

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

3538-45

M/s RD Enviro Engineers and Consultants Pvt Limited  
Kishan Garh, Vasant Kunj, New Delhi-110070  
GST No: 07AAGCR1125A2Z0  
Cell No: 9313510382

Adv. Cost:	Rs 21.452 Lacs
Allotted Cost:	Rs 16.934 Lacs

Subject: Creation of electric Sub-Station and allied works to be carried at WSS Nowgam Gund Payeen Stage 1<sup>st</sup> and 2<sup>nd</sup> under JJM.

Reference: 1. This office e-NIT No.: e-NIT No. 16 of 2023-24, S. No. 07 issued under endorsement No.: PHE/MDNS/DB/1619-24, dated: 17-06-2023.  
2. Authorization awarded by Member Secretary DJJM Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Baramulla/Bandipore HQ at Sopore issued vide No. *EEC/SE/HYD/DB/5205-08*, dated: 08-08-2023.

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Dear Sir,

For and on behalf of Lt. Governor of J&K UT contract for execution of "Creation of electric Sub-Station and allied works to be carried at WSS Nowgam Gund Payeen Stage 1<sup>st</sup> and 2<sup>nd</sup> 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

*Muz*  
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 *Srinagar*, 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 *Sopore* HQ at \_\_\_\_\_, for favour of information.
5. Executive Engineer Jal Shakti (PHE) Division *Sopore*, 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 *Sopore* for information & necessary action.
8. File concerned.

Annexure "B" Schedule of cost and quantities  
**to this office Allotment Order No: PHE/MDNS/DB/ 3538-75, dated: 12/08/2023**

Name of work: **Creation of electric Sub-Station and allied works to be carried at WSS Nowgam Gund Payeen Stage 1<sup>st</sup> and 2<sup>nd</sup> under JJM**

Sl. No.	Item Description	Qty	Units	Rate	Amount
1.	<p>Creation of pole mounted, outdoor type Electric Sub Station for stage 1<sup>st</sup> and 2<sup>nd</sup> by way of Supply, installation, commissioning and creation of pole mounted, outdoor type Electric Sub Station as per the technical specifications given here under -</p> <p>Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>Type: HT/LT Transformer</p> <p>Rating: 200 KVA HT Transformer, 3 phase (Level 2).</p> <p>Type of cooling: ONAN.</p> <p>Operating conditions:</p> <p>Input =11000 volts</p> <p>Output =433 volts AC supply in 3- phase.</p> <p>Terminals:</p> <p>Input=3 No. HT bush rods with insulators, washer, nuts etc.</p> <p>Output=4 No. LT bush rods switch insulators, washers, nuts etc.</p> <p>Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge.</p> <p>Transformer Coils: Suitable number of HT and LT coils in each leg of the core. The transformer coils shall be fabricated out of superior quality aluminum wire/strips, properly wound. The HT transformer is completely filled with suitable grade transformer oil up to required level. The job includes carriage, and all leads and lifts involved.</p> <p>The HT transformer shall be of reputed make from an ISO certified company as per relevant standards and a test certificate shall be provided before installation. The transformer shall also be provided with breather fill with silica 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.</p> <p>NOTE: The scope of the work shall include obtaining of necessary inspection/clearance certificate from the concerned department for all the required equipment. The testing and commissioning shall be completed only after obtaining above certificate.</p> <p>Manufacturers certificate be appended</p>	2	Jobs	382996.00	765992.00
2.	Supply, installation, erection of 9 mtrs long H.T pipe of specifications ST-410 (sp-33) for stage 1 <sup>st</sup> and 2 <sup>nd</sup> . 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.	20	Job	20686.00	413720.00
3.	Cement Bottoming 1:2:4 mix as per REC standards 0.5 cum/pole	24	Job	3000.00	72000.00
4.	Providing and fitting G.I Channel /Angle/ Flat /Riser of sizes including clamps for stage 1 <sup>st</sup> and 2 <sup>nd</sup>	650	Kg	123.00	79950.00
5.	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	2	Set	11730.00	23460.00

