

Government of Jammu & Kashmir  
Office of the Executive Engineer, Jal Shakti (PHE) Mechanical Division (North) Sopore  
Website: phekashmir.com Email ID : phe.mdns@gmail.com

No.: PHE/MDNS/DB/ 3527-34  
Dated: 12-08-2023

M/s Mawadat Electricals  
Pataaw Budgam  
GST No: 01FLEPM9317Q1ZM  
Cell No: 7006792132

Adv. Cost:	Rs 47.902 Lacs
Allotted Cost:	Rs 45.986 Lacs

Subject: Various electromechanical works to be carried out at WSS Indergam Pattan under JJM.

Reference: 1. This office e-NIT No.: e-NIT No. 04 of 2023-24, S. No. 03 issued under endorsement No.: PHE/MDNS/DB/274-86, dated: 19-04-2023.  
2. Authorization awarded by Member Secretary DJJM Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Baramulla/Bandipore HQ at Sopore issued vide No. SE/Hyd/DB/4268-61, dated: 15-07-2023.

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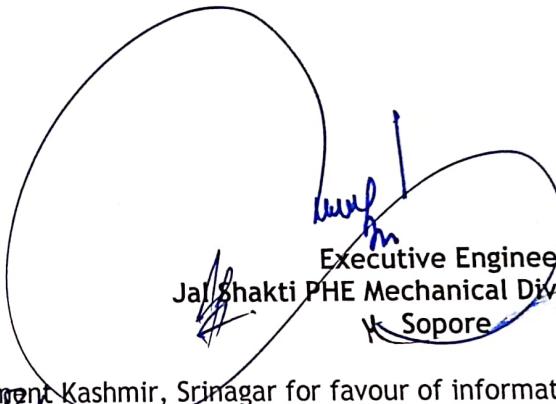
Dear Sir,

For and on behalf of Lt. Governor of J&K U.T contract for execution of "Various electromechanical works to be carried out at WSS Indergam Pattan under JJM" is hereby awarded to your firm on the quoted/negotiated rates, as per 'General Terms & Conditions' and 'Schedule of cost and quantities' annexed herewith as under:

Annexure A: General Terms & Conditions.

Annexure B: Schedule of cost and quantities.

Encl.    leaves

  
Executive Engineer  
Jal Shakti PHE Mechanical Division (North)  
Sopore

Copy to the:

1. Chief Engineer Jal Shakti (PHE) Department Kashmir, Srinagar for favour of information.
2. District Development Commissioner B1 u, for favour of information.
3. Superintending Engineer Jal Shakti (PHE) Mechanical Circle (North) Srinagar, for favour of information.
4. Superintending Engineer Jal Shakti (PHE) Hydraulic Circle B1 u HQ at Sopore, for favour of information.
5. Executive Engineer Jal Shakti (PHE) Division B1 u, for favour of information.
6. Provisional Head, TPIA JJM Kashmir, (WAPCOS Limited) Corporate Office 76-C Institutional area Sector-18 Gurugram-122015 (Haryana) for favour of information.
7. Assistant Executive Engineer Jal Shakti (PHE) Mechanical Sub-Division: B1 u for information & necessary action.
8. File concerned.

ANNEXURE "A" to this office Allotment Order No: PHE/MDNS/DB/, dated:

Name of work: Various electromechanical works to be carried out at WSS Indergam Pattan under JJM.

General Terms and Conditions

- Completion period:** The work shall have to be completed by you strictly in accordance with the approved specification/departmental requirements under the close supervision of the concerned Sub-Division within a period of **90 days**, from the date of issuance of allotment order, failing which penalty as per the relevant clause below shall be imposed.
- Third Party Monitoring:** The allotted works shall be subject to check by the third-party monitoring agency appointed by the Department in Kashmir. The agency shall check the quality of works executed by the agencies, quality of materials used for construction and quality of machinery installed in each scheme. The TPIAs role shall be that of an assistant to the Employer's Representative for the purpose of monitoring and evaluation of the performance of the Contract during the Contract Period
- Inspection and Testing Before Dispatch:** Before dispatch from the source of site of the OEM, the electro-mechanical equipment shall be inspected by a third-party inspection agency i.e., M/S CEIL/Rites etc. New Delhi. The charges for the inspection shall be borne by the Department. However, the Firm (Bidder) shall make payment to the Inspection Agency (in case of 3rd Party Inspection) which shall subsequently be reimbursed by the Department. The successful tenderer shall intimate the Department and the Inspecting Agency/Authority in advance regarding the readiness of the equipment for dispatch and shall furnish test certificates.

It shall be responsibility of the suppliers to tie up with the third party nominated for inspection and get necessary inspection of the material done within the delivery period. Any delay on the part of the third party shall not be entertained as an excuse for timely supply of material/execution of work.

The product/ material at site shall be inspected by Assistant Executive Engineer concerned or any other official(s) of the department designated by the concerned Executive Engineer. Any modifications to the works as specified in the specifications considered to be necessary for smooth and trouble-free operation of the equipment by the Department or the third party inspection agency, the firm shall have to execute the same without any extra cost, to the best satisfaction of the department.

The firm shall as such keep the department informed about arrival of material at site. It shall be obligatory on the part of the firm to rectify the defects pointed out by the AEE, if any, and also to incorporate any modification within the scope of work which may be deemed necessary for better performance/finish and workmanship. The firm upon demand by the department or its representative shall rectify or replace defective unsuitable equipment.

The Department reserves the right to nominate its representative for inspection of the goods at the source of site of the supplier/manufacturers. As such the department at all reasonable times shall have access to the works and to the site and to all workshops and places where work is being executed and where material / manufactured articles and machinery are being obtained.

In case of Sub-Station and power/feeder lines, the firm shall have to obtain a clearance certificate from the concerned inspection Division of the Power Development Department.

The list of electromechanical equipment in which third party inspection from CEIL/RITES is to be carried on

- 1) DG Set of >40KVA capacities
- 2) Pumping Unit > 40 HP (Horizontal and Vertical)
- 3) Valves >300 mm
- 4) Pipe of all size
- 5) Iron Removal Plant

For items other than those manufacturers test certificate shall have to be provided.

At the time of installation, the firm will provide Third party inspection of machinery at source of site of respective OEM's which shall be undertaken only for equipment which are not available off the shelf. For rest of the equipment, test certificate, warranty documents along with necessary performance curve and data sheet duly signed by the representative of the OEM/authorized dealer and countersigned by the concerned firm shall be furnished by the firm.

4. **Transit Insurance:** The electro-mechanical equipment required for water supply schemes shall be insured through a Nationalized Insurance Company up to its final destination, against all transit risks. The firm should, therefore, take appropriate insurance policy in advance for covering the transit of the goods, charges for which shall be

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borne by the tenderer and shall be included in his quoted rates. The department shall pay no extra charges on this account.

5. **Mode of Dispatch:** The firm/contractor shall be responsible to adhere to transportation rules and regulations and the department shall not be responsible for any accident.
6. **Performance Security:** The successful bidder on award of the contract shall furnish a performance security equivalent to 03% of the value of the contract within one week of the issuance of allotment order in the shape of CDR/FDR/Bank Guarantee, valid for a period of three months beyond the completion period of the contract:
  - a. Safeguard against material and manufacturing defects, bad workmanship, improper design etc.
  - b. Successful execution of the contract and fulfillment of the conditions of the agreement.
  - c. Satisfactory performance of equipment in terms of the agreement.
7. **Terms of Payment for Electro-Mechanical Component:**
  - a. 70% (Seventy Percent) payment shall be released on receipt of material/equipment on Pro-Rata as per the allotment order and verification by the concerned Assistant Executive Engineer, thereof.
  - b. 20% (Twenty Percent) payment shall be released after installation and testing of the equipment.
  - c. Balance 10% (Ten Percent) shall be released after successful commissioning of the system and trial run of 01 month.

However, 10% on account of DLP shall be deducted from each running bill which shall be released after completion of DLP and satisfactory performance of the equipment for the period of 12 months.
8. **Warranty:** The firm shall be bound for satisfactory performance of equipment/ works for 12 months after the successful completion of trial run of 01 Month or whichever is later. If during warranty period any malfunctioning/ defects arise, the firm /joint venture shall have to rectify the same within a period of 03 days of receipt of intimation. In case of any failure on the part of the firm/joint venture to remove the defect, the Department may get the defects removed/ repaired by any other agency and cost thereof shall be recovered from the firm / joint venture and shall be recommended for further punitive action as governed under the relevant clause of the contract including blacklisting.
9. **Trial Run:** After Completion of the work the firm will have to make a trial run of the scheme for a period of 01 Month during which the bidder will have to operate through staff provided by the department and maintain the executed work to the full satisfaction of the Department. During this period, he will provide training to the staff and will also carry out maintenance work at his cost and risk, if required.
10. **Defect Liability Period (DLP):** The defect Liability period shall be for a period of 12 Months which shall commence after the successful completion of Trial run, during the defects Liability period (DLP) as it is required for its successful running and as per Standard Engineering Practices, to the full satisfaction of the department. The bidder shall be responsible to make good & remedy at his own expense any defect in works which is noticed during the DLP. In case any defect remains unattended by the firm at the completion of DLP, the department may extend the DLP for such time as deemed fit for getting the defect rectified subject to a maximum ceiling of 6 Months.
11. **Liquidated damages (LD):** In the event of firm's/joint venture failing, declining, neglecting or delaying the supplies / works or in the event of any damage occurring or being caused by the firm/ joint venture or in the event of any default or failure by the firm in complying with any of the terms and conditions of the contract, the Department shall with or without prejudice to any other remedies available to it under any law for the time being enforce in the UT:
  - a) Terminate the contract after 15 days' notice  
and/or
  - b) Recover the amount of loss caused by damage, failure or default, as may be determined by the department.  
and/or
  - c) Recover the extra cost, if any, involved in allotting contract to other party.  
and/or



