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/ 4119-26
Dated: 28-08-2023

M/s Reliance Engineering Works
Johama Road Kanispora Baramulla
GST No: 01NOHPS1016G1Z4
Cell No: 9419993999

Adv. Cost:	Rs 30.645 Lacs
Allotted Cost:	Rs 30.032 Lacs

Subject: Electrical and mechanical works to be carried at WSS Tapper (Production well) under JJM.

Reference:
1. This office e-NIT No.: e-NIT No. 02 of 2023-24, S. No. 04 issued under endorsement No.: PHE/MDNS/DB/117-30, dated: 10-04-2023.
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/2135-49, dated: 30-05-2023.

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Dear Sir,

For and on behalf of Lt. Governor of J&K U.T contract for execution of "*Electrical and mechanical works to be carried at WSS Tapper (Production well) 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 Bla., 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 Bla/Bpr HQ at Spr., for favour of information.
5. Executive Engineer Jal Shakti (PHE) Division Bla., 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 Bla. for information & necessary action.
8. File concerned.

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

Name of work: Electrical and mechanical works to be carried at WSS Tapper (Production well) under JJM.

General Terms and Conditions

1. **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.
2. **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
3. **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 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

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 of 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 1st 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

Annexure "B" Schedule of cost and quantities

to this office Allotment Order No: PHE/MDNS/DB/_____, dated: _____

of work: Electro-Mechanical works to be carried out at WSS Augumentation Tapper Pattan (Production Well) under JJM

	Description	Unit	Qty.	Rate	Amount
1	Providing, fitting, installation, testing and commissioning of Submersible pumping unit as per IS 8034 of following specifications: A. PUMP 1. Efficiency = Not less than 50% 2. Discharge = 4200GPH 2. Type = .Mixed flow 3. Liquid to be handled = Clear water 4. RPM = 2900 5. Head = 160 Meters B. Prime Mover 1. Type = Star Delta AC induction 2. Power Supply = 03 Phase, 380-41 5V± 15% AC 3. Frequency = 50Hz±3% 4. RPM = 3000 Synchronous 5. HP = Corresponding to Head and discharge but not less than 30HP. MATERIAL OF CONSTRUCTION: Impeller = Stainless Steel Pump Shaft = Stainless Steel SS 410. Pump Casing = Cast Iron/Stainless steel IMPELLER: Impeller is of the enclosed or semi – enclosed type and properly balanced. Enclosed Impellers equipped with seal rings on their hubs. COUPLING: A suitable coupling arrangement provided with pump set. Non-Return Valve: - Non Return Valve of the suitable size provided above the pump discharge case. MOTOR: Method of starting =Star – Delta/DOL (as specified) Speed=3000 (Sync). Frequency = 50 ± 3 % Hz Working Voltage = 415 ± 15%v, 03 phase Efficiency = Not less than 90% Class of insulation = F/Suitable for above parameters Submersible motor should be water filled water lubricated squirrel cage type having capacity for above pumping parameters and working on 3 phase; AC supply ranging from 380 to 415 volts, 50Hz. The motor should be sealed by radial rings to avoid mixing of well water with motor filled water. a) The job includes providing and fitting of interlocking arrangement against any failure of coupling. It must be fabricated out of MS strips of suitable size and length. b) The job includes providing and fitting of appropriate size MS nipple 2 feet long threaded on one end and welded to same size MS flange of thickness (as per Table-17) at another end for column pipe as per site requirement. The threaded portion should be as per size of pumping out let for proper fixing. The job includes providing and fitting of R. I. cloth joints/rubber washers with nuts, bolts and washers for all joints of column pipe. The job also includes lowering of pumping unit in the well then proper testing and commissioning of pumping unit on full load at site. Note: Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned Sub Divisional office before procuring	Job	2	1,27,300.00	2,54,600.00
2	Fabrication of gantry mechanism/CGI shed/pump base frame by way of providing Structural steel in built up sections , trusses and framed work, including cutting , hoisting , grouting, fixing in position and applying a priming coat of steel primer and 02 coats of paint of approved shade all complete welded. The drawings and Dimensions for Gantry/CGI shed/pump base frame etc will be provided by Site In Charge at the time of execution of job.The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.				
2.01	Providing of Structural steel in built up sections , trusses and framed work, including cutting , hoisting , grouting, fixing in position and applying a priming coat of steel primer and 02 coats of paint of approved shade all complete welded/as per site requirment.	Kg	950	135.00	1,28,250.00
2.02	Providing corrugated G. S. sheet 0.63 mm thick with zinc coating not less than 275 gram/m2 roofing including vertical/curved surface fixed with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto any pitch in horizontal/vertical or curved surface)excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required/as per site requirment	Sq.m	12	968.95	11,627.40
2.03	Cement bottoming 1:2:4 mix of vertical members /as per site requirment	cum	3	7,078.00	21,234.00

3	Fabrication, Providing and fitting of Modular motor control panel of appropriate size fabricated out of 14 SWG sheet having required openings/vents and protection Class : IP-55 & fitted with accessories as under: MUG : 50 a. Main Circuit Breaker (Incommer MCCB) of rating = Thermal release range 160-200A with S.C. Breaking Capacity of 50kA=(02No's) b. Changeover Switch of rating = 200Amp (01No.) c.Bus Bar copper =200A = (01No.) d. Motor Breakup Protection MCCB of rating = Thermal release range 125-160A With S.C. Breaking Capacity of 36kA =(02No's) e. FASD starters: Motor rating 3-phase 415V, 50HZ AC-3 Duty with Relay range of 45-75Amp (02No's) f. Auxillary MCB for f.Heating/Lighting = 63 Amp.(01No.) **Detailed specifications:** a) Bus bar Chamber: The bus bar chamber shall be fitted at the top of the panel horizontally throughout the length. There shall be 3 Nos. of phase bus bar and 1 No neutral bus bar and 1 No earthing bus bar. The bus bars shall be air insulated and made-up of high conductivity COPPER with current density of suitable rating for 100/200 Ampere. All panel compartments shall be provided with suitable cable alley and vertical bus bar alley. Suitable segregation shall be provided in between bus bar chamber and adjoining compartments. The bus bar shall be PVC sleeved with color strips of red, yellow, blue and black and the same be arranged in accordance with IS-375 specs. Electrical clearances shall be maintained between phases, neutral and body as per standards. b) Main Circuit Breaker (Incomer MCCB): Qty.=02 No. of poles =4 Pole Current Rating = As per requirement	Job	1	3,03,186.00	3,03,186.00
	Rated operational voltage=415 V + 15 % Rated frequency=50+/-3%Hz Ambient temperature=40C° Ultimate S.C Breaking Cap. at (415V AC, 50 Hz)=As per requirement Type of release=Thermal-Magnetic Overload protection=0.8 – 1×In adjustable Short-circuit protection=6-10×In adjustable. Current rating = As per requirement c) Change over Switch: Qty. = 01 No. Rating = As per requirement Type =Front operated, on load, 4 pole, 400 +15%V, 50 + 3%Hz. d) Motor Back-up Protection MCCB: Qnty=2 No No. of poles =3P Current Rating =As per requirement Rated operational voltage = 415 V +15 % Rated frequency =50 + 3% Hz Ambient temperature =40C° Ultimate S.C Breaking Cap. at (415V AC, 50 Hz) =As per requirement current rating = 200 A e.Submersible starters:-= Fully automatic star delta/DOL starters. Capacity = As per requirement Power Specs = 3 Φ, 415 + 15% V, 50 + 3 % Hz. Relay range = As per requirement.				