	per IS specs for stage 1st and 2nd				
6.	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation for stage 1st and 2nd.	2	Set	4983.00	9966.00
7.	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type for stage 1st and 2nd.	2	Set	7754.00	15508.00
8.	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 for stage 1st and 2nd.	60	Set	347.00	20820.00
9.	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each) for stage 1st and 2nd	2	Unit	7350.00	14700.00
10.	Painting of poles with Red oxide	16	lit	306.00	4896.00
11.	Painting of poles with Aluminum paint	16	lit	510.00	8160.00
12.	P/I of earthing station for electric substation, LT panel and stabilizer comprising of company fabricated earthing electrode as per IS: 3043 for stage 1st & 2nd. 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	10	Job	10462.00	104620.00
13.	P/L of ACSR conductor of size 0.05 as per the relevant IS standard for stage 1st and 2nd	2000	Meter	60	120000.00
14.	Providing and fitting of 3"x5/8" Galvanized nuts and bolts	70	Kg	142.00	9940.00
15.	Providing and fitting of LT Distribution box for H.T transformer with MCCB For incomer and SFU for outgoing circuits for stage 2nd	2	Job	105767.00	211534.00
16.	Providing, installation, testing and commissioning of outdoor type HT Trivecto-meter 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 no load at site.	02	job	135000.00	270000.00
<b>Estimated / advertised amount:</b>					<b>2145266.00</b>
<b>Percentage quoted by L1 firm:</b>					<b>-21.06%</b>
<b>Total allotted amount:</b> <b>(Rupees Sixteen Lakh Ninety Three Thousand Four Hundred and Seventy Two Only)</b>					<b>1693472.00</b>

Executive Engineer  
Jal Shakti PHE Mechanical Division (North)  
Sopore

No.: PHE/MDNS/DB/ 3572-77

Dated:

12 - 08 - 2023

M/s RD Enviro Engineers and Consultants Pvt Limited  
Kishan Garh, Vasant Kunj, New Delhi-110070  
GST No: 07AAGCR1125A2Z0  
Cell No: 9313510382

Adv. Cost:	Rs 93.463 Lacs
Allotted Cost:	Rs 81.265 Lacs

Subject: Electrical and mechanical works to be carried at WSS Nowgam Gund Payeen Stage 1<sup>st</sup> and 2<sup>nd</sup> under JJM.

Reference: 1. This office e-NIT No.: e-NIT No. 16 of 2022-23, S. No. 08 issued under endorsement No.: PHE/MDNS/DB/1619-24, dated: 17-06-2023.  
2. Authorization awarded by Member Secretary DJJM Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Baramulla/Bandipore HQ at Sopore issued vide No. : SE/Hydr./DB/SD/5205-08, dated: 08-08-2023.

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Dear Sir,

For and on behalf of Lt. Governor of J&K UT contract for execution of "Electrical and mechanical works to be carried at WSS Nowgam Gund Payeen stage 1<sup>st</sup> and 2<sup>nd</sup> 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

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

ANNEXURE "A" to this office Allotment Order No: PHE/MDNS/DB/357-37 dated: 12/8/23  
Electrical and mechanical works to be carried at WSS Nowgam Gund Payeen stage 1<sup>st</sup> and  
Name of work: 2<sup>nd</sup> under JJM.