- d) Impose Liquidated damages on account of delay beyond the schedule completion period to the tune of 0.5% of the delayed portion of contract every week but not exceeding 10% value of the contract.  
and/or  
e) Forfeit the performance security and blacklist the firm.
12. **Force Majeure:** Any failure or commission to carry out the provision of the contract shall not give rise to any claim by the department or bidder one against the other if such failure or commission arises from the 'ACT OF GOD' which shall include all natural calamities such as fires, floods, earthquake, hurricane, strikes, riots, embargoes or from any political or other reasons beyond the control of the parties including war, or a state of insurgency.
13. **Arbitration:** Any Dispute or difference arising between the department and bidder shall be dealt in accordance with the Arbitration and Conciliation Act 1996 and rules thereof. Any dispute arising between the firm and the department shall be settled within the jurisdiction of UT of Jammu and Kashmir.
14. **Penalty clause:** The firm shall ensure that the material/workmanship should conform to NIT specifications and relevant technical codes. In case the firm fails to supply the equipment or does not execute the work in accordance with the specifications or backs out from the contract or there is delay in completion of work beyond the stipulated time, the Department shall terminate the contract and recover the extra cost involved. In addition to this the department shall forfeit the earnest money and performance bank guarantee and may impose penalty up to 10% of the contract value at the discretion of Chief Engineer Jal Shakti (PHE) Dept Kashmir. The firm shall also be liable for all civil and criminal prosecutions under law if the specifications of the supplied equipment/ material used are found in contravention to the specification of the e-NIT.
15. **Safety of Govt. Infrastructures:** The firm should ensure the safety of the water supply lines, sewer lines, telephone cables, power cables, storm water drains etc., pipe laying alignment and, if any damage occurs during execution, it should be attended immediately at the cost of the bidder. Failing to attend immediately, the same will be got done by the Department at the risk and cost of the bidder.
16. **Firm's risk and insurance:** All risks of loss or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract are the responsibility of the firm.
17. **Subletting of Work:** The bidder shall not sublet the whole or part of the work. The bidder shall not assign the work or any part thereof or any benefit or any interest thereon or any claim arising of the contract, without prior written consent of the allotting authority.
18. **Work under Bidder's Charge:** From the commencement of the work to the completion thereof the same shall be under the bidder's charge. The bidder shall be held responsible for and make good any loss or injuries by fire or other causes / theft and shall hold the Government harmless for any claims for injuries to persons or damage to property happening from any neglect, default, want of proper care and misconduct on the part of the bidder, or any of his employees, during the execution of work. The bidder shall be responsible for the compensation if any, to labour under the existing labour laws of the country.
19. **Firm to Maintain Site Office:** The bidder shall provide and maintain, at his own cost a suitable site office at the site of Work to which the Department may send communications/ instructions.
20. **Claims to be put in writing:** The Department shall not be liable to the firm for any matter or thing arising out of or in connection with the contract or the execution, completion and maintenance of the work unless the bidder puts a claim in writing in respect thereof before getting the certificate of final completion.
21. **Setting out of works:** The bidder shall be responsible for the time and proper setting out of all the works and for the correctness of the positions, levels, dimensions and alignment of all parts of the works and for the provision of all necessary instruments, appliances, electricity and labour in connection therewith.
22. **Labour:** The bidder shall make his own arrangements for the engagement of all types of the labour, required for the execution of the job. No workman below the age of 18 years shall be employed on the works. Also, the bidder shall comply with the provisions of all labour laws and the rules framed there under.
23. **Storage at Site:** The bidder shall at his own cost make arrangements for proper storage especially towards Rain and Snow damages of the equipment/ materials at sites till its erection/completion. For the purpose the bidder shall, with the approval of Engineer in charge construct temporary storage accommodation for equipment/ material at site for which land shall be provided by the department near the site of work.

24. **Bidder Death, Becoming Insolvent Or Imprisoned:** In the event of the death or insanity or insolvency or imprisonment of the bidder or where the bidder being a partnership or firm becomes dissolved or being corporation goes into liquidation, voluntary or otherwise, the contract may, in the option of the Engineer-in-charge, be terminated by notice in writing posted at the site of the works.
25. **Watch and Ward of Works:** The bidder shall in connection with the work provide and maintain at his own cost all lights, guards, fencing and watch and ward, when and wherever necessary or required by the Department for the protection of the work or safety and convenience of the Public etc.
26. **Training of Departmental Staff:** The bidder shall arrange, at his own cost and risk, to depute at least one competent Technical Supervisor, to train up to 04 Departmental representatives in the operation and maintenance of the equipment at site. This training shall be for duration of at least (3) three consecutive months and shall commence from the date of successful commissioning of the equipment or as may be mutually agreed upon.  
Two groups of Departmental Engineers shall also be deputed to bidders/manufacturers works for short duration to obtain training free of cost in the operation and maintenance of the equipment, if required by the department.
27. **Final Acceptance:** The equipment/work shall be accepted by the Department only after the system has been tested and has performed satisfactorily in all respects, at site, in accordance with the provisions of the contract.
28. **Drawing and Quality Assurance Plans:** The following details shall be necessarily furnished within Two (02) weeks of the date of placement of this order which shall be approved by the Department within two (02) weeks from the receipt by the consignee.
  - 1) Sectional Drawing of Pumps
  - 2) General Arrangement Drawings (G.A.D.) /Layout of the equipment fully dimensioned for pumps, motors, starters, shunt capacitors, panels, delivery manifold, cables etc.
  - 3) Detailed circuit diagrams of LT Panels, starters, shunt capacitors etc.
  - 4) Third Party Inspection Reports and OEM's test certificates to the Department for their approval.No manufacturing activity shall be started by the firm without approval of the drawings for each ordered equipment/work by the competent authority.  
Additional time consumed due to observations/summary rejection of QAP/GAD shall be considered in the delivery period of the contract and the bidder shall be wholly and solely held responsible for the delay, thus caused.  
Although no make has been specified in respect of any equipment, the bidder shall furnish QAP/GAD of only those makes which are standard with proven record of satisfactory performance in this Department or any other Government Department in the UT or outside. Thus, the bidder shall have to mandatorily furnish a list of makes and technical data for the tendered equipment which the firm intends to supply, in the cover 1<sup>st</sup> of the bid so that the Department is fully satisfied about the quality of the equipment.
29. **Operation and Maintenance Manuals:** The bidder shall supply, free of cost to the Department, six complete sets of operation and maintenance manuals for the Pumping Equipment and Electrical Equipment. The delivery of these manuals shall be made by the bidder to the Engineer along with the supply of equipment. The manuals shall be appropriately bound in book form and shall contain all necessary instructions regarding operation, preventive maintenance, repairs, trouble shooting, overhauling etc.  
The manuals shall also include detailed drawings of the equipment, circuit diagrams and station layout with all items properly identified. The manuals shall also include the spare parts catalogues with part numbers clearly given, which must tally with index numbers in the drawings.
30. **Cleaning Up:** On completion of the works the bidder shall clear away, load into trucks or any other transport and remove from the site all constructional plant, surplus materials, dismantled or otherwise, earth and rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workmanship condition, to the satisfaction of the Department.
31. **Power and Water Supply:** The bidder/firm shall make his own arrangement, at his own cost, for all lines, individual power points, etc. to the machinery and plant required by him for the erection, testing and commissioning of the equipment ordered on him. The bidder shall pay for all electrical energy consumed by him

for this purpose at the prevalent electricity tariff in J&K State. Such charges shall be paid by the bidder/firm direct to the Electricity Corporation and the bidder's final bill shall be settled only after he gets a no outstanding certificate from the Electricity Corporation.

The Government shall not be responsible, and the bidder shall have no claim whatsoever for any interruption in power supply or voltage fluctuation or total cut off at the site. The bidder/firm must provide an alternative source of power, at his own cost, at the site for completion of the work. The bidder shall make his own arrangements for water to be used for the execution/Hydro-testing/ water tightness Test/ Curing, labour colony, Site Office etc.

32. Any incidental works required thereof for fitment of the pipes / allied equipment/works etc. shall be deemed within the scope of work.
33. The drawings for gantry and other ancillary works shall be provided to the executing agency by the I/C engineer.
34. **Agreement:** As soon as letter of award is communicated to the firm, the contract shall be complete and binding upon them, the bidder/firm shall also be required to execute an agreement with the competent authority within **seven days** from the date of issue of letter of award. Failure to execute such an agreement in time shall not however, prevent this contract from being enforced against the firm and the date of delivery of the material/completion of works shall be reckoned from the date of issue of the letter of award in favour of successful firm.
35. All other terms and conditions as laid down in Form No. 25 of P.W.D. shall remain in force and binding on successful tenderer.
36. Any rules/terms and conditions, if not stipulated in the bidding document, shall be strictly dealt in accordance with the relevant rules/guidelines stipulated in the General Finance Rules (GFR 2017) and Manual for procurement of Works 2019 Government of India.
37. **Consignee/Paying Authority:** The consignee/paying authority in respect of electro-mechanical component and allied civil works shall be the concerned **Executive Engineer, Jal Shakti (PHE) Mechanical Division (North) Sopore**

Executive Engineer  
Jal Shakti PHE Mechanical Division (North)  
Sopore

Spore  
firm no

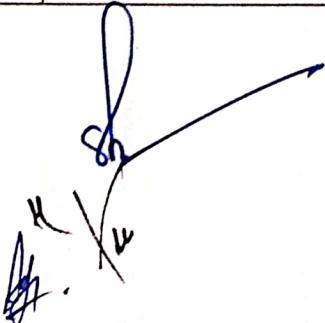
**Annexure "B" Schedule of cost and quantities  
to this office Allotment Order No: PHE/MDNS/DB/1527-24 dated: 12/08/2023**

of work: Various electro-mechanical works to be carried out at WSS Indergam Pattan under IIM