	tection = single phasing , phase eversal, phase unbalance (55 ± 5 V) , Rated insulation voltage = 690V Terminal capacity = 120 Sq. mm with lug Or above Conformity to standard = IS/IES 60947-4-1 Qty. =2 No's f) Auxiliary MCCB for Heating/Lighting: Circuit Breaker=MCCB (Outgoing) Qty.=1 No. No. of poles=4P Current Rating =As per requirement. Rated operational voltage = 415 V + 15 % Ultimate S.C Breaking Cap. at (415V AC, 50 Hz) = As per requirement 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, over current, Prolong starting, Locked Rotor, Under voltage, over voltage & Earth fault. h.M-power module for mobile starter for submersible motor 1P/3P 3 wire 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 for each starter). 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.				
	MUG-50 as per following specifications: i) Bus bar 200A size (10 mtrx .02 mtrx 0.003 mtr x)8960 kg/m3 =5.38 kgs ii) D-sine MCCB 4 pole = (DN2 250N, 160-200, 50KA) iii) Change over switch = Front Operated 200A iv) D sine MCCB 3 pole = (DZ1-160D ,84-125, 36KA) v) Mug (Details as per estimate) x 2 = (Mug 50, 45-75Amp relay) vi) Auxiliary MCCB = 63Amp vii) MM 10 of L@T (Motor Protection) = Motor Protection viii) Module for mobile starter ix) Meters, (Ammeter & voltmeter) 2No. each and Freq Meter x) Indicators = LS xi) Over load and Under Voltage = Minlec				
4	**Rating: 75KVA** Providing, fitting, testing and commissioning of 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) 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 dully stamped test certificate and shall have name plate with specifications. Manufacturers test certificate to be appended	job	2	1,63,721.00	3,27,442.00

5	Providing, fitting and successful testing of 03 MT capacity, manual type chain pulley block with monorail geared travelling trolley of triple spur gear type with a minimum lift of 06 mtrs robust chain as per IS 3832 2005. The equipment shall be heavy duty type. The job includes supply of suitable diameter and length soft flexible steel Sling (Qty = 02 Nos) for hoisting of above chain pulley block. " 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 collaborated, 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 = 3 ton (P) iii No. Of load chain falls = 2 or above iv Min. Height of lift = 6 M Test Certificate of manufacturer is Mandatory	Job	1	62,972.00	62,972.0
6	Fabrication, providing, fitting and lowering of C Class NB 80mm column pipes conforming to IS: 1239 of length 10 Rft into the 250 mm casing dia. production well up to the desired depth; The job includes Providing and welding of flanges conforming to IS: 6392, Table-17 and PN 16 to these pipes and welding of flanges in two layers to make the flanged joint strong and leak proof. The pipe of 10 ft length is to be weld on both sides with flanges using welding rod of reputed make. The job includes all types of skilled labours, arrangement of power supply/ diesel Generator set etc required for the job including P/F of suitable size nuts bolts and R.I Gasket in the flanged joints of column pipes. The job further includes cutting of 2 no. rectangular cable slots in each flange.	job	18	5,543.00	99,774.00
7	Fabrication, providing and fitting of 90-120 degree bend/elbow to be fabricated out of 80mm dia GI bend with flangesClass B and C GI pipe, 1 m length and flanged on both ends and to make it leak proof. The flanges shall be M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes nuts, bolts, gaskets etc. as per site requirement.The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.	job	4	2,797.00	11,188.00
8	Fabrication, providing, fitting T - junction out of 1 mtr of pipe with length of 1.2 ft each arm.The Tee shall be fabricated out of G.I C-class pipe with M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) fastened with weld joints on three ends. The job includes all types of skilled labours, arrangement of power supply/ diesel Generator set etc required for the job including P/F of suitable size nuts bolts and R.I Gasket in the flanged joints .	job	1	4,050.00	4,050.00
9	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. Size: DN80mm PN:1.6/16 The body and bonnent 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.	Job	2	15,497.00	30,994.00
10	**Size: 80mm** PN: 1.6/16 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. 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.	Job	3	17,489.00	52,467.00

	viding, fitting, testing and commissioning of 50mm ARV (Air Release valve) as per IS 14845 to be fitted G I rising Main. The ARV Shall have the following specifications: - i.Valve type - single chamber, single/double orifice. ii.End connection - flanged ends to IS 1538 iii.Working temperature - 45oc to -150 c iv.Test pressure - body / seat 2.5 x PN v.Sealing ring - EPDM vi.Construction -ductile iron with stainless steel floats vii.Coating - epoxy with corrosion resistance Besides the above works, The job also cost on account of P/F R.I gasket, GI Pipe, nuts and bolts required for installation of ARV and arrangement of gas cutter/ welding set at site.	No	1	19,394.00	19,394.00
12	Fabrication, providing and fitting of split type MS clamps12 mm thick, 2.5 ft long and 3 inch wide for lowering and holding of pumping unit and column pipes . The job includes the cost of required size of nuts and bolts. Size: for holding 80mm pipe/As per site requirment.	job	2	2,200.00	4,400.00
13	**Rating: 100 KVA HT Transformer, 3 phase (Level 2).** Supply , installation , commissioning and creation of pole mounted, outdoor type Electric Sub Station 11/0.433 KVA , 3 Phase Distribution Transformer with Bimetallic Terminal connectors Energy level -2 Aluminum wound , as per the technical specifications given here under - Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments. Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals: Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc. Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge. 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. 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 jel 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. 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.	Job	1	2,09,945.00	2,09,945.00
14	Supply, installation, erection of 9 mtrs long H.T pope 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 as per Clause 32/as per site requirement.	Job	16	20,686.00	3,30,976.00
15	Cement bottoming 1:2:4 mix as per REC mix as per REC standards 0.5 cum/pole	job	16	3,539.00	56,624.00
16	P/F of Galvanized nuts, bolts of various sizes as per site requirement.	Kg	80	142.00	11,360.00
17	GI Barbed wire for Anti Climbing with fixtures /as per site requirement.	kg	80	136.00	10,880.00
18	P/F Danger Plate with clamps	No	16	153.00	2,448.00
19	Wedge connecters/PG Clamps/as per site requirement.	No	30	421.00	12,630.00
20	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes/GI V cross-arm with top braket including clamps	Kg	1050	123.00	1,29,150.00
21	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.	Set	2	11,730.00	23,460.00
22	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation	Set	1	4,983.00	4,983.00
23	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type inlcuding providing and fitting of DO set	Set	1	7,754.00	7,754.00
24	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.	No	3	596.00	1,788.00
25	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.	No.	48	347.00	16,656.00
26	Painting of poles Red oxide	lit	16	306.00	4,896.00
27	Painting of poles Aluminum paint	lit	16	510.00	8,160.00
28	Sundry items like aluminium lugs,jumpers,binding tape.	LS	1	1,755.00	1,755.00