### General Terms and Conditions

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

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

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

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

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

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

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

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

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

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

4. **Transit Insurance:** The electro-mechanical equipment required for water supply schemes shall be insured through a Nationalized Insurance Company up to its final destination, against all transit risks. The firm should, therefore, take appropriate insurance policy in advance for covering the transit of the goods, charges for which shall be borne by the tenderer and shall be included in his quoted rates. The department shall pay no extra charges on this account.
5. **Mode of Dispatch:** The firm/contractor shall be responsible to adhere to transportation rules and regulations and the department shall not be responsible for any accident.
6. **Performance Security:** The successful bidder on award of the contract shall furnish a performance security equivalent to 03% of the value of the contract within one week of the issuance of allotment order in the shape of CDR/FDR/Bank Guarantee, valid for a period of three months beyond the completion period of the contract:
  - a. Safeguard against material and manufacturing defects, bad workmanship, improper design etc.
  - b. Successful execution of the contract and fulfillment of the conditions of the agreement.
  - c. Satisfactory performance of equipment in terms of the agreement.
7. **Terms of Payment for Electro-Mechanical Component:**
  - a. 70% (Seventy Percent) payment shall be released on receipt of material/equipment on Pro-Rata as per the allotment order and verification by the concerned Assistant Executive Engineer, thereof.
  - b. 20% (Twenty Percent) payment shall be released after installation and testing of the equipment.
  - c. Balance 10% (Ten Percent) shall be released after successful commissioning of the system and trial run of 01 month.

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

and/or

- d) Impose Liquidated damages on account of delay beyond the schedule completion period to the tune of 0.5% of the delayed portion of contract every week but not exceeding 10% value of the contract.

and/or

- e) Forfeit the performance security and blacklist the firm.

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

23. **Storage at Site:** The bidder shall at his own cost make arrangements for proper storage especially towards Rain and Snow damages of the equipment/ materials at sites till its erection/completion. For the purpose the bidder shall, with the approval of Engineer in charge construct temporary storage accommodation for equipment/ material at site for which land shall be provided by the department near the site of work.

24. **Bidder Death, Becoming Insolvent Or Imprisoned:** In the event of the death or insanity or insolvency or imprisonment of the bidder or where the bidder being a partnership or firm becomes dissolved or being corporation goes into liquidation, voluntary or otherwise, the contract may, in the option of the Engineer-in-charge, be terminated by notice in writing posted at the site of the works.

25. **Watch and Ward of Works:** The bidder shall in connection with the work provide and maintain at his own cost all lights, guards, fencing and watch and ward, when and wherever necessary or required by the Department for the protection of the work or safety and convenience of the Public etc.

26. **Training of Departmental Staff:** The bidder shall arrange, at his own cost and risk, to depute at least one competent Technical Supervisor, to train up to 04 Departmental representatives in the operation and maintenance of the equipment at site. This training shall be for duration of at least (3) three consecutive months and shall commence from the date of successful commissioning of the equipment or as may be mutually agreed upon.

Two groups of Departmental Engineers shall also be deputed to bidders/manufacturers works for short duration to obtain training free of cost in the operation and maintenance of the equipment, if required by the department.

27. **Final Acceptance:** The equipment/work shall be accepted by the Department only after the system has been tested and has performed satisfactorily in all respects, at site, in accordance with the provisions of the contract.

28. **Drawing and Quality Assurance Plans:** The following details shall be necessarily furnished within Two (02) weeks of the date of placement of this order which shall be approved by the Department within two (02) weeks from the receipt by the consignee.

- 1) Sectional Drawing of Pumps
- 2) General Arrangement Drawings (G.A.D.) /Layout of the equipment fully dimensioned for pumps, motors, starters, shunt capacitors, panels, delivery manifold, cables etc.
- 3) Detailed circuit diagrams of LT Panels, starters, shunt capacitors etc.
- 4) Third Party Inspection Reports and OEM's test certificates to the Department for their approval.

No manufacturing activity shall be started by the firm without approval of the drawings for each ordered equipment/work by the competent authority.

Additional time consumed due to observations/summary rejection of QAP/GAD shall be considered in the delivery period of the contract and the bidder shall be wholly and solely held responsible for the delay, thus caused.