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5-07-26

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No.	Description	Qty.	Unit	Rate	Amount
1	<p>Design, supply, providing, installation, successful testing and commissioning of vertical turbine pumping unit as per IS 1710 driven by VT motor for pumping water of following parameters.</p> <p>A. PUMP</p> <ul style="list-style-type: none"> <li>• Quality of water = Raw water with silt having medium to coarse sand.</li> <li>• Sump/Liner Bed Level = 8m/otherwise specified below from Machine floor level</li> <li>• Water column in liner/sump = 2 m/as specified otherwise above from sump/liner bed level</li> </ul> <ol style="list-style-type: none"> <li>1. Discharge = 12000GPH</li> <li>2. Type = Self water lubricated, VT pump, open line shaft.</li> <li>3. Liquid to be handled = Raw Water</li> <li>4. RPM = 1460</li> <li>5. Head = 40 Meters</li> <li>6. Efficiency = Not less than 50%</li> <li>7. Impeller = Semi-enclosed mixed flow all bronze/stainless steel</li> <li>8. Line shaft/head shaft = Stainless steel</li> <li>9. Length of each line shaft = 1 m maximum</li> <li>10. Total length of line shaft = 10 m/as specified (excluding Head shaft)</li> <li>11. Impeller shaft = Stainless steel</li> <li>12. Line shaft bearing = Cut less rubber/ Neoprene rubber</li> <li>13. Line shaft coupling = Stainless steel</li> <li>14. Suction Strainer = MS fabricated</li> <li>15. Suction Bowl/Bell mouth= Cast Iron</li> <li>16. Pump Bowl = Cast iron</li> <li>17. Column pipe = Mild Steel of wall thickness not less than 8mm flanged type in assorted lengths</li> </ol>				
	<p>18. VT Pump to be designed with minimum number of stages.</p> <p>B. Prime Mover</p> <ol style="list-style-type: none"> <li>1. Type = Vertical hollow shaft, AC induction</li> <li>2. Power Supply = 03 Phase, 415V± 10% AC</li> <li>3. Frequency = 50Hz±3%</li> <li>4. RPM = 1450 Synchronous</li> <li>5. HP = Corresponding to Head and discharge but not less than 20HP.</li> <li>6. Efficiency = Not less than 90%</li> <li>7. Class of insulation = F or above</li> <li>8. Type of duty = Continuous</li> <li>9. Type of rotor = suitable among single squirrel cage / double squirrel cage , single or double skewed squirrel cage.</li> <li>10. GD2 = suitable for above parameters.</li> <li>11. Motor thrust bearing = Anti friction ball /roller bearing</li> <li>12. Method of starting = star/delta</li> </ol> <p>The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>C. Accessories</p> <ul style="list-style-type: none"> <li>• Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc as per standard specification besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.</li> </ul> <p>Note: Providing of test certificate &amp; Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before procuring.</p>	2	Job	6,40,000.00	12,80,000.00



Fed operational voltage = 415V  
 Ultimate S.C Breaking Cap.  
 at (415V AC, 50 Hz) = 25kA  
 3Ø Motor Protection &  
 Digital Motor Protection &  
 Protection pro\*  
 Phase\*  
 Ro\*  
 3Ø

S. No.	Description	Qty.	Unit	Rate	
1	<p>Supply, Installation, Testing &amp; Commissioning of 12000gph, 40m head, 20 HP Open Well Pumping Units as per IS 14220 at Filter Water Stage.</p> <p>PUMP:</p> <ul style="list-style-type: none"> <li>Type of pump : Open well Submersible Pump (Horizontal)</li> <li>Quality of Water to be handled : Filter water/Raw water</li> </ul> <p>MATERIAL OF CONSTRUCTION:</p> <ul style="list-style-type: none"> <li>Pump Casing : Cast Iron</li> <li>Impeller : SS</li> <li>Pump Shaft : Stainless Steel 410</li> <li>Motor Body : Cast Iron/SS</li> <li>Sealing : Dual mech. seal</li> </ul> <p>The bowl plate shall be provided with name plate giving complete specifications</p> <p>MOTOR:</p> <ul style="list-style-type: none"> <li>Method of starting : Star – Delta/DOL</li> <li>Frequency : 50Hz + 3%</li> <li>Voltage : 415 + 15 %, 03 phase</li> <li>Class of insulation : Suitable for above rating.</li> <li>Motor Rating: Corresponding to head and discharge not less than 20HP</li> </ul> <p>Sealing: Dual Mechanical Seals (01 No) and Bearings (02 No) for each pumping unit must be provided as spare parts.</p> <p>Note: The motor shall be made of corrosion resisting materials to resist corrosion under normal conditions and the motor shall have a name plate giving complete specifications</p> <p>Dual Mechanical Seals (01 No) and Bearings (02 No) for each pumping unit must be provided as spare parts for preventive maintenance by the firm.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p>				
2	<p>2</p> <p>Job</p> <p>1,01,726.00</p> <p>2,03,452.00</p>				
3	<p>Fabrication of gantry mechanism by way of providing steel structure in built up sections , trusses and framed work, including cutting , hoisting , fixing in position and applying a priming coat of approved steel primer all complete welded including, providing, fitting of base frame for pumping units , covering of holes , ladder ,DG set covering, HT/Lt transformer Bed with gantry fabricated out of ISMC/ISMB/ISA/Bars/MS Pipe/MS plain-chequred Sheets. Including making of holes in concrete, including metal primer 1 coat and two coats of approved shade . The works is to be executed as per site requirement and as per dimentions of Pumping unit and as per directions of site engineer.</p>	1250	Kg.	135.00	1,68,750.00
4	<p>Fabrication Providing and fitting of modular control panel as per the below mentioned technical specification. The technical details/ Ratings of various components of Modular Control Panel are given Below</p> <p>a. Main Circuit Breaker (Incommer MCCB) of rating = Thermal release range 160-200A with S.C. Breaking Capacity of 50kA=(02No's)</p> <p>b. Changeover Switch of rating = 100Amp (01No.),</p> <p>c. Bus Bar copper =100A (01No.)</p> <p>d. Motor Breakup Protection MCCB of rating = Thermal release range 100-125A With S.C. Breaking Capacity of 36kA =(02No's)</p> <p>e. FASD starters: Motor rating 3-phase 415V, 50HZ AC-3 Duty with Relay range of 30-50 Amp (02No's)</p> <p>f. Auxillary MCB for f.Heating/Lighting = 63 Amp.(01No.) Rating = 10- 15 HP Power Specs = 3 Ø, 415 + 15% V, 50 + 3 % Hz. Relay range = 11- 18 A.</p> <p>Protection = Under voltage/ over Voltage</p> <p>Qty = 02 No's</p> <p>f) Auxiliary MCCB for Heating/Lighting:      Circuit Breaker = MCCB (Outgoing)      Qty. = 1 No.      No. of poles = 4P      Current Rating = 63 Amp.</p>	2	Job	2,34,576.00	4,69,152.00

	Description	Qty.	Unit	Rate	Amount
	<p>Rated operational voltage = 415 V + 15 %  Ultimate S.C Breaking Cap.  at (415V AC, 50 Hz) = 25 KA</p> <p>g) Motor Protection Relay:  Digital Motor Protection Relay with LCD Display for 3-phase supply with following protections suitable for the Modular Control Panel:-  Protections = Thermal Overload with pre-alarm, Short Circuit, Phase Loss, Unbalance, Phase reversal, Under Current, Prolong starting, Locked Rotor &amp; Earth fault and over current  Qty. = 02 No's (01 No. for each starter)</p> <p>h) M-power module for mobile starter for submersible motor 1P/3P 3 wire  Quantity - 02 no.  IVRS Languages – English , Hindi,  Suitable Region- North India  The panel shall be provided with phase indicators (03 NO) and digital ammeter of range 0-60 A, digital voltmeter of range 0-500 V, and digital frequency meter (01 No each) of make L&amp;T/AE/Rishabh. The enclosure of the panel shall be of excellent fit and finish, corrosion resistant and powder coated gliding hinges for smooth and noiseless movement of windows and advanced locking arrangements.</p>				
5	<p>Providing, fitting, testing and commissioning of manually operated copper wound, 3-phase, AC power supply multi step voltage stabilizer.  Rating: 50KVA  50KVA voltage stabilizer as per specifications below:  Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step.  Type of Regulator : Double plate type with electrolytic copper contacts.  Input voltage :250-400 volts.(3 phase)  Output voltage :400 ±10% volts.  Frequency :50 ±3 C/S.  Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried.  Insulation : Fiber glass insulations to tested parameters.  Cooling :Naturally, Oil cooled  Temp. Rise (Max):30°C above ambient  Mounting :On Uni-directional wheels.  Correction rate :30 volts per step  Wave form distortion :virtually nil  Duty cycle :100% continuous.  Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.  Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.  Load : Three phase induction motor load.  Load Amperes (continuous)</p>	2	Job	1,07,401.00	2,14,802.00
	<p>Overload in 24-hours operation: 10% above continuous Ampere rating.  The voltage stabilizer shall have T-oil level indicator gauge preferably glass type tube or otherwise visible to naked eye. The top of the container to have a display panel for housing 02 numbers Digital voltmeters (0-500V) along with 4-way selector switch and set of neon indicators for incoming and outgoing phases (06 No's).  Insulating media (T. Oil) of 11 KVA grade to be provided and filled up to top level, with dielectric strength of 5 KV at 4m air gap. The T-Oil of specific grade should be provided in separate barrels and filled at site up to top level.  The voltage Stabilizer shall be accepted with manufacturers duly stamped test certificate and shall have name plate with specifications.  Manufacturers test certificate to be appended and rest of specification</p>				