29	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 4 mm for connection of transformer body,neutral,G O Set, lightening arrestor, 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 masonary with RCC slab cover.	Job	7	10,462.00	73,234
30	P/L of AC SR conductor of size 0.05 as per the relevant IS standard	Meter	1200	60.00	72,000.00
31	**Capacity of transformer: 100 KVA** Providing and fitting of LT Distribution box for H.T transformer with MCCB For incomer and SFU for outgoing circuits. The job includes providing and fitting of required size cable, thimbles,clamps and fixtures etc required for the job	job	1	39,422.00	39,422.00
32	Galvanised stay set with 50x8mm stay clamp, guy insulator(02No.),anchor plate(200x200x6mm),nuts and bolts,2No. Turnbuckels,1.8m long,16mm diameter solid GS stay rod and 7/3.15mm dia GI standerd wire complete.	set	2	4,922.00	9,844.00
33	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	Job	1	27,000.00	27,000.00
34	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	Unit	1	7,350.00	7,350.00
35	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 requirment. b) PVC conduit/ channel 1.5" and 1" to be fitted on walls of pump house as per site requirment. 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 requirment) 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 tackes, including screws, cement nails, rawl plugs and other consumable items as per site requirement	Job	1	28,000.00	28,000.00
36	**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	Job	1	22,226.00	22,226.00
37	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.	Job	1	8,154.00	8,154.00
38	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	Job	3	9,486.00	28,458.00
39	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	Kg	82	135.00	11,070.00

	Providing and fitting of 19 mm thick multilayered ply sheet of size 6 x 3 feet , 2 no's including cutting , fixing all complete including painting of the play sheet by one coat of primer and two coats of enamel paint 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 testing.	Sft	36	154.00	5,544.00
41	Providing and fitting of 400mm ISI Marked sweep wall fan	No.	1	3,600.00	3,600.00
42	**Providing of good quality conveinence and utility items** a) Providing of good quality bedding for night stay/Shift consisting of: - i) Mattress with warm cover size 6'x3' (6Kg)- 02 No's ii) Quilt with warm cover size 5'x8' (6Kg)- 02 No's iii) Pillows with covers - 02 No's iv) Single bed warm blankets with one sided Fur- 02 No's The filling material for mattress, quilt and pillow shall be of good quality cotton 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,	Job	1	39,619.00	39,619.00
43	**TOOL KIT For Maintenance:** 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 i.Double ended Spanner (Chrome plated) 02 sets complete ii.Double ended Ring spanners chrome plated 02 sets complete iii.Allen key set black finish 02 sets complete iv.Combination Pliers insulated with thick C.A sleeve; size in mm 165, 210, 255 each – 02 No. v.Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No. vi.Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No. vii.Insulated screw Drivers Blade length in mm Blade dia. in mm Tip dimensions in mm Quantity 5031.6 x 0.402 7531.6 x0.402 10033 x 0.402 1253.53.5 x 0.5 02 1503.53.5 x 0.502 20044 x 0.602 30055 x 0.802 viii.Hammer with handle weight – 110 mg, 340 gm , 600 gm –each – 1No. . ix.Heavy duty pipe Wrench length in mm - 200, 300, 600 each – 01 No. x.Electric Multimeter =1No xi.Digital multimeter – 1No. xii.Digital Clamp tester capable to measure up to 400A - 1 No. xiii.Hack saw frame with hack saw blade – 01 no.	job	1	28,840.00	28,840.00
44	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 mm2 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.	Job	1	34,053.00	34,053.00
45	Supply, installation of 6 kg CO2 type fire extinguisher manufactured as per IS: 15683 of 2006 with IS mark and comply with DGMS (Approval). The co2 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 co2 confirming to IS: 15222 of 2002 with certificate. The extinguisher shall be provided with manufactures test certificate and hydraulic test certificate by BIS from PESO.	Job	2	6,447.00	12,894.00
46	Providing, laying & fixing of shock proof rubber mats with adhesive/bonding material of insulation rubber mats on the the pump house, covering area around electro-mechanical machinery for safeguarding the life & limb of the workmen due to possible leakage of current & short circuit. The floor surface shall be made good & shall be free from dust, grease, foreign material & moisture free. The mats shall be as per IS 15652:2006 & shall have the following specifications: - Composition:- Rubber (synthetic mats for electrical purpose) Thickness:- 2.5mm Size: - 1M wide. The rubber mats shall be accepted with manufacturers test certificate.	Meters	8	1,205.00	9,640.00