Although no make has been specified in respect of any equipment, the bidder shall furnish QAP/GAD of only those makes which are standard with proven record of satisfactory performance in this Department or any other Government Department in the UT or outside. Thus, the bidder shall have to mandatorily furnish a list of makes and technical data for the tendered equipment which the firm intends to supply, in the cover 1<sup>st</sup> of the bid so that the Department is fully satisfied about the quality of the equipment.

29. **Operation and Maintenance Manuals:** The bidder shall supply, free of cost to the Department, six complete sets of operation and maintenance manuals for the Pumping Equipment and Electrical Equipment. The delivery of these manuals shall be made by the bidder to the Engineer along with the supply of equipment. The manuals shall be appropriately bound in book form and shall contain all necessary instructions regarding operation, preventive maintenance, repairs, trouble shooting, overhauling etc.

The manuals shall also include detailed drawings of the equipment, circuit diagrams and station layout with all items properly identified. The manuals shall also include the spare parts catalogues with part numbers clearly given, which must tally with index numbers in the drawings.

30. **Cleaning Up:** On completion of the works the bidder shall clear away, load into trucks or any other transport and remove from the site all constructional plant, surplus materials, dismantled or otherwise,

earth and rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workmanship condition, to the satisfaction of the Department.

31. **Power and Water Supply:** The bidder/firm shall make his own arrangement, at his own cost, for all 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.**

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\_\_\_\_\_  
**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/~~SS-2-77~~ dated: 12/08/2023

Name of work:

Electrical and mechanical works to be carried at WSS Nowgam Gund Payeen stage 1<sup>st</sup> and 2<sup>nd</sup> under JMM

S No.	Item Description	Qty	Units	Rate	Amount
1.	<p><b>VT Pumping Units:</b> Providing, installation, successful testing and commissioning of vertical turbine pumping unit for 1st stage as per IS 1710 driven by hollow shaft/Solid Shaft VT motor for pumping water from River Jhelum of following parameters:</p> <ul style="list-style-type: none"> <li><b>Site Condition:</b> Altitude = 1580 Meters (AMSL) Ambient Temperature = +40°C to - 15°C Relative Humidity = 60%</li> <li><b>Levels of site</b> Bottom level of intake channel = Zero Meters Machine Floor level from bottom level of sump = 8 Meters Water column in liner/sump above the bed level = 2 Meters</li> <li><b>Type of water</b> = Raw water having specific gravity of unity average</li> </ul> <p><b>A. PUMP</b></p> <ol style="list-style-type: none"> <li>Discharge = 30000 GPH at 65M head</li> <li>Type = Self water lubricated, VT pump, open line shaft.</li> <li>Liquid to be handled = Raw Water</li> <li>RPM = 1460</li> <li><b>Head = 65 Meters with minimum stages.</b></li> <li>Efficiency = Not less than 65-70%</li> <li>Impeller = Enclosed/semi-enclosed mixed flow all bronze</li> <li>Line shaft/Head Shaft = Stainless steel</li> <li>Total length of line shaft = 10 m or as specified (excluding Head shaft)</li> <li>Impeller shaft = Stainless steel</li> <li>Line shaft bearing = Cut less rubber/Neoprene rubber</li> <li>Line shaft coupling = Stainless steel</li> <li>Suction Strainer = MS fabricated</li> <li>Suction Bowl/Bell mouth= Cast Iron</li> <li>Pump Bowl = Cast iron</li> <li><b>Bearing :</b> Thrust bearing shall be suitable and of adequate capacity to carry the weight of all rotating parts and the hydraulic down thrust. The bearing housing shall have suitable cooling mechanism.</li> <li><b>Ratchet:</b> Non-reversing ratchet shall be provide to prevent reverse rotation.</li> <li><b>Column pipe</b> = Mild Steel 150mm VT Pumping Unit dia, anti- corrosive and polished, of wall thickness not less than 12mm flanged type in assorted lengths. At least 8 Meters column pipes to be provided with maximum length of 5 feet/length. Pump bowl to be designed with minimum number of stages.</li> </ol> <p><b>B. Prime Mover</b></p> <ol style="list-style-type: none"> <li>Type = Vertical hollow shaft, AC squirrel cage induction motor</li> <li>Power Supply = 03 Phase, 415V± 10% AC</li> <li>Frequency = 50Hz±3%</li> <li>RPM = 1450 Synchronous</li> <li>Efficiency = Not less than 85%</li> <li><b>HP</b> = Corresponding to Head and discharge but not less than 60 HP.</li> <li>Class of insulation = F or above</li> <li>Type of duty = Continuous</li> </ol>	2	Job	1030000.00	2060000.00