S. No.	Description	Qty.	Unit	Rate
6	<p>Providing, installation and testing of 2 Ton Capacity manual type triple spur gear chain pulley block along with monorail geared travelling trolley having following features</p> <p>Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears.</p> <p>Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collared, tested and have adequate built factor of safety for safer operation.</p> <p>Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below:</p> <ul style="list-style-type: none"> <li>i. Make = Reputed make</li> <li>ii. Capacity = 2 ton</li> <li>iii. No. Of load chain falls = 2 or above</li> <li>iv. Min. Height of lift = 6 M</li> </ul>	1	Job	44,473.00 44,473.00
7	<p>Providing/supplying and fitting of 125 mm G.I flanged Rising Main Including delivery manifold with washout arrangement at site. The Pipe shall be hot dip Galvanized, class B conforming to IS 1239. The job includes providing and fitting of M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16). The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make. Flanges (as per IS 6392/1997 Table:17) Thickness shall conform to IS 6392 Part 1st Table-17.</p> <p>Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint.</p> <p>Welding Electrode: DC Arc Welding using welding electrode having diameter not less than 4mm.</p> <p>Nuts and Bolts: Nuts and Bolts (conforming to IS:1363 Part 1st)</p> <p>Rubber Insertion Gaskets: Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints.</p> <p>The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.</p>	250	Meter	2,485.00 6,21,250.00
8	<p>Providing and fitting of 125mm GI bend with flanges The Flanges shall be MS conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes providing and fitting of nuts, bolts, gaskets etc as per site requirement.</p>	14	Job	5,142.00 71,988.00
9	<p>Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units .</p> <p>The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber(Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions</p> <p>It shall have electrostatic epoxy coating(approved for drinking water) both inside and outside of the valve.</p> <p>The valve shall be supplied along with hand wheel.</p> <p>Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work.</p> <p>The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p> <p>Size: DN150mm PN:1.6/16</p>	6	Job	22,321.00 1,33,926.00
10	<p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve( NRV) as per IS 5312.</p> <p>The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions.</p> <p>It shall have electrostatic epoxy coating (approved for drinking water) both inside and outside of the valve.</p> <p>Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work.</p> <p>The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with Rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p> <p>Size: 150mm PN: 1.6/16</p>	5	Job	26,790.00 1,33,950.00
11	<p>Fabrication, providing and fitting of split type MS clamps 12 mm thick, 2.5 ft long and 3 inch wide for lowering and holding of VT pumping unit fitted. The job includes the cost of required size of nuts and bolts.</p> <p>Size: 150/As per site requirement.</p>	4	Job	3,200.00 12,800.00

	Description	Qty.	Unit	Rate	Amount
12	<p><b>Electric Sub Station</b></p> <p>Supply , installation , commissioning and creation of pole mounted, outdoor type 100 KVA Electric Sub Station as per the technical specifications given here under -</p> <p>Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals:</p> <p>Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc.</p> <p>Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge.</p> <p>Transformer Coils: Suitable number of HT and LT coils in each leg of the core. The transformer coils shall be fabricated out of superior quality aluminum wire/strips, properly wound. The HT transformer is completely filled with suitable grade transformer oil up to required level. The job includes carriage, and all leads and lifts involved.</p> <p>The HT transformer shall be of reputed make from an ISO certified company as per relevant standards and a test certificate shall be provided before installation. The transformer shall also be provided with breather fill with silica gel crystals, conservator with oil level indicator, explosion vet and adequate radiator fins/ Tubes. The impedance of transformer shall be as per IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>NOTE: The scope of the work shall include obtaining of necessary inspection/clearance certificate from the concerned department for all the required equipment. The testing and commissioning shall be completed only after obtaining above certificate</p>	1	Job	2,09,945.00	2,09,945.00
13	Supply, installation, erection of 9 mtrs long H.T pipe of specifications ST- 410 (sp-33) . The job further includes drilling of holes for installation of various accessories .wherever required the job further includes G.I wire earthing of pole as per REC standard.	8	Job	20,686.00	1,65,488.00
14	Cement bottoming 1.2.4 mix as per REC mix as per REC standards 0.5 cum/pole	8	Job	3,539.00	28,312.00
15	P/F of Galvanized nuts, bolts of various sizes as per site requirement	60	Kg	142.00	8,520.00
16	G.I Barbed wire for Anti Climbing with fixtures as per site requirement.	40	Kg	136.00	5,440.00
17	P/F Danger Plate with clamps	8	No	153.00	1,224.00
18	Wedge connectors/PG Clamps as per site requirement.	12	No	421.00	5,052.00
19	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes/GI V cross-arm with top braket including clamps	1200	Kg	123.00	1,47,600.00
20	Supply, Installation, Testing and commissioning of Polymeric Gang operated Air break switch, outdoor type, triple pole, suitable for vertical installation, single break provided with locking arrangement at both ON and OFF position consisting of HT post double insulator, copper or copper alloy high pressure heavy contact assembly, rod with bearings , operating handle and 2 length of 32mm dia. GI pipe conforming to IS 1818 1961, 06 No. of insulators, rated voltage 11KV 200A complete as per IS specs.	2	Set	11,730.00	23,460.00
21	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation	1	Set	4,983.00	4,983.00
22	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type	1	Set	7,754.00	7,754.00
23	Supply and fitting of 11 KV polymeric composite disc insulator 12 KV, minimum falling load 45KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm.	3	No	596.00	1,788.00
24	Supply and fitting of 11 KV polymeric composite pin insulator 12 KV, 5KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm	25	No.	347.00	8,675.00
25	Painting of poles Red oxide	8	Liter	306.00	2,448.00
26	Painting of poles Aluminum paint	8	Liter	510.00	4,080.00
27	Sundry items like aluminium lugs,jumpers, binding tape.	1	LS	1,755.00	1,755.00
28	<p>Earthing of substation --Excavation of earth pit of dia 650 mm &amp; depth 3000 mm, installation of Earthing pipe of 40 mm</p> <p>Nominal bore &amp; 4mm wall thickness &amp; length 2.5 mtr long as Per IS 1239.GI Strip for neutral earthing of size 25 mm x 3 mm for connection of transformer body,neutral,G.O Set, lightening arrestor, LT Control Panel and voltage stablizer as per IS 2629/85, GI nuts &amp; bolts,refilled with earth enhancement materials and earth Chamber made of brick masonry with RCC slab cover.</p>	9	Job	10,462.00	94,158.00
29	P/L of ACSR conductor of size 0.05 as per the relevant IS standard as per clause 78 /as per site requirement	400	Meter	60.00	24,000.00
30	<p>Providing and fitting of LT Distribution box for HT transformer with MCCB For incomer and SFU for outgoing circuits.</p> <p>Capacity of transformer: 100 KVA</p> <p>The job includes providing and fitting of required size cable, thimbles,clamps and fixtures etc required for the job.</p>	1	Job	39,422.00	39,422.00
31	Galvanised stay set with 50x8mm stay clamp, guy insulator(02No.),anchor plate(200x200x6mm),nuts and bolts,2No. Turnuckles,1.8m long,16mm diameter solid GS stay rod and 7/3.15mm dia GI standerd wire complete.	2	Set	4,922.00	9,844.00
32	Supply, Installation, testing and commissioning of 3-phase, 4-wire Trivectometer with suitable ring type CT complete unit as per latest IEC Standard.The required size cables for input and output connections (as per site requirement) with all allied accessories, transportation charges, labour component,earthing etc are included in the job.	1	Job	27,000.00	27,000.00
33	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	1	Unit	7,350.00	7,350.00

S. No.	Description	Qty.	Unit	Rate
34	<p>Electrification and illumination of pump house by way of providing &amp; fitting Eight No. of lighting points and Two No. of heating points viz:</p> <ul style="list-style-type: none"> <li>a) Wiring to lighting points with 1.5 Sq mm and heating points with 2.5 Sq mm PVC single core multi-stranded copper conductor insulated, unsheathed 1.1 KV grade ISI marked with length as required upto control panel as per site requirement.</li> <li>b) PVC conduit/ channel 1.5" and 1" to be fitted on walls of pump house as per site requirement. c) Eight No. of Bulb holders (angle type or any other type) with eight No. of 12Watt LED bulbs .</li> <li>d) Modular Switch boards with frame to be fitted on walls of pump house consisting of ISI marked items like 10A switches, indicator, 03 pin flash type socket for lighting (As per requirement) and combined 16A switch and 05 pin flash type socket(02No)for heating .</li> </ul> <p>The job includes cost on account of material, skilled labour, tools and tacks, including screws, cement nails, rawl plugs and other consumable items as per site requirement.</p>	1	Job	28,000.00
35	<p>Illumination of Premises.</p> <p>Providing and erection of 9 Mtr long Hot Dip Galvanized octagonal pole (single Section) with bottom 150mm, top 75mm wide, thickness 3mm with 70 Microns Zinc coating having inside arrangement for providing of power connection along with following items.</p> <ol style="list-style-type: none"> <li>1) 3 Way Terminal Connector 20 Amp.</li> <li>2) 3 No MCB 8 Amp.</li> </ol> <p>The job includes fabrication, providing and fitting of three arm GI structure at the top having 120° angle between arms and each arm having 15° inclination with respect to horizontal plane. Each arm should be of 2' length and size and shape appropriate as per requirement of the luminary.</p> <p>The job also includes providing and fitting of required length of flexible multi strand 2 mm copper wire from each terminal connector to each holding arm.</p> <p>The pole is mounted on 1:2:4 Cement concreting of size not less than 2'x2'x6" (cost of concreting not included in the job) using 04 No anchor bolts of required size not less than 7" in length. The complete job includes earthing in GI Electrode as per relevant IS Code</p>	1	Job	22,226.00
36	<p>Providing, Installation and testing of 2KVA fully automatic copper wound voltage stabilizer with input voltage 70-240 V and output 220 V. The stabilizer shall be installed and connected to the electric circuit as per location provided by site in charge.</p>	1	Job	8,154.00
37	<p>Providing, installation, testing and commissioning of area lighting 120 Watt LED (Street Light Type) on top of octagonal pole vide item No.36</p> <p>Having following specs:</p> <p>Input: 90-240 V 50 Hz  Power Factor: &gt;0.9  Colour Temperature: 4K - 6.5K  Beam Angle: 120° - 170°  Lumens: &gt;12000  Operating Temperature: -20°C to 60°C</p> <p>The LED is pressure die cast aluminum housing with power coated finish and having Ingress Protection up to IP-68.</p> <p>The LED is properly fitted on the arm of the pole and connected to the copper wire as provided in the high mast pole</p>	3	Job	9,486.00
38	Fabrication of 6'x3' (2No's) angle iron beds having 2' height using 50x50x6mm angle iron by way of providing and fitting of Structural steel in built up sections , trusses and framed work, including cutting , hoisting , fixing in position and applying a priming coat of approved steel primer all complete welded	82	Kg.	135.00
39	Providing and fitting of 19mm Ply wood board to be fitted on the angle iron beds.The job includes cutting and fixing of Ply wood on angle iron beds for resting.	36	Sft	154.00
40	Providing and fitting of 400mm ISI Marked sweep wall fan	1	No.	3,600.00
41	<p>Providing of good quality convenience and utility items</p> <ul style="list-style-type: none"> <li>a) Providing of good quality bedding for night stay/Shift consisting of:-</li> <li>i) Mattress with warm cover size 6'x3' (6Kg)- 02 No's</li> <li>ii) Quilt with warm cover size 5'x8' (6Kg)- 02 No's</li> <li>iii) Pillows with covers - 02 No's</li> <li>iv) Single bed warm blankets with one sided Fur- 02 No's</li> </ul> <p>The filling material for mattress, quilt and pillow shall be of good quality cotton</p> <p>b) The job also includes providing of pressure cooker 5ltr 02 No's, Steel patella(utensil) 5ltrs 02 No's, cooking heater 01 No., room heater 01 No., steel buckets 10 litre capacity 01 No., Plastic bucket 10 litre capacity with Mug 02 No's each, steel glasses 06 No's, steel Plates with large spoons and bowls 03 No's each, Cup and Saucer set (01 No. Set) and, 5kg Gas cylinder with burner/ stove. The job also includes providing of thermo-cool 15'x12' along with excel matting of 15'x12' size. The job also includes providing of unbreakable Plastic Chair table set consisting of chairs 04 No's, extra heavy Table 01 No. The job also includes providing of good quality safety Door locks (03 No's) of Godrej, Link locks,</p>	1	Job	39,619.00