47	Providing and Fitting of 70 samm, 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 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.	Meter	70	668.00	46,760.00
48	Providing and Fitting of 10 samm, 1.1KV 2 core PVC Insulated Sheathed 2 Core copper cable for connecting Lighting pole with power supply conforming to IS: 694:2010	Meter	30	260.00	7,800.00
49	Providing and fitting of 3-Core flat 25sq.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.	Meter	180	1,105.00	1,98,900.00
50	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 requirment at site.	Meters	90	394.00	35,460.00
51	Bio-toilet of size 4/x4/x8/ with FRP bio-digester tank of capacity 700 liters with anaerobic bacterial incolumn 200 liters complete with all accessories: Providing/construction/installation/commissioning of onsite brick masonry constructed/pre cast, re-inforced concrete constructed/fiber reinforced plastic constructed toilet block with bio-digester super structure shall be: General specifications .On site constructed/ factory made .Single unit/ paneled form as per site requirement . Easy to maintain and clean .All weather protection .Well ventilated .Shall have no effect on natural calamity with regard to Effluent drawn out .Shall be feasible for operation under -15 to 40 degree celcius temperature. Technical specification for onsite constructed/pre cast RCC toilet super structure . Toilet block size: 4ft x4ft x 8ft .Material-Precast concrete M25, onsite brick masonry or fiber reinforced Plastic Desired features of toilet block: .Tiles- upto 3ft on side walls or as material of construction ,Floor-Tiles or as material of construction .Paint on outside walls and inside walls as per material of construction . Western toilet sheet made of ceramic (as per site requirement) .Taps and flushing system- Water tap at a nominal height of minimum 13inches for Orissa Pan .Electric wire to connect the bulb .Stand for water tank-Mild steel of ISA 40x 40 x5mm with CGI roof and proper frost protection during winter .Door-PVC/AL/FRP any other water proof material .Water tank of capacity 300liters of HDPE(with an openable lid) for the supply of water (to be placed on top with suitable frame) .Hand washing basin with tap etc Technical specification for Sanitation Unit for solid waste management (Bio digestor) .Capacity of bio-digestor: 900liters .Design- With four chambers to ensure long hydraulic retention time .Construction of bio digestor- UPVC/on site concrete constructed/ any other chemically in-active material .Catalyst-Highly effective Bio catalyst .Incolumn-The cocktail of bacteria duly certified by DRDE of 30% of the volume of digestor .Bio digestor lining-Inert vulcanized 1.0mm thick butyl/EPDM rubber CE marked and non-voven geo textile for bacteria retention .Thickness of lining- 2mm .Material of portion waffle-concrete/any other chemically inactive material .Lifting-lugs ,.3-4 people usageFurther, 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.The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.	job	1	1,49,600.00	1,49,600.00
	Total advertised/estimated cost:				30,64,511.40
	Percentage quoted by L1 firm				-2.00%
	Total allotted cost: **Rupees Thirty Lakh Three Thousand Two Hundred and Twenty One Only**				30,03,221.00

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

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/ 4127-34
Dated: 28-08-023.

M/s Reliance Engineering Works
Johama Road Kanispora Baramulla
GST No: 01NOHPS1016G1Z4
Cell No: 9419993999

Adv. Cost:	Rs 50.474 Lacs
Allotted Cost:	Rs 49.338 Lacs

Subject: Electrical and mechanical works to be carried at WSS Bulgam (Production well) under JJM.

Reference:
1. This office e-NIT No.: e-NIT No. 02 of 2023-24, S. No. 01 issued under endorsement No.: PHE/MDNS/DB/117-30, dated: 10-04-2023.
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/4662-75, dated: 25-07-2023.

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Dear Sir,

For and on behalf of Lt. Governor of J&K U.T contract for execution of "***Electrical and mechanical works to be carried at WSS Bulgam (Production well) 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 Bla., 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 Bla/Bp/HQ at S/pr., for favour of information.
5. Executive Engineer Jal Shakti (PHE) Division Bla., 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 Bla. for information & necessary action.
8. File concerned.

to this office Allotment Order No: PHE/MDNS/DB/ _____, dated: _____

Name of work: Electrical and mechanical works to be carried at WSS Bulgam (Production well) under JJM

S. No	Item of work	Unit	Quantity	Rate	Amount
1	Providing, fitting, installation, testing and commissioning of Submersible pumping unit of approved make with following specifications: Discharge of the Pump = 4000 GPH at 70M Dynamic Head Range = 70-85 M Speed = 2900 RPM Working Voltage = 415 ± 15 V, 03 phase Rating = Corresponding to the head and discharge not less than 12.5 HP as per IS 8034 with following specification are as under: PUMP: Efficiency = Not less than 50% Speed = 2900 Rpm Type of pump = Mixed flow. Type of fluid to be handled = Clear Water MATERIAL OF CONSTRUCTION: Impeller = Stainless Steel Pump Shaft = Stainless Steel SS 410. Pump Casing = Cast Iron/Stainless steel IMPELLER: Impeller is of the enclosed or semi – enclosed type and properly balanced. Enclosed Impellers equipped with seal rings on their hubs. COUPLING: A suitable coupling arrangement provided with pump set. Non-Return Valve: - Non Return Valve of the suitable size provided above the pump discharge case. MOTOR: Method of starting = Star – Delta/DOL (as specified) Speed = 3000 (Sync). Frequency = 50 ± 3 % Hz Working Voltage = 415 ± 15%v, 03 phase Efficiency = Not less than 90% Class of insulation = F/Suitable for above parameters Submersible motor should be water filled water lubricated squirrel cage type having capacity for above pumping parameters and working on 3 phase; AC supply ranging from 380 to 415 volts, 50Hz. The motor should be sealed by radial rings to avoid mixing of well water with motor filled water. a) The job includes providing and fitting of interlocking arrangement against any failure of coupling. It must be fabricated out of MS strips of suitable size and length. b) The job includes providing and fitting of appropriate size MS nipple 2 feet long threaded on one end and welded to same size MS flange of thickness (as per Table-17) at another end for column pipe as per site requirement. The threaded portion should be as per size of pumping out let for proper fixing. The job includes providing and fitting of R. I. cloth joints/rubber washers with nuts, bolts and washers for all joints of column pipe. The job also includes lowering of pumping unit in the well then proper testing and commissioning of pumping unit on full load at site. Note: Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned Sub Divisional office before procuring.	Job	2	96,921.00	1,93,842.00
2	Fabrication, providing, fitting and lowering of C Class column pipe conforming to IS: 1239 of length 10 Rft into the 250 mm casing dia. production well up to the desired depth; The job includes Providing and welding of flanges conforming to IS: 6392, Table-17 and PN 16 to these pipes and welding of flanges in two layers to make the flanged joint strong and leak proof. Each Flanges to be U grooved on both side to avoid damage to cable. Also MS triangular plates to be welded to each flange with pipe . P/ R.I. cloth ,nuts and bolts as per site requirement) Nominal Dia:65 mm (DN65C Heavy) pipe. The pipe of 10 ft length is to be weld on both sides with flanges using welding rod of reputed make. The job includes all types of skilled labours, arrangement of power supply/ diesel Generator set etc required for the job including P/F of suitable size nuts bolts and R.I Gasket in the flanged joints of column pipes. The job further includes cutting of 2 no. rectangular cable slots in each flange.	Meter	60.96	4,300.00	2,62,128.00
3	Fabrication, providing and fitting of split type MS clamps10 mm thick, 2 ft long and 3 inch wide for lowering and holding of pumping unit fitted. The job includes the cost of required size of nuts and bolts. Size: 65 mm	Set	2	1,801.00	3,602.00
4	Dia = 80/65 Fabrication, providing and fitting of flanged flanged to delivery mainfold 90-120 degree bend/elbow to be fabricated out of Class C GI pipe, 1 m length and flanged on both ends and to make it leak proof. The flanges shall be M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes nuts, bolts, gaskets etc. as per site requirement.	Job	2	2,797.00	5,594.00
5	Fabrication, providing and fitting of washout Tee 80mm ncluding nuts,bolts and gasket as per site requirement. with arm length 1.2 feet each (Approx.). The Tee shall be fabricated out of G.I C-class pipe with M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) fastened with weld joints on three ends.	Job	1	4,050.00	4,050.00