9. Motor thrust bearing = Anti-friction ball bearing/roller bearing  
 10. Method of starting = star/delta  
 The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.

**C. Accessories**

- Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc. as per standard specifications besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.

**Base Frame**

- Fabrication, providing and fitting of base frame for the installation of the pumping units. The base frame to be fabricated out of suitable size ISMB/ISMC members. The base frame shall be of robust construction and shall support entire static and dynamic load of pumping unit without any vibration.
- Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before procuring/dispatch.

Original Manufacturer's Test certificates in original to be provided with the material before installation.

2. **VT Pumping Units:** Providing, installation, successful testing and commissioning of vertical turbine pumping unit for 1st stage as per IS 1710 driven by hollow shaft/Solid Shaft VT motor for pumping water from River Jhelum of following parameters:

**• Site Condition:**

Altitude = 1580 Meters (AMSL)

Ambient Temperature = +40°C to - 15°C

Relative Humidity = 60%

**• Levels of site**

Bottom level of intake channel = Zero Meters

Machine Floor level from bottom level of sump = 8 Meters

Water column in liner/sump above the bed level = 2 Meters

- Type of water = Raw water having specific gravity of unity average

**A. PUMP**

- Discharge = 12000 GPH at 40M head
- Type = Self water lubricated, VT pump, open line shaft.
- Liquid to be handled = Raw Water
- RPM = 1460
- Head = 40 Meters with minimum stages.**
- Efficiency = Not less than 65-70%
- Impeller = Enclosed/semi-enclosed mixed flow all bronze
- Line shaft/Head Shaft = Stainless steel
- Total length of line shaft = 10 m or as specified (excluding Head shaft)
- Impeller shaft = Stainless steel
- Line shaft bearing = Cut less rubber/Neoprene rubber
- Line shaft coupling = Stainless steel
- Suction Strainer = MS fabricated
- Suction Bowl/Bell mouth= Cast Iron
- Pump Bowl = Cast iron

2 Job 615000.00 1230000.00

16. Bearings: Ind. capacity to carry the weight down thrust. The bearing mechanism.  
 17. Patchet: Non-reversing reverse rotation.  
 18. Column pipe anti-corrosive and flanged type in flanged type in Pump H

16. Bearing : Thrust bearing shall be suitable and of adequate capacity to carry the weight of all rotating parts and the hydraulic down thrust. The bearing housing shall have suitable cooling mechanism.

17. Ratchet: Non-reversing ratchet shall be provided to prevent reverse rotation.

18. Column pipe = Mild Steel 150mm VT Pumping Unit dia, anti-corrosive and polished, of wall thickness not less than 12mm flanged type in assorted lengths. At least 8 Meters column pipes to be provided with maximum length of 5 feet/length.

Pump bowl to be designed with minimum number of stages.

#### B. Prime Mover

1. Type = Vertical hollow shaft, AC squirrel cage induction motor

2. Power Supply = 03 Phase, 415V ± 10% AC

3. Frequency = 50Hz ± 3%

4. RPM = 1450 Synchronous

5. Efficiency = Not less than 85%

6. HP = Corresponding to Head and discharge but not less than 15 HP.

7. Class of insulation = F or above

8. Type of duty = Continuous

9. Motor thrust bearing = Anti-friction ball bearing/roller bearing

10. Method of starting = star/delta

The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.