	Description	Qty.	Unit	Rate	Amount
42	<p><b>TOOL KIT For Maintenance:-</b></p> <p>The Tool Kit for maintenance shall comprise of the following and all the items as mentioned below shall be of Providing of tool kit consists of following items</p> <ul style="list-style-type: none"> <li>i. Double ended Spanner (Chrome plated) 02 sets complete</li> <li>ii. Double ended Ring spanners chrome plated 02 sets complete</li> <li>iii. Allen key set black finish 02 sets complete</li> <li>iv. Combination Pliers insulated with thick C.A sleeve, size in mm 165, 210, 255 each – 02 No.</li> <li>v. Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No.</li> <li>vi. Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No.</li> <li>vii. Insulated screw Drivers Blade length in mm Blade dia. in mm Tip dimensions in mm Quantity 50 3 1.6 x 0.4 02</li> <li>75 3 1.6 x 0.4 02</li> <li>100 3 3 x 0.4 02</li> <li>125 3 5 3.5 x 0.5 02</li> <li>150 3 5 3.5 x 0.5 02</li> <li>200 4 4 x 0.6 02</li> <li>300 5 5 x 0.8 02</li> <li>viii. Hammer with handle weight – 110 mg, 340 gm , 600 gm –each – 1No. .</li> <li>ix. Heavy duty pipe Wrench length in mm - 200, 300, 600 each – 01 No.</li> <li>x. Electric Multimeter=1No</li> <li>xi. Digital multimeter – 1No.</li> <li>xii. Digital Clamp tester capable to measure up to 400A - 1 No.</li> <li>xiii. Hack saw frame with hack saw blade – 01 no.</li> <li>xiv. S.16 MXL S. 16 H X L Socket Set (19 sockets + 6 Accessories) – 01 No</li> </ul>	1	Job	28,840.00	28,840.00
43	Supply, installation, Testing & commissioning of 1000VA Full Sine wave power inverter including Providing / Installation of 12V, 180AH Tubular inverter Battery with trolley and cover. with 2-core 4 mm <sup>2</sup> Cu ( 25 m) wiring as per site requirement along with other accessories like SS- Combine (02 No's), 3-pin plugs etc of reputed make for proper fitment and installation of the item.	1	Job	34,053.00	34,053.00
44	Supply, installation of 6 kg CO <sub>2</sub> type fire extinguisher manufactured as per IS: 15683 of 2006 with IS mark and comply with DGMS (Approval). The co <sub>2</sub> extinguisher should be suitable for class B & C fire and also for fire involving electrical equipment. The cylinder used for fire extinguisher shall be approved by petroleum and explosive safety organization (PESO) as per gas cylinder rules 2004 and as per IS: 7285 of 2004. The body should be made of seamless steel (manganese) confirming to IS: 7285 with IS mark and should be provided with squeeze grip nozzle and should be filled with co <sub>2</sub> confirming to IS: 15222 of 2002 with certificate. The extinguisher shall be provided with manufacturers test certificate and hydraulic test certificate by BIS from PESO.	2	Job	6,447.00	12,894.00
45	<p>Providing, laying &amp; fixing with adhesive/bonding material of insulation rubber mats on the floor of the pump house, covering area around electro-mechanical machinery for safeguarding the life &amp; limb of the workmen due to possible leakage of current &amp; short circuit. The floor surface shall be made good &amp; shall be free from dust, grease, foreign material &amp; moisture free. The mats shall be as per IS 15652:2006 &amp; shall have the following specifications:-</p> <p>Composition: Rubber (synthetic mats for electrical purpose) Thickness: - 2.5mm Size: - 1M wide.</p> <p>The rubber mats shall be accepted with manufacturers test certificate.</p>	10	Meter	1,205.00	12,050.00
46	<p>Providing and Fitting of 70 sqmm, 3.5 core LT 1.1 KV, XLPE Armoured Aluminium Cable conforming to IS: 7089 part 1st as service line from the HT transformer to control panel including necessary thimbling, crimping, taping etc.</p> <p>NOTE:- The cable terminal ends for connection to switchgear at various requisite points shall be Al. Thimbles of reputed make and of appropriate size and connected by hydraulic crimp tool only.</p>	100	Meter	780.00	78,000.00
47	Providing and Fitting of 10 sqmm, 1.1KV 2 core PVC Insulated Sheathed 2 Core copper cable for connecting Lighting pole with power supply conforming to IS: 694:2010.	40	Meter	260.00	10,400.00
48	Providing and fitting of 3-Core flat 16sq.mm submersible copper cable conforming to IS: 694 (Part 1st) – 1964 & IS: 694 (Part 2nd) - 1964 for Submersible Pumping Unit and other electrical Equipments . The cable connections terminal shall be fitted with copper thimbles of required size.	90	Meter	711.00	63,990.00
49	<p>Providing and fitting of 25 sq mm PVC insulated copper cable as per IS 694- along with thimbling as per requirements</p> <p>The job includes providing and fitting of suitable rating copper thimbles duly crimped and taped at conductor ends by hydraulic crimping tool. The job includes earth work in excavation wherever required for laying of cable underground.</p>	180	Meter	394.00	70,920.00

S. No.	Description	Qty.	Unit	Rate	Amount
50	<p>Providing, construction, installation, fitting, commissioning of Pre fabricated GI sandwich Thermo Cole panel/PUF panel, Fiber Reinforced Plastic constructed toilet block toilet super structure, flooring of fiber cement board with Bio digester and super structure shall have the General specifications.</p> <p>On site constructed / Factory made</p> <p>Single unit / panelled form as per site requirement Easy to maintain and clean</p> <p>All weather protection Well ventilated</p> <p>Shall have no effect on natural climaty with regard to Effluent drawn out</p> <p>Shall be feasible for operation under -15-degree Celsius temperature.</p> <p>Technical Specifications for onsite constructed / Prefabricated GI sandwich Thermo cole panel/PUF panel toilet super structure Toilet Block clear Size – 4ft x 4ft x 8ft</p> <p>Material – Pre fabricated GI sandwich Thermo Cole panel/PUF panel, Fiber Reinforced Plastic constructed toilet block toilet super structure, flooring of fiber cement board Desired Features of toilet block:</p> <p>Tiles –up to 3ft on inside walls or as material of construction Floor – Tiles or as material of construction</p> <p>Paint on outside walls &amp; inside walls as per material of construction</p> <p>Western Toilet Seat all made of ceramic (as per requirement)</p> <p>Taps &amp; Flushing system - Water tap at a nominal height of minimum 13 inches for Orissa Pan.</p> <p>Flushing system</p> <p>Electric Wire to connect the bulb</p> <p>Stand for water tank – Mild Steel of ISA 40 x 40 x 5 mm with CGI roof and proper frost protection during winter.</p> <p>Door – PVC / Al / FFR any other water proof material</p> <p>Water tank Capacity -300 liters to be placed on top with suitable frame of HDPE (with an openable lid) for the supply of water pipe to be provide and fitted from rising main up to toilet.</p> <p>Hand washing basin with Tap, soap case, tissue paper holder, jet spray fitted in side etc.</p> <p>Technical Specifications for Sanitation Unit for Solid waste management (Bio Digester)</p> <p>Capacity of Bio digester- 900 Ltr.</p> <p>Design - With four chambers to ensure long hydraulic retention time</p> <p>Construction of Bio Digester – UPVC / On site concrete constructed /any other chemically inactive material.</p> <p>Catalyst – Highly effective Bio Catalyst.</p> <p>Inoculum - The cocktail of bacteria duly certified by DRDE of 30 % of the volume of the digester</p> <p>Bio digester Lining – Inert vulcanized 1.0mm thick Butyl/EPDM rubber CE Marked and non-woven geo textile for bacteria retention</p> <p>Thickness of Lining – 2mm</p> <p>Material of Portion waffle – concrete / any other chemically inactive material</p> <p>Lifting – lugs</p> <p>3 – 4 people usage every day.</p> <p>Further job includes all types of works like earth work excavation for bio digester, carriage, transportation, handling, pipes for inlet connection for tank, other pipes etc. for disposal of effluents as per latest Govt. norms, electric connection, lock etc.</p>	1	Job	1,49,600.00	1,49,600.00
	<p><b>Total advertised/estimated cost:</b></p> <p><b>Percentage quoted by L1 firm {-4%}</b></p> <p><b>Total allotted cost: Rupees Fourty Five Lakh Ninty Eight Thousand Six Hundred and Fourty Eight Only</b></p>			47,90,259.00	1,91,610.36
				45,98,648.00	

Executive Engineer  
 Jai Shakti (PHE) Mechanical Division (North)  
 Sopore

No.: PHE/MDNS/DB/3519-26  
Dated: 12-08-2023

M/s Mawadat Electricals  
Patawaw Budgam  
GST No: 01FLEPM9317Q1ZM  
Cell No: 7006792132

Adv. Cost:	Rs 33.271 Lacs
Allotted Cost:	Rs 31.275 Lacs

Subject: Various electromechanical works to be carried out at WSS Chanderhama under JJM.