6	Dia: 80 mm Cutting of hot dip galvanized G.I, C-Class pipe across the section by dint of pipe cutter/ gas cutter The job also includes Providing and welding of M.S flanges to the two ends of pipe. The Thickness of flange shall conform to IS 6392 Part 1st Table-17 tabular flanges. The flange welding shall be carried out in double layers using Advani/Esab/L&T- SS Bond make electrodes to form strong welding joint by dint of DC arc welding. The job further includes Providing and Fitting of nuts and bolts (conforming to IS:1363 Part 1st) and Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints	Job	6	1,340.00	8,040.00
7	Dia =80 mm DN80C(Heavy Class) Pipe Providing/supplying and fitting of G.I flanged Rising Main/washout at site. The Pipe shall be hot dip Galvanized, class C confirming 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. 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.	Meter	30.49	1,485.00	45,277.65
8	Size: 80 mm PN: 1.6/16 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. 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.	No	2	17,489.00	34,978.00
9	Dia = 80 mm 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 bonnent 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.	Job	2	15,497.00	30,994.00
10	S/I/T & C of Portable Handheld Clamp-On Ultrasonic Flow meter complete with all accessories with following specifications as under : Linearity: Better than 1% Repeatability: 0.5% Accuracy: ±1% of velocity reading or ±10mm/s, whichever is bigger. Response Time: 0-999 seconds, user-configurable Velocity: (-10m/s ~ +10m/s), bi-directional For Pipe Size: ND50mm ~ ND600mm Pipe Material: All metals, most plastics, lined pipe Units: Metric, British and US units selectable from list / free unit. Totalizer: 7-digit totalizers for totalizing net, positive and negative flows Liquid Types: Virtually all liquids (full pipe) Operating Temp: (-10°C ~ 50°C) depending on transducer type Security: Setup Modification Lockout. Access code needed for unlocking Display: 4x16 letters English letters, 240 x 200 pixel backlit LCD graphic display. Digital Interface: OCT digital output, can be configured as frequency or pulse output RS-232C: serial communication port with simplified flow meter protocol. Windows PC software for data download and real-time data acquisition Transducers: Standard medium size transducer for V-method type (magnetic/Non-Magnetic with clamp-on fixture).For Pipe size: (DN50 ~ DN600mm). Sensor mounting method: V method Transducer Cord: Standard 2x15' (2x5m). Power Supply: Rechargeable Battery type/AAA built-in batteries	Job	1	4,73,340.00	4,73,340.00

	rechargeable. When fully recharged, it will last over 10 hours of operation. 100V-240VAC for the charger. Data Logger. Built-in data logger can store over 2,000 lines of data. Housing Material. Protective case suitable for normal and harsh environment. Acoustic Coupler. Silicone free grease/Silicone grease.				
11	Providing and fitting of 10-12 mm Dia Steel wire rope for holding of Pump/motor unit & column pipes in hanging position at top over Well casing as a safety measure/precaution to avoid accidental fall of Pumping unit inside well. Includes providing & fitting of D clamps as per site requirement	Meter	100	150.00	15,000.00
12	Construction of (10'-0"x8'-0"x4'-0") gravel pack holding , control chamber and watering mechanism involves following a) Earth work excavation for foundation trenches in all kinds of soil, including dressing of sides and ramming of bottom with all leads and lifts. b) Cost in situ/ providing and laying of M20 (12 inch thick wall) grade cement concrete in stone aggregate (quarry) including shattering, centering, removal of shuttering and curing complete. (1.5 cum) c) Fab. P/grouting in above concrete work ISMC 100 angle iron frame of (10'-0"x8'0") with side holding cleats 10'x9 No. 4'x11 no's, 4'x10 nos' for vertical supports, ISA 50x50x5mm=40' d)Fabrication, providing, fitting of top cover in four halves out of 8mm thick MS chequred sheet of 10'x8' (2.5'x8'x4)for covering of the above gravel pack chamber and control valve chamber from the top including the cast of flushing hole for column pipe, lift holes for wire rope.The halves should be fixed with heavy duty hinges minimum 4 for each pieces. d) Painting by primary coat of red oxide steel primer and then black paint. (1 job) e) Proving and fitting of pressure guage at delivery line. f) Providing and fitting of water mechanism in PPR fitting for gravel g) Providing and filling of pea-gravel for production well. 200 Sft The above job executed at site by Shifting of desired tools, tackles & machinery done by skilled labor.	Job	1	1,50,000.00	1,50,000.00
13	Capacity: 63 kvA Supply installation , testing and commissioning of level II HT Transfromer which includes creation of pole mounted, outdoor type Electric Sub Station as per the technical specifications given here under - Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments. Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals: Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc. Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge. 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. 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 jell 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.	Job	2	1,71,963.00	3,43,926.00
	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.				
14	Supply, installation, erection of 9 mtrs 9 +B96:C118m Long pole H.T 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.	Nos	6	20,686.00	1,24,116.00
15	Cement Bottoming 1:2:4 mix as per REC standards 0.5 cum/pole	Job	6	4,364.00	26,184.00
16	G.I V cross with top Bracket including clamps Supply, installation, erection of 9 mtrs long H.T pope 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.	Kgs	125.26	202.00	25,302.52
17	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	Nos	24	347.00	8,328.00
18	P/F of Galvanized nuts, bolts of various sizes as per site requirement.	Kgs	15	142.00	2,130.00
19	P/F Danger Plate with clamps	Nos	6	153.00	918.00
20	Providing and fixing G.I Barbed wire for anti-climbing/ anti-climbing devices	Nos	6	315.00	1,890.00
21	Earthing complete by GI Pipe 40 mm or GI Rod 20 mm 2.5 mtr long through GI Strip	Nos	7	2,437.00	17,059.00
22	Painting of poles Red oxide	Liter	6	306.00	1,836.00
23	Painting of poles Aluminum paint	Liter	6	510.00	3,060.00
24	Stone pad (300mm x300mm x75mm)	Nos	6	232.00	1,392.00