#### C. Accessories

- Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc. as per standard specifications besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.

#### Base Frame

- Fabrication, providing and fitting of base frame for the installation of the pumping units. The base frame to be fabricated out of suitable size ISMB/ISMC members. The base frame shall be of robust construction and shall support entire static and dynamic load of pumping unit without any vibration.
- Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before procuring/dispatch.

Original Manufacturer's Test certificates in original to be provided with the material before installation.

3. **VT Pumping Units:** Providing, installation, successful testing and commissioning of vertical turbine pumping unit for 1st stage as per IS 1710 driven by hollow shaft/Solid Shaft VT motor for pumping water from River Jehlum of following parameters:

- Site Condition:

Altitude = 1580 Meters (AMSL)

Ambient Temperature = +40°C to - 15°C

Relative Humidity = 60%

2 Job 640000.00 1280000.00

- Levels of site  
Bottom level of intake channel = Zero Meters  
Machine Floor level from bottom level of sump = 8 Meters  
Water column in liner/sump above the bed level = 2 Meters
- Type of water = Raw water having specific gravity of unity

average

#### A. PUMP

1. Discharge = 15000 GPH at 40M head
  2. Type = Self water lubricated, VT pump, open line shaft.
  3. Liquid to be handled = Raw Water
  4. RPM = 1460
  5. Head = 40 Meters with minimum stages.
  6. Efficiency = Not less than 65-70%
  7. Impeller = Enclosed/semi-enclosed mixed flow all bronze
  8. Line shaft/Head Shaft = Stainless steel
  9. Total length of line shaft = 10 m or as specified (excluding Head shaft)
  10. Impeller shaft = Stainless steel
  11. Line shaft bearing = Cut less rubber/Neoprene rubber
  12. Line shaft coupling = Stainless steel
  13. Suction Strainer = MS fabricated
  14. Suction Bowl/Bell mouth= Cast Iron
  15. Pump Bowl = Cast iron
  16. Bearing : Thrust bearing shall be suitable and of adequate capacity to carry the weight of all rotating parts and the hydraulic down thrust. The bearing housing shall have suitable cooling mechanism.
  17. Ratchet: Non-reversing ratchet shall be provide to prevent reverse rotation.
  18. Column pipe = Mild Steel 150mm VT Pumping Unit dia, anti- corrosive and polished, of wall thickness not less than 12mm flanged type in assorted lengths. At least 8 Meters column pipes to be provided with maximum length of 5 feet/length.
- Pump bowl to be designed with minimum number of stages.

#### B. Prime Mover

1. Type = Vertical hollow shaft, AC squirrel cage induction motor
2. Power Supply = 03 Phase, 415V± 10% AC
3. Frequency = 50Hz±3%
4. RPM = 1450 Synchronous
5. Efficiency = Not less than 85%
6. HP = Corresponding to Head and discharge but not less than 20 HP.
7. Class of insulation = F or above
8. Type of duty = Continuous
9. Motor thrust bearing = Anti-friction ball bearing/roller bearing
10. Method of starting = star/delta

The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.

#### C. Accessories

- Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc. as per standard specifications besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.