- Reference: 1. This office e-NIT No.: e-NIT No. 04 of 2023-24, S. No. 04 issued under endorsement No.: PHE/MDNS/DB/274-86, dated: 19-04-2023.  
2. Authorization awarded by Member Secretary DJJM Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Baramulla/Bandipore HQ at Sopore issued vide No. SE/Hyd/DB/4268-61, dated: 15-07-2023.

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Dear Sir,

For and on behalf of Lt. Governor of J&K U.T contract for execution of "Various electromechanical works to be carried out at WSS Chanderhama under JJM" is hereby awarded to your firm on the quoted/negotiated rates, as per 'General Terms & Conditions' and 'Schedule of cost and quantities' annexed herewith as under:

Annexure A: General Terms & Conditions.

Annexure B: Schedule of cost and quantities.

Encl. leaves

  
Executive Engineer  
Jal Shakti PHE Mechanical Division (North)  
Sopore

Copy to the:

- Chief Engineer Jal Shakti (PHE) Department Kashmir, Srinagar for favour of information.
- District Development Commissioner Srinagar, for favour of information.
- Superintending Engineer Jal Shakti (PHE) Mechanical Circle (North) Srinagar, for favour of information.
- Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Srinagar HQ at Sopore, for favour of information.
- Executive Engineer Jal Shakti (PHE) Division Blue, for favour of information.
- Provisional Head, TPIA JJM Kashmir, (WAPCOS Limited) Corporate Office 76-C Institutional area Sector-18 Gurugram-122015 (Haryana) for favour of information.
- Assistant Executive Engineer Jal Shakti (PHE) Mechanical Sub-Division Blue for information & necessary action.
- File concerned.

Annexure "B" Schedule of cost and quantities  
to this office Allotment Order No: PHE/MDNS/DB/5519-26, dated: 12/18/2023

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*work: Various electro-mechanical works to be carried out at WSS Chanderhama under JJM*

No.	Description	Qty.	Unit	Rate	Amount
1	<p>Supply, installation, testing and commissioning of 8000GPH, 40m head Horizontal pumping unit as per IS 1520 with following specification:-</p> <p><b>Pump:</b></p> <ul style="list-style-type: none"> <li>1. Type :- Horizontal Multi Stage 1440RPM</li> <li>Material of construction</li> <li>1. Impeller:- S. Steel</li> <li>2. Shaft:- SS410</li> <li>3. Pump casing:- Cast Iron</li> </ul> <p>The pump shall confirm to IS-1520 code</p> <p><b>MOTOR :-</b></p> <ul style="list-style-type: none"> <li>A) Type :- Horizontal squirrel cage Induction Type</li> <li>B) Rating:- Suitable for above parameters.</li> <li>C) No of phases: 3 phase 415 V+10%,50 Hz, AC supply</li> <li>D) Winding:-Copper wound squirrel cage</li> <li>E) Type of enclosure:-SPDP/TEFC</li> <li>F) Method of cooling:- Air cooled with fan mounted</li> <li>G) Method of Starting: star delta</li> <li>H) Motor Rating: Suitable for above parameters not less than 15HP</li> </ul> <p>The pump-motor should be mounted on a common base frame fabricated out of M.S channel of suitable size and duly fitted with T- type foundation bolts /nuts and washers to make the pumping unit vibration free. The pump and motor should be coupled through suitable coupling. The coupling faces checked for both angular and axial alignment with the help of tapered gauges/feeler gauges or dial indicator. Job includes testing and commissioning of pumping unit on full load at site.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and pumping unit is to be approved from the concerned Sub Divisional office before procuring</p>	2	Job	1,65,155.00	3,30,310.00
2	<p>Supply, Installation, Testing &amp; Commissioning of 8000gph, 40m head, 10 HP Open Well Pumping Units as per IS 14220 at Filter Water Stage.</p> <p><b>PUMP:</b></p> <ul style="list-style-type: none"> <li>• Type of pump : Open well Submersible Pump (Horizontal)</li> <li>• Quality of Water to be handled : Filter water/Raw water</li> </ul> <p><b>MATERIAL OF CONSTRUCTION:</b></p> <ul style="list-style-type: none"> <li>• Pump Casing : Cast Iron              • Impeller : SS</li> <li>• Pump Shaft : Stainless Steel 410    • Motor Body : Cast Iron/SS</li> <li>• Sealing : Dual mech. seal</li> </ul> <p>• The bowl plate shall be provided with name plate giving complete specifications</p> <p><b>MOTOR:-</b></p> <ul style="list-style-type: none"> <li>• Method of starting : Star – Delta/DOL              • Frequency : 50Hz + 3%</li> <li>• Voltage : 415 + 15 %, 03 phase              • Class of insulation : Suitable for above rating.</li> <li>• Motor Rating: Corresponding to head and discharge not less than 10HP</li> </ul> <p>Sealing: Dual Mechanical Seals (01 No) and Bearings (02 No) for each pumping unit must be provided as spare parts.</p> <p>Note: The motor shall be made of corrosion resisting materials to resist corrosion under normal conditions and the motor shall have a name plate giving complete specifications</p> <p>Dual Mechanical Seals (01 No) and Bearings (02 No) for each pumping unit must be provided as spare parts for preventive maintenance by the firm.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p>	2	Job	54,108.00	1,08,216.00
3	<p>Fabrication of gantry mechanism by way of providing steel structure in built up sections , trusses and framed work, including cutting , hoisting , fixing in position and applying a priming coat of approved steel primer all complete welded including, providing, fitting of base frame for pumping units , covering of holes , ladder ,DG set covering, HT/Lt transformer Bed with gantry fabricated out of ISMC/ISMB/ISA/Bars/MS Pipe/MS plain-chequred Sheets. Including making of holes in concrete, including metal primer 1 coat and two coats of approved shade . The works is to be executed as per site requirement and as per dimentions of Pumping unit and as per directions of site engineer.</p>	1250	Kg	135.00	1,68,750.00

S. No.	Description	Qty.	Unit	Rate
4	<p>Fabrication Providing and fitting of modular control panel as per the below mentioned technical specifications. The technical details/ Ratings of various components of Modular Control Panel are given Below</p> <p>a. Main Circuit Breaker (Incommer MCCB) of rating = Thermal release range 160-200A with S.C. Breaking Capacity of 50kA-(02No's)</p> <p>b. Changeover Switch of rating = 100Amp (01No) ,</p> <p>c. Bus Bar copper =100A (01No )</p> <p>d. Motor Breakup Protection MCCB of rating = Thermal release range 100-125A With S.C. Breaking Capacity of 36kA -(02No's)</p> <p>e. FASD starters: Motor rating 3-phase 415V, 50HZ AC-3 Duty with Relay range of 30-50 Amp (02No's)</p> <p>f. Auxiliary MCB for f Heating/Lighting = 63 Amp.(01No.) Rating = 10- 15 HP Power Specs = 3 Φ, 415 + 15% V, 50 + 3 % Hz. Relay range = 11- 18 A. Protection = Under voltage/ over Voltage Qty = 02 No's</p> <p>f) Auxiliary MCCB for Heating/Lighting: Circuit Breaker = MCCB (Outgoing) Qty. = 1 No. No. of poles = 4P Current Rating = 63 Amp. Rated operational voltage = 415 V + 15 % Ultimate S C Breaking Cap. at (415V AC, 50 Hz) = 25 KA</p>	2	Job	2,34,576.00 4,69,152.00
5	<p>g) Motor Protection Relay: Digital Motor Protection Relay with LCD Display for 3-phase supply with following protections suitable for the Moduar Control Pannel:- Protections = Thermal Overload with pre-alarm, Short Circuit, PhaseLoss, Unbalance, Phase reversal, Under Current, Prolong statrtng, Locked Rotor &amp; Earth fault and over current Qty. = 02 No's (01 No. for each starter)</p> <p>h) M-power module for mobile starter for submersible motor 1P/3P 3 wire Quantity – 02 no. IVRS Languages – English , Hindi, Suitable Region- North India The panel shall be provided with phase indicators (03 N0) and digital ammeter of range 0-60 A, digital voltmeter of range 0-500 V, and digital frequency meter (01 No each) of make L&amp;T/AE/Rishabh. The enclosure of the panel shall be of excellent fit and finish, corrosion resistant and powder coated gliding hinges for smooth and noiseless movement of windows and advanced locking arrangements.</p> <p>Providing, fitting, testing and commissioning of manually operated copper wound, 3-phase, AC power supply multi step voltage stabilizer.</p> <p>Rating: 50KVA</p> <p>50KVA voltage stabilizer as per specifications below:</p> <p>Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step.</p> <p>Type of Regulator : Double plate type with electrolytic copper contacts.</p> <p>Input voltage :250-400 volts.(3 phase)</p> <p>Output voltage :400 ±10% volts.</p> <p>Frequency :50 ±3 C/S.</p> <p>Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried.</p> <p>Insulation : Fiber glass insulations to tested parameters.</p> <p>Cooling :Naturally, Oil cooled</p> <p>Temp. Rise (Max):30°C above ambient</p> <p>Mounting :On Uni-directional wheels.</p> <p>Correction rate :30 volts per step</p> <p>Wave form distortion :virtually nil</p> <p>Duty cycle :100% continuous.</p> <p>Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.</p> <p>Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.</p> <p>Load : Three phase induction motor load.</p> <p>Load Amperes (continuous)</p>	2	Job	1,07,401.00 2,14,802.00