25	PG Clamps fo 50 sqmm ACSR conductor	Nos	9	421.00	3,789.00
26	Providing and fitting of ACSR as per IS 398 (part-2) 1996 for 50 sq.mm ACSR (Galvanised steel reinforced) for fitment of various accessories	Meter	150	56.00	8,400.00
27	GI Channel/Angle/Flat of sizes including clamps	Kgs	352	202.00	71,104.00
28	Supply, Installation, Testing and commissioning of Polymeric Gang operated Air break switch 3 Phase, 3 Pole, 200 A, Vertical Type, 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.	Set	2	11,730.00	23,460.00
29	11 kV polymeric composite Disc Insulator 12 kV, Min failing load 45kN, Lighting Impulse 75kV Positive and 80 kV Negative, creepage distance 320mm	Nos	6	340.00	2,040.00
30	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type inlcuding providing and fitting of DO set	No	1	7,754.00	7,754.00
31	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation.	Set	1	4,983.00	4,983.00
32	50 sq mm (2 Ckt) 1.1 kV Grade, PVC Insulated Stranded Conductor FRLS Type	Meter	60	507.00	30,420.00
33	Earthing of substation- P/I of earthing station for electric substation, LT panel and stabilizer comprising of company fabricated earthing electrode as per IS: 3043. The job includes Auguring of bore of required dia/depth for installation of electrode along with backfill compound mixed with soil and all other items required thereof for achieving the best result. The job includes connecting of electric gadgets through GI strip as per relevant standards. Safe earthing electrode size : 65/80 mm dia (As specified), Length : 2000 mm Back fill compound : 30 kg	Nos	3	10,462.00	31,386.00
34	Providing and fitting of LT Distribution box fitted with 200 A 4 pole MCCB for incomer and SFU for outgoing circuits.	Nos	1	39,422.00	39,422.00
35	Galvanised stay set with 50x8mm stay clam, guy insulators(2No's), anchor plate (200x200x6mm), nuts and bolts, 2 Nos; turn-buckles, 1.8m long, 16mm dia meter solid GS stay rod & 7/3.15 mm dia GI Stranded wire complete	Set	4	4,922.00	19,688.00
36	Wedge connectors / PG Clamps	Nos	6	413.00	2,478.00
37	Providing, installation, testing and commissioning of outdoor type HT Trivectometer as per IEE Rule. Job includes grouting of legs in cement concrete as per site requirement. All cabling, earthing and allied accessories required to be provided by the firm. Moreover firm responsible for completing all sealing of PDD department and testing on load and noload at site	Nos	1	1,30,000.00	1,30,000.00
38	Sundry items like Alumunium Lugs , Jumprs, binding Tape	LS	1	1,052.00	1,052.00
39	P/F of 11 KV cable termination kit for connecting 35 sq mm AB(HT) Cable (3x35+1x70 sqmm) XLPE (11 kV , 3C+Earth XLPE cable (ABC type) with the existing HT line near tapping point and HT transformer.	Nos	2	8,994.00	17,988.00
40	Providing & Fitting of 25 sq mm Single Core Copper Conductor (Flexible) PVC Insulated Heavy Duty Industrial Cables (Unsheathed), 1100 Volts Conforming to IS: 694- for connecting motors from panel , stabilizers in rubber conduit . Job includes providing & laying of flexible conduit for cu cable with lugs as per requirement.	Meter	90	450.00	40,500.00
41	Providing and fitting of 3-Core flat submersible copper cable conforming to IS: 694 (Part 1st) – 1964 & IS: 694 (Part 2nd) - 1964 for Submersible Pumping Unit and other electrical Equipment. The cable connections terminal shall be fitted with copper thimbles of required size. The main specification of the cable is given below: Size: 16 Sq mm	Meter	180	711.00	1,27,980.00
42	Providing, installation ,testing of power service cable for working voltage up to and including 1100 volts; 50 sq mm armored aluminum 3.5 core cable as service line from output terminals of HT/LT transformer to cubical panel. Cost includes laying of cable in trenches in Pvc conduit where ever it is to be laid underground as per site requirement included is termination of ends with suitable Aluminum tube terminals dully crimpled & taped. 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.	Meter	60	497.00	29,820.00

43	Providing, fitting, testing and commissioning of 50 KVA 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)	Job	2	1,07,401.00	2,14,802.00
	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 dully stamped test certificate and shall have name plate with specifications.				
44	Design, manufacturing , providing , fitting, testing & commissioning of Star-delta Motor control gear Panel. The Star-delta Motor control gear Panel shall be fabricated out of 14 SWG CRCA Sheets Modular, compartmentalized, Free Standing, Floor Mounting, Front hinged doors for indoor use, removable bottom gland plates for incoming cables, dust and vermin proof (IP: 55 protection) with TP Copper Buses as per load , complete with connection, internal wiring, neon indicators for each phase ,starter buttons, name plates, painting ,vents etc. generally as per details furnished below: **Rated Voltage of the Panel ---- 440 Volts** **Frequency ---- 50 HZ** **No of Phases ---- Three** **Enclosure Details ---- Free Standing, Floor mounted, Compartmentalized Design.** **Material ---- CRS** **Thickness of sheet steel used ---- 02mm** **Application ---- Indoor** **Cable Entry ---- Bottom** **Painting ---- Shade Siemens grey.** **a) Mian Circuit Breaker incoming combined** **Type ---- On load 4 pole MCCB** **Rating : 160A** **Qty ---- 2 Nos (for Main and Standby/DG Set Supply)** **No. of poles ---- 4** **Rated operational voltage---- 415 V AC ± 15%** **Rated frequency ---- 50 ± 3% Hz** **Ultimate S.C Breaking cap at (415 volt A C , 50 Hz) ---- 50kA**	Job	1	2,34,676.00	2,34,676.00

(b) Distribution bus bar
Type -----Electric grade Cu with red, blue & yellow tapings of adequate section
Rating ----- 200 Amp
c) Change over Switch
Qty ----- One
Type----- Front Operated on load 4 pole (open execution)
Rating -----160 Amp
d) Circuit Breaker units
Type ----- MCCB
Qty ----- 2 Nos
No. of poles------3
Rated current -----100 Amp
Thermal release range-
Rated operational voltage------ 415 V ± 15%
Rated frequency ----- 50 ± 3% Hz
Ultimate S.C Breaking capacity at (415 volt A C , 50 Hz) -----50kA
e) Starters (FASD)
Power Specification -----3 phase, 415 ± 15% v & 50 Hz
Contactors :
Line Contactor ----- AC3 70 A
Delta Contactor --- AC3 70 A
Star Contactor ----- AC3 50 A
Timer ----- Star Delta Electronic
Thermal overload relay – direct/CT operated Suitable/available range
Coil Voltage : 220/240V
Qty ----- 2 No's

