1	Job				
29	Supply and laying of hume pipe of suitable size and length for U/G pipe lying as per site condition.	1	Lot				
30	Hydrostatic test of all piping system.	1	Complete Job				

**N.B: Any others item(s), if relevant or necessary may be included or altered by the bidders.**

Sd/-  
**Superintending Engineer**  
**North Bengal Mechanical & Electrical Circle**  
**Tinbatti, Siliguri**