	Description	Qty.	Unit	Rate	Amount
Overload in 24-hours operation: 10% above continuous Ampere rating. The voltage stabilizer shall have T-oil level indicator gauge preferably glass type tube or otherwise visible to naked eye. The top of the container to have a display panel for housing 02 numbers Digital voltmeters (0-500V) along with 4-way selector switch and set of neon indicators for incoming and outgoing phases (06 No's). Insulating media (T. Oil) of 11 KVA grade to be provided and filled up to top level, with dielectric strength of 5 KV at 4m air gap. The T-Oil of specific grade should be provided in separate barrels and filled at site up to top level. The voltage Stabilizer shall be accepted with manufacturers duly stamped test certificate and shall have name plate with specifications. <u>Manufacturers test certificate to be appended and rest of specification</u>					
6	Providing, installation and testing of 2 Ton Capacity manual type triple spur gear chain pulley block along with monorail geared travelling trolley having following features Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears. Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collared, tested and have adequate in built factor of safety for safer operation. Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below: i. Make = Reputed make ii. Capacity = 2 ton iii. No. Of load chain falls = 2 or above iv. Min. Height of lift = 6 M	1	Job	44,473.00	44,473.00
7	Providing/supplying and fitting of 80 mm G.I flanged Rising Main including delivery manifold with washout arrangement at site. The Pipe shall be hot dip Galvanized, class B conforming to IS 1239. The job includes providing and fitting of M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16). The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make. Flanges (as per IS 6392/1997 Table:17) Thickness shall conform to IS 6392 Part 1st Table-17. Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint. Welding Electrode: DC Arc Welding using welding electrode having diameter not less than 4mm. Nuts and Bolts: Nuts and Bolts (conforming to IS:1363 Part 1st) Rubber Insertion Gaskets: Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints. The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.	200	Meter	1,251.00	2,50,200.00
8	Providing and fitting of 80mm GI bend with flanges The Flanges shall be MS conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes providing and fitting of nuts, bolts, gaskets etc as per site requirement.	12	Job	2,797.00	33,564.00
	Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units. The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber(Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions It shall have electrostatic epoxy coating(approved for drinking water) both inside and outside of the valve. The valve shall be supplied along with hand wheel. Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work. The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job. Size: DN80mm N:1.6/16	6	Job	15,497.00	92,982.00

S. No.	Description	Qty.	Unit	Rate
9	Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve( NRV) as per IS 5312. The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions. It shall have electrostatic epoxy coating (approved for drinking water) both inside and outside of the valve.	5	Job	17,489.00
10	Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work. The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with Rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job. Size : 80mm PN : 16/16			
11	Fabrication, providing and fitting of split type MS clamps 12 mm thick, 2.5 ft long and 3 inch wide for lowering and holding of VT pumping unit fitted. The job includes the cost of required size of nuts and bolts. Size : 80mm/As per site requirement.	2	Job	1,801.00
12	<p><b>Electric Sub Station</b></p> <p>Supply , installation , commissioning and creation of pole mounted, outdoor type 100 KVA Electric Sub Station as per the technical specifications given here under -</p> <p>Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals:</p> <p>Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc.</p> <p>Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge.</p> <p>Transformer Coils: Suitable number of HT and LT coils in each leg of the core. The transformer coils shall be fabricated out of superior quality aluminum wire/strips, properly wound. The HT transformer is completely filled with suitable grade transformer oil up to required level. The job includes carriage, and all leads and lifts involved.</p> <p>The HT transformer shall be of reputed make from an ISO certified company as per relevant standards and a test certificate shall be provided before installation. The transformer shall also be provided with breather fill with silica gel crystals, conservator with oil level indicator, explosion vet and adequate radiator fins/ Tubes. The impedance of transformer shall be as per IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>NOTE: The scope of the work shall include obtaining of necessary inspection/clearance certificate from the concerned department for all the required equipment. The testing and commissioning shall be completed only after obtaining above certificate</p>	1	Job	2,09,945.00
13	Supply, installation, erection of 9 mtrs long H.T pipe of specifications ST410 (SP-33). The job further includes drilling of holes for installation of various accessories wherever required the job further includes G.I wire earthing of pole as per REC standard	12	Job	20,686.00
14	Cement bottoming 1:2:4 mix as per REC mix as per REC standards 0.5 cum/pole	12	Job	3,539.00
15	P/F of Galvanized nuts, bolts of various sizes	60	Kg	142.00
16	GI Barbed wire for Anti Climbing with fixtures as per site requirement.	60	Kg	136.00
17	P/F Danger Plate with clamps	12	No	153.00
18	Wedge connecters/PG Clamps as per site requirement.	12	No	421.00
19	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes/GI V cross-arm with top braket including clamps	1400	Kg	123.00
20	Supply, Installation, Testing and commissioning of Polymeric Gang operated Air break switch, outdoor type, triple pole, suitable for vertical installation, single break provided with locking arrangement at both ON and OFF position consisting of HT post double insulator, copper or copper alloy high pressure heavy contact assembly, rod with bearings , operating handle and 2 length of 32mm dia. GI pipe conforming to IS 1818 1961, 06 No. of insulators, rated voltage 11KV 200A complete as per IS specs.	2	Set	11,730.00
1	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation	1	Set	4,983.00
2	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type as per Clause 30	1	Set	7,754.00
3	Supply and fitting of 11 KV polymeric composite disc insulator 12 KV, minimum falling load 45KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm.	3	No.	596.00
4	Supply and fitting of 11 KV polymeric composite pin insulator 12 KV, 5KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm as per Clause 31 as per site requirement.	38	No.	347.00
5	Painting of poles Red oxide	12	Liter	306.00
5	Painting of poles Aluminum paint	12	Liter	510.00
	Sundry items like aluminium lugs, jumpers, binding tape.	1	LS	1,755.00

	Description	Qty.	Unit	Rate	Amount
3	Earthing of substation -Excavation of earth pit of dia 650 mm & depth 3000 mm, installation of Earthing pipe of 40 mm Nominal bore & 4mm wall thickness & length 2.5 mtr long as Per IS 1239.GI Strip for neutral earthing of size 25 mm x 3 mm for connection of transformer body,neutral,G.O Set, lightening arrester, LT Control Panel and voltage stabilizer as per IS 2629/85, GI nuts & bolts,refilled with earth enhancement materials and earth Chamber made of brick masonry with RCC slab cover.	7	Job	10,462.00	73,234.00
29	P/L of ACSR conductor of size 0.05 as per the relevant IS standard as per clause 78/as per site requirement	600	Meter	60.00	36,000.00
30	Providing and fitting of LT Distribution box for HT transformer with MCCB For incomer and SFU for outgoing circuits. Capacity of transformer: 100 KVA The job includes providing and fitting of required size cable, thimbles,clamps and fixtures etc required for the job.	1	Job	39,422.00	39,422.00
31	Galvanised stay set with 50x8mm stay clamp, guy insulator(02No.),anchor plate(200x200x6mm),nuts and bolts,2No. Turnbuckles,1.8m long,16mm diameter solid GS stay rod and 7/3.15mm dia GI standerd wire complete.	2	Set	4,922.00	9,844.00
32	Supply, Installation, testing and commissioning of 3-phase, 4-wire Trivectometer with suitable ring type CT complete unit as per latest IEC Standard.The required size cable for input and output connections (as per site requirement) with all allied accessories, transportation charges, labour component,earthing etc are included in the job.	1	Job	27,000.00	27,000.00
33	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	1	Unit	7,350.00	7,350.00
34	Electrification and illumination of pump house by way of providing & fitting Eight No. of lighting points and Two No. of heating points viz: a) Wiring to lighting points with 1.5Sq mm and heating points with 2.5Sq mm PVC single core multi-stranded copper conductor insulated, unsheathed 1.1 KV grade ISI marked with length as required upto control panel as per site requirement. b) PVC conduit/channel 1.5" and 1" to be fitted on walls of pump house as per site requirement. c) Eight No. of Bulb holders (angle type or any other type) with eight No. of 12Watt LED bulbs . d) Modular Switch boards with frame to be fitted on walls of pump house consisting of ISI marked items like 10A switches, indicator, 03 pin flash type socket for lighting (As per requirement) and combined 16A switch and 05 pin flash type socket(02No)for heating . The job includes cost on account of material, skilled labour,tools and tacks, including screws, cement nails, rawl plugs and other consumable items as per site requirement.	1	Job	28,000.00	28,000.00
35	Illumination of Premises: Providing and erection of 9 Mtr long Hot Dip Galvanized octagonal pole (single Section) with bottom 150mm, top 75mm wide, thickness 3mm with 70 Microns Zinc coating having inside arrangement for providing of power connection along with following items. 1)3 Way Terminal Connector 20 Amp. 2)3 No MCB 8 Amp. The job includes fabrication, providing and fitting of three arm GI structure at the top having 120° angle between arms and each arm having 15° inclination with respect to horizontal plane. Each arm should be of 2' length and size and shape appropriate as per requirement of the luminary. The job also includes providing and fitting of required length of flexible multi strand 2 mm copper wire from each terminal connector to each holding arm. The pole is mounted on 1:2:4 Cement concreting of size not less than 2'x2'x6" (cost of concreting not included in the job) using 04 No anchor bolts of required size not less than 7" in length. The complete job includes earthing in GI Electrode as per relevant IS Code	1	Job	22,226.00	22,226.00
36	Providing, Installation and testing of 2KVA fully automatic copper wound voltage stabilizer with input voltage 70-240 V and output 220 V. The stabilizer shall be installed and connected to the electric circuit as per location provided by site in charge.	1	Job	8,154.00	8,154.00
37	Providing, installation, testing and commissioning of area lighting 120 Watt LED (Street Light Type) on top of octagonal pole vide item No.36 Having following specs: Input: 90-240 V 50 Hz Power Factor: >0.9 Colour Temperature: 4K - 6.5K Beam Angle: 120° - 170° Lumens: >12000 Operating Temperature: -20°C to 60°C The LED is pressure die cast aluminum housing with power coated finish and having Ingress Protection up to IP-68. The LED is properly fitted on the arm of the pole and connected to the copper wire as provided in the high mast pole	3	Job	9,486.00	28,458.00
38	Fabrication of 6'x3' (2No's) angle iron beds having 2' height using 50x50x6mm angle iron by way of providing and fitting of Structural steel in built up sections , trusses and framed work, including cutting , hoisting, fixing in position and applying a priming coat of approved steel primer all complete welded	82	Kg	135.00	11,070.00