f) Aux. panel
Circuit breaker---MCCB
Qnty---01 no.
No. of poles---04
Rated operational Voltage---415+15%
Ultimate S.C. Breaking Capacity---35 KA at (415AC,50 Hz)
g) Stabilization unit for both starters
Qnty---02 no
Rating---- 1 KvA single phase automatic voltage stabilizer
Input :90V-300
Out Put : 220/240 (as per coil voltage of contractors)
Enclosure--- to be housed within the cubical panel in separated chamber with additional meter , LED fitted outer side
MCB DP ---10A----1nos
h) Protection Details:
Compact Motor Protection Relay including other related accessories like single phase preventer relay, timer relay , overload-under load, phase difference etc.
Display ----- LED/LCD and all setting is to be done at display
Compact motor protection relay
Qnty :01 nos)
Protections :
• Flush Mounting with display
• Last trip data recording
• Protections:
- Thermal Overload with pre- alarm
- Short Circuit
- Earth fault
- Phase loss, Unbalance, Phase reversal
- Under Current
- Prolong starting, Locked Rotor.
-Single phase protection- Single Phasing condition- Phase Reversal condition- Phase Unbalance condition-Modes of Operation
i) M-Power module for mobile starters and Earth fault relay as Auxiliary Protection
Earth Fault Relay -----3 phase Earth fault, ground fault module
Range as per requirement
MCB ----- MCB SP , 10A (10 Ka)
j) Water level control relay for including wiring and capsules required at site keeping depth of sump 10 meters in consideration: 01 unit complete (not for production wells)
g) Metering Details:
•Incomers (Panel Mounted)
(a) Multi-Function Meters LCD Display (1 No)
Voltage of each phase , Current of each phase
3ø power (Active, Apparent) , 3ø Power factor
Frequency , Energy
(b) Analog voltmeter S/S operated (1 No) - Rishabh make.
•(b) Outgoing
(Analog voltmeter (0-500) S/S operated (1Nos) .
Analog Ammeters 0-100 Amp (2Nos) for both starters
Each outgoing with S/S CT operated (Rishabh make)
h)M-power module for mobile starter for submersible motor suitable region north India.
Note: Name of Scheme ; Allotment No ; should be imprinted on the machine with capital letters

45	Providing, installation and testing of Heavy Duty 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 collaborated, 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 (P) iii No. Of load chain falls = 2 or above iv Min. Height of lift = 6 M	No	2	44,473.00	88,946.00
46	Capacity= 3 Ton Supply, Installation and testing of motorized chain hoist with hook suspension along travelling trolley of proper specifications having following features The chain hoist shall also have the following characteristics:- Motor: The basic drive of the hoist be provided with 3 phase squired cage totally enclosed induction motor having a high starting torque with class "F" insulation. The make of the motor be NGEF / SEIMNS / GEC/ Crompton and conform to IS : 325 (RPM-1500) Brake: The hoist shall have instant action, Fail to safe electromagnetic disc brake mounted on the end of the motor to ensure minimum safety and reliability when the load is held in its position as soon as the supply to the motor is switched off internally or accidentally. The adjustment & maintenance of break shall be quick and simple. Gears: The hoist shall have precision cut super and helical gears made of alloy steel mounted on bearings and housed in a dust proof gear box. The lubrication of gears 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 collaborated, tested and have adequate in built factor of safety for safer operation. Load chain wheel: Specially designed, perfectly machined wheel providing correct grip of load chain made of malleable cast iron makes the hoist most safe and reliable against any failure. Lifting Hook: The lifting hook shall be forged with provision for free swiveling.	Job	1	1,61,700.00	1,61,700.00
	Limit Switch: The limit switch shall have snap action, shunt type prevent over hoisting or over lowering to ensure maximum safety of operation. Control: The unit shall be controlled by heavy duty air break direction reversing type bidders and electrically inter – locked for safety. Contactors relay, fuses, low voltage transformer be fitted for control voltage and are to be housed in fabricated / pressed sheet steel box dust proof. Push button pendent: The contactors shall be operated by a pendent push button station suspended from hoist by a rope / dog chain to prevent any damage to the pendent cable and for easy operation. Test: The hoist supplied is to be tested at 25% overload and the test certificate of the same be provided at the time of installation. The complete unit as specified above is required to be fitted / tested at site. Besides the above works the job Includes Providing and fitting 3-Core 6 sq. mm ,50 m submersible cable for providing power supply to motor of chain Hoist including P/F protection device of suitable capacity. The main specifications of the chain Hoist are given below: Make = reputed make Capacity = 3 ton Hoisting speed = 2.4 M/Min Hoist motor H.P = as per requirement No. Of chain falls = 4 Min. Height of lift = 6 M				
47	Fabrication, providing, fitting of base frame for pumping units , covering of holes , fabrication of gantry, ladder ,DG set covering, HT/Lt transformer Bed with gantry fabricated out of ISMC/ISMB/ISA/Bars/MS Pipe/MS plain-chequrred 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.	Kgs.	5000	132.00	6,60,000.00
48	Providing and fitting of 1"x1" MS Mesh (10 no guage) for sides of DG Set and other MS structure as per site requirement by arc welding. Induded painting with one coat of red oxide and two coats of enamel paint of approved shade.	Sqm	50	850.00	42,500.00
49	Painting on steel structure/pipe with synthetic enamel paint of approved brand and maufacturer of required colour to give an even shade on new work(Two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution.	Sqm	200	150.00	30,000.00

50	Providing corrugated G S Sheet roofing including vertical/ curved surface fixed with polymer coated J or L Hooks, bolts and nuts 8 mm dia for overhead gantry diameter with bitumen and G I limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto any pitch in horizontal /vertical or curved surface) excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required 1.25 mm thick with zinc coating not less than 350 gram/m2	Sqm	45	1,800.00	81,000.00
51	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level 1:2:4 with stone aggregrate 20 mm nominal size. For concrete grouting of MS pipe/ foundation /concrete beds for rising-main as per requirement	Cum	20	6,434.00	1,28,680.00
52	Centering and shuttering including strutting, propping etc and removal of form work for foundation, footing , base	Sqm	20	289.00	5,780.00
53	Earth work in excavation by manual means in trenches for foundations, drains , pipes , cables etc (Not exceeding 1.5 m in width) and ramming of bottoms lift 1.5 m , including getting out excavated earth and disposal of surplus exacavated earth as directed (All kinds of soil)	Cum	10	277.00	2,770.00
54	Providing and laying of soling stone	Cum	5	679.00	3,395.00
55	Cement plaster in find sand in 1:3 mix finished with a coat of neat cement and curing complete 18 mm thick	Sqm	20	560.00	11,200.00
56	Providing, laying & fixing of shock proof rubber mats with adhesive/bonding material on the floor of the pump house, covering area around electro-mechanical machinery for safeguarding the life & limb of the workmen due to possible leakage of current & short circuit. The floor surface shall be made good & shall be free from dust, grease, foreign material & moisture free. The mats shall be as per IS 15652:2006 & shall have the following specifications: - Composition: Rubber (synthetic mats for electrical purpose) Thickness: - 2.5mm Size: - 1M wide. The rubber mats shall be accepted with manufacturers test certificate.	Meter	6	1,205.00	7,230.00
57	Supply, installation of 6 kg CO2 type fire extinguisher manufactured as per IS: 15683of 2006 with IS mark and comply with DGMS (Approval). The co2 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 co2 confirming to IS: 15222 of 2002 with certificate. The extinguisher shall be provided with manufactures test certificate and hydraulic test certificate by BIS from PESO.	Job	2	6,447.00	12,894.00
58	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	Job	4	22,226.00	88,904.00
59	Providing, installation, testing and commissioning of area lighting 120 Watt LED (Street Light Type) on top of octagonal pole including MCB fitted in box 10A 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	Job	4	8,866.00	35,464.00
60	Providing and installation of Junction Box with DP 32Amp MCB to serve as amin switch for LED lighting including complete wiring min 20-30 m from panel board. The job includes making of electric connection to the circuit.	Job	4	2,162.00	8,648.00
61	Providing, Installation and testing of 2KVA fully automatic voltage stabilizer including wiring 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.	Job	1	8,154.00	8,154.00