S. No.	Description	Qty.	Unit	Rate
39	Providing and fitting of 19mm Ply wood board to be fitted on the angle iron beds. The job includes cutting and fixing of Ply wood on angle iron beds of item no. 47 for resting.	36	Sft	154.00
40	Providing and fitting of 400mm ISI Marked sweep wall fan	1	No.	3,600.00
41	<p>Providing of good quality convenience and utility items</p> <ul style="list-style-type: none"> <li>a) Providing of good quality bedding for night stay/Shift consisting of: -</li> <li>i) Mattress with warm cover size 6'x3' (6Kg)- 02 No's</li> <li>ii) Quilt with warm cover size 5'x8' (6Kg)- 02 No's</li> <li>iii) Pillows with covers - 02 No's</li> <li>iv) Single bed warm blankets with one sided Fur- 02 No's</li> </ul> <p>The filling material for mattress, quilt and pillow shall be of good quality cotton</p> <ul style="list-style-type: none"> <li>b) The job also includes providing of pressure cooker 5ltr 02 No's, Steel patella(utensil) 5ltrs 02 No's, cooking heater 01 No., room heater 01 No., steel buckets 10 litre capacity 01 No., Plastic bucket 10 litre capacity with Mug 02 No's each, steel glasses 06 No's, steel Plates with large spoons and bowls 03 No's each, Cup and Saucer set (01 No. Set) and, 5kg Gas cylinder with burner/ stove. The job also includes providing of thermo-cool 15'x12' along with excel matting of 15'x12' size. The job also includes providing of unbreakable Plastic Chair table set consisting of chairs 04 No's, extra heavy Table 01 No. The job also includes providing of good quality safety Door locks (03 No's) of Godrej, Link locks,</li> </ul>	1	Job	39,619.00
42	<p>TOOL KIT For Maintenance: -</p> <p>The Tool Kit for maintenance shall comprise of the following and all the items as mentioned below shall be of Providing of tool kit consists of following items</p> <ul style="list-style-type: none"> <li>i. Double ended Spanner (Chrome plated) 02 sets complete</li> <li>ii. Double ended Ring spanners chrome plated 02 sets complete</li> <li>iii. Allen key set black finish 02 sets complete</li> <li>iv. Combination Pliers insulated with thick C.A sleeve; size in mm 165, 210, 255 each – 02 No.</li> <li>v. Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No.</li> <li>vi. Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No.</li> <li>vii. Insulated screw Drivers</li> </ul> <p>Blade length in mm Blade dia. in mm Tip dimensions in mm Quantity 50 3 1.6 x 0.4 02      75 3 1.6 x 0.4 02      100 3 3 x 0.4 02      125 3.5 3.5 x 0.5 02      150 3.5 3.5 x 0.5 02      200 4 4 x 0.6 02      300 5 5 x 0.8 02</p> <p>viii. Hammer with handle weight – 110 mg, 340 gm , 600 gm –each – 1No. .</p> <p>ix. Heavy duty pipe Wrench length in mm - 200, 300, 600 each – 01 No.</p> <p>x. Electric Multimeter=1No</p> <p>xi. Digital multimeter – 1No.</p> <p>xii. Digital Clamp tester capable to measure up to 400A - 1 No.</p> <p>xiii. Hack saw frame with hack saw blade – 01 no.</p> <p>xiv. S-16 MXI S- 16 H X 1 Socket Set (19 sockets + 6 Accessories) – 01 No</p>	1	Job	28,840.00
43	Supply, installation, Testing & commissioning of 1000VA Full Sine wave power inverter including Providing / Installation of 12V, 180AH Tubular inverter Battery with trolley and cover. with 2-core 4 mm <sup>2</sup> Cu ( 25 m) wiring as per site requirement along with other accessories like SS- Combine (02 No's), 3-pin plugs etc of reputed make for proper fitment and installation of the item.	1	Job	34,053.00
44	Supply, installation of 6 kg CO <sub>2</sub> type fire extinguisher manufactured as per IS: 15683 of 2006 with IS mark and comply with DGMS (Approval). The co <sub>2</sub> extinguisher should be suitable for class B & C fire and also for fire involving electrical equipment. The cylinder used for fire extinguisher shall be approved by petroleum and explosive safety organization (PESO) as per gas cylinder rules 2004 and as per IS: 7285 of 2004. The body should be made of seamless steel (manganese) confirming to IS: 7285 with IS mark and should be provided with squeeze grip nozzle and should be filled with co <sub>2</sub> confirming to IS: 15222 of 2002 with certificate. The extinguisher shall be provided with manufacturers test certificate and hydraulic test certificate by BIS from PESO.	2	Job	6,447.00
45	<p>Providing, laying &amp; fixing with adhesive/bonding material of insulation rubber mats on the floor of the pump house, covering area around electro-mechanical machinery for safeguarding the life &amp; limb of the workmen due to possible leakage of current &amp; short circuit. The floor surface shall be made good &amp; shall be free from dust, grease, foreign material &amp; moisture free. The mats shall be as per IS 15652:2006 &amp; shall have the following specifications: -</p> <p>Composition: Rubber (synthetic mats for electrical purpose) Thickness: - 2.5mm Size: - 1M wide.      The rubber mats shall be accepted with manufacturers test certificate.</p>	6	Meter	1,205.00
46	<p>Providing and Fitting of 50 sqmm, 3.5 core LT 1.1 KV, XLPE Armoured Aluminium Cable conforming to IS: 7089 part 1st as service line from the HT transformer to control panel including necessary thimbling, crimping, taping etc.</p> <p>NOTE:- The cable terminal ends for connection to switchgear at various requisite points shall be Al. Thimbles of reputed make and of appropriate size and connected by hydraulic crimp tool only.</p>	100	Meter	497.00

	Description	Qty.	Unit	Rate	Amount
48	Providing and Fitting of 10 sqmm, 1.1KV 2 core PVC Insulated Sheathed 2 Core copper cable for connecting Lighting pole with power supply conforming to IS: 694:2010.	30	Meter	260.00	7,800.00
49	Providing and fitting of 3-Core flat 16sq.mm submersible copper cable conforming to IS: 694 (Part 1st) – 1964 & IS: 694 (Part 2nd) - 1964 for Submersible Pumping Unit and other electrical Equipments . The cable connections terminal shall be fitted with copper thimbles of required size.	90	Meter	711.00	63,990.00
49	Providing, installation, testing of power wiring for working voltage up to and including 1100 Volts, 25 Sq. mm PVC insulated copper cable for internal connections as per IS 694 along with thimbling as per requirement at site.	180	Meter	394.00	70,920.00
50	<p>Providing, construction, installation, Fitting, commissioning of Pre fabricated GI sandwich Thermo Cole panel/PUF panel, Fiber Reinforced Plastic constructed toilet block toilet super structure, flooring of fiber cement board with Bio digester and super structure shall have the General specifications.</p> <p>On site constructed / Factory made</p> <p>Single unit / panelled form as per site requirement Easy to maintain and clean</p> <p>All weather protection Well ventilated</p> <p>Shall have no effect on natural climaty with regard to Effluent drawn out</p> <p>Shall be feasible for operation under -15-degree Celsius temperature.</p> <p>Technical Specifications for onsite constructed / Prefabricated GI sandwich Thermo cole panel/PUF panel toilet super structure Toilet Block clear Size – 4ft x 4ft x 8ft</p> <p>Material – Pre fabricated GI sandwich Thermo Cole panel/PUF panel, Fiber Reinforced Plastic constructed toilet block toilet super structure, flooring of fiber cement board Desired Features of toilet block:</p> <p>Tiles –up to 3ft on inside walls or as material of construction Floor – Tiles or as material of construction</p> <p>Paint on outside walls &amp; inside walls as per material of construction</p> <p>Western Toilet Seat I all made of ceramic (as per requirement)</p> <p>Taps &amp; Flushing system - Water tap at a nominal height of minimum 13 inches for Orissa Pan.</p> <p>Flushing system</p> <p>Electric Wire to connect the bulb</p> <p>Stand for water tank – Mild Steel of ISA 40 x 40 x 5 mm with CGI roof and proper frost protection during winter.</p> <p>Door – PVC / AL / FRP any other water proof material.</p>	1	Job	1,49,600.00	1,49,600.00
	<p>Water tank Capacity -300 liters to be placed on top with suitable frame of HDPE (with an openable lid) for the supply of water pipe to be provide and fitted from rising main up to toilet.</p> <p>Hand washing basin with Tap, soap case, tissue paper holder, jet spray fitted in side etc.</p> <p>Technical Specifications for Sanitation Unit for Solid waste management (Bio Digester)</p> <p>Capacity of Bio digester- 900 Ltr.</p> <p>Design - With four chambers to ensure long hydraulic retention time</p> <p>Construction of Bio Digester – UPVC / On site concrete constructed /any other chemically inactive material.</p> <p>Catalyst – Highly effective Bio Catalyst.</p> <p>Inoculum - The cocktail of bacteria duly certified by DRDE of 30 % of the volume of the digester</p> <p>Bio digester Lining – Inert vulcanized 1.0mm thick Butyl/EPDM rubber CE Marked and non-woven geo textile for bacteria retention</p> <p>Thickness of Lining – 2mm</p> <p>Material of Portion waffle – concrete / any other chemically inactive material</p> <p>Lifting – lugs</p> <p>3 – 4 people usage every day.</p> <p>Further job includes all types of works like earth work excavation for bio digester, carriage, transportation, handling, pipes for inlet connection for tank, other pipes etc. for disposal of effluents as per latest Govt. norms, electric connection, lock etc.</p>				
	Total advertised/estimated cost:				33,27,175.00
	Percentage quoted by L1 firm {-6%}				1,99,631.00
	Total allotted cost: Rupees Thirty One Lakh Twenty Seven Thousand Five Hundred and Fourty Four Only				31,27,544.00

Executive Engineer  
 Jal Shakti (PHE) Mechanical Division (North)  
 M. Sopore