62	providing & fitting of lighting points for (machine room , operators room,) as per site requirement in 1.5 mm² multistranded single core 1100 volts, pvc insulated copper conductor through pvc conduit pipe by way, switches, socket modules , regulators ,indicators. 08/10 watt LED lamps Surface light Make . Included is cost on account of modular switch boards with the wooden frames as per site requirements	Job	15	1,600.00	24,000.00
63	providing fitting of heating points in 2.5mm² multistranded single core 1100 volts, pvc insulated copper conductor through pvc conduit by way of p / f of 15 Amp switches, 6 pin socket on modular fitting as per site requirements. Heating points are to be connected from main control panel. All accessories required is to be provided by the firm	Job	4	1,400.00	5,600.00
64	Providing and fitting of 9" x 9"exhaust fan with complete wiring in 1.5 mm cu wire through conduit and 6 A modular control complete job. Make Providing and fitting of 9" x 9"exhaust fan with complete wiring in 1.5 mm cu wire through conduit and 6 A modular control complete job.	Job	1	2,500.00	2,500.00
65	Providing, fitting of Distribution Board of reputed make 4 way S P N single door powder coated sheet steel enclosure for surface mounting fitted with bus bar, DIN channel, neutral link and incoming contact the above DB is to be provided /fitted with double pole 40 amp MCB for Main. 32 A for heating circuit & rest 3 of 16/6 amps each for premises luminary, auxiliary circuit of reputed make. Further job includes providing / fitting 4 mm² multistranded single core 1100 volts, pvc insulated copper conductor through pvc conduit as service line from main panel as per site requirements. Connections should be made in such a way Lighting points is to be connected via automatic transformer by way of p/f switch socket arrangement with allied fixtures & and heating points to main panel. Job includes dismantling of existing damaged conduit , wires, conduit and cleaning the surface properly	Job	2	5,500.00	11,000.00
66	P/I of Earthing station of Panel boad, stabilizer, Motors, heating points, lighting points, D.G sets for electric substation, LT panel and stabilizer comprising of company fabricated earthing electrode as per IS: 3043. The job includes Auguring of bore of required dia/depth for installation of electrode along with backfill compound mixed with soil and all other items required thereof for achieving the best result. The job includes connecting of electric gadgets through GI strip as per relevant standards. Safe earthing electrode size : 65/80 mm dia (As specified). Length : 2000 mm Back fill compound : 30 kg	Job	5	10,462.00	52,310.00
67	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 mm2 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.	Job	1	34,053.00	34,053.00
68	TOOL KIT For Maintenance: 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 i.Double ended Spanner (Chrome plated) 02 sets complete ii.Double ended Ring spanners chrome plated 02 sets complete iii.Allen key set black finish 02 sets complete iv.Combination Pliers insulated with thick C.A sleeve; size in mm 165, 210, 255 each – 02 No. v.Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No. vi.Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No. vii.Insulated screw Drivers Blade length in mm Blade dia. in mm Tip dimensions in mm Qty 50 3 1.6 x 0.4 02 75 3 1.6 x0.4 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 viii.Hammer with handle weight – 110 mg, 340 gm , 600 gm –each – 1No. . ix.Heavy duty pipe Wrench length in mm - 200, 300, 600 each – 01 No. x.Electric Multimeter =1No xi.Digital multimeter – 1No. xii.Digital Clamp tester capable to measure up to 400A - 1 No. xiii.Hack saw frame with hack saw blade – 01 no. xiv.S-16 MXL, S- 16 H X L Socket Set (19 sockets + 6 Accessories) – 01 No.	Job	1	28,840.00	28,840.00

69	a) Providing of good quality convenience and utility items bedding for night stay/shift consisting of:- i) Mattress with warm cover size 6'x3' (6Kg) 02 No's a) Quilt with warm cover size 5'x3' (6Kg) 02 No's iii) Pillows with covers 02 No's iv) Single bed warm blankets with one sided Fur 02 No's The filling material for mattress, quilt and pillow shall be of good quality cotton 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 sporns 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.	Job	1	39,619.00	39,619.00
70	Fabrication of 6' x 6' angle iron bed 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	Kg	94.75	93.00	8,811.75
71	Providing and fitting of 19 mm thick multilayered ply sheet of size 6 x 4 feet , 2 no's including cutting , fixing all complete including painting of the play sheet by one coat of primer and two coats of enamel paint	Sft	36	140.00	5,040.00
72	Providing of solar/electrical lantern chargeable on both solar & electrical 220v supply.	Job	1	1,911.00	1,911.00
73	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	Job	1	7,350.00	7,350.00
74	Providing of 1 KW heat convector for operators for winter season.	Job	1	1,205.00	1,205.00
75	Providing and fitting of 01 No. angle iron/sheet metal board duly painted showing various specifications of the mechanical and electrical equipments installed at site. The legs are to be grouted in cement concrete.	Sft	24	250.00	6,000.00
76	Capacity =25 KvA Providing, installation, Testing & commissioning of 415 ±15%V (output), 3 phase air cooled/water cooled Diesel Generator set Specification of approved make as per latest guide line as per IS 8528 (2018) and ISO 3046 (2002) for engine and IEC/IS 60034-1 for alternator suitably assembled and fitted in a pollution free acoustic enclosure / canopy of required size as per Ministry of Environment protection rule 1986 read with latest amendments. The DG Set is required to be fitted and tested on load at site The D.G Set shall have the following technical specification. Besides the above works the D.G set shall be provided with 12 V, 150 AH Lead acid battery of reputed make fitted inside the D.G set Canopy along with necessary accessories and battery charger of required capacity. The job also includes the cost on account of HSD and skilled operator required for operation of D.G set for a period of 10 hours continuously during its testing and commissioning of D.G set at site.	Job	1	6,17,206.00	6,17,206.00
	Total advertised/estimated cost:				50,47,439.92
	Percentage quoted by L1 firm				-2.25%
	Total allotted cost: **Rupees Forty Nine Lakh Thirty Three Thousand Eight Hundred and Seventy Three Only**				49,33,873.00

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