#### Base Frame

- Fabrication, providing and fitting of base frame for the

	installation of the pumping units. The base frame to be fabricated out of suitable size ISMB/ISMC members. The base frame shall be of robust construction and shall support entire static and dynamic load of pumping unit without any vibration.				
	<ul style="list-style-type: none"> <li>Providing of test certificate &amp; Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before procuring/dispatch.</li> </ul> <p>Original Manufacturer's Test certificates in original to be provided with the material before installation.</p>				
4.	<p><b>VT Pumping Units:</b> Providing, installation, successful testing and commissioning of vertical turbine pumping unit for 1st stage as per IS 1710 driven by hollow shaft/Solid Shaft VT motor for pumping water from River Jehlum of following parameters:</p> <ul style="list-style-type: none"> <li><b>Site Condition:</b> Altitude = 1580 Meters (AMSL) Ambient Temperature = +40°C to - 15°C Relative Humidity = 60%</li> <li><b>Levels of site</b> Bottom level of intake channel = Zero Meters Machine Floor level from bottom level of sump = 8 Meters Water column in liner/sump above the bed level = 2 Meters</li> <li>Type of water = Raw water having specific gravity of unity average</li> </ul> <p><b>A. PUMP</b></p> <ol style="list-style-type: none"> <li>Discharge = 7000 GPH at 70M head</li> <li>Type = Self water lubricated, VT pump, open line shaft.</li> <li>Liquid to be handled = Raw Water</li> <li>RPM = 1460</li> <li><b>Head = 50 Meters with minimum stages.</b></li> <li>Efficiency = Not less than 65-70%</li> <li>Impeller = Enclosed/semi-enclosed mixed flow all bronze</li> <li>Line shaft/Head Shaft = Stainless steel</li> <li>Total length of line shaft = 10 m or as specified (excluding Head shaft)</li> <li>Impeller shaft = Stainless steel</li> <li>Line shaft bearing = Cut less rubber/Neoprene rubber</li> <li>Line shaft coupling = Stainless steel</li> <li>Suction Strainer = MS fabricated</li> <li>Suction Bowl/Bell mouth= Cast Iron</li> <li>Pump Bowl = Cast iron</li> <li>Bearing : Thrust bearing shall be suitable and of adequate capacity to carry the weight of all rotating parts and the hydraulic down thrust. The bearing housing shall have suitable cooling mechanism.</li> <li>Ratchet: Non-reversing ratchet shall be provide to prevent reverse rotation.</li> <li>Column pipe = Mild Steel 150mm VT Pumping Unit dia, anti- corrosive and polished, of wall thickness not less than 12mm flanged type in assorted lengths. At least 8 Meters column pipes to be provided with maximum length of 5 feet/length. Pump bowl to be designed with minimum number of stages.</li> </ol> <p><b>B. Prime Mover</b></p> <ol style="list-style-type: none"> <li>Type = Vertical hollow shaft, AC squirrel cage induction motor</li> <li>Power Supply = 03 Phase, 415V± 10% AC</li> </ol>	2	Job	480000.00	960000.00

3. Frequency = 50Hz±3%
  4. RPM = 1450 Synchronous
  5. Efficiency = Not less than 85%
  6. HP = Corresponding to Head and discharge but not less than 12.5 HP.
  7. Class of insulation = F or above
  8. Type of duty = Continuous
  9. Motor thrust bearing = Anti-friction ball bearing/roller bearing
  10. Method of starting = star/delta
- The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.

#### C. Accessories

- Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc. as per standard specifications besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.

#### Base Frame

- Fabrication, providing and fitting of base frame for the installation of the pumping units. The base frame to be fabricated out of suitable size ISMB/ISMC members. The base frame shall be of robust construction and shall support entire static and dynamic load of pumping unit without any vibration.
- Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before procuring/dispatch.

Original Manufacturer's Test certificates in original to be provided with the material before installation.

5.	<p><u>Delivery manifold/Y-junction:</u> Providing/supplying and fitting of G.I flanged Rising Main at site for stage 1st. The Pipe shall be hot dip Galvanized, class C conforming to IS 1239. The job includes providing and fitting of M.S Flanges conforming to BIS 6392/1997 (Rating PN16) for fabrication of delivery manifold/Y-Junction as per site requirement. The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make.</p> <p>Flanges (as per IS 6392/1997 Table:17)</p> <p>Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint.</p> <p><u>Welding Electrode</u> DC Arc Welding using welding electrode having diameter not less than 4mm.</p> <p><u>Nuts and Bolts</u> Nuts and Bolts (conforming to IS:1363 Part 1st)</p> <p><u>Rubber Insertion Gaskets</u> Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints. The main technical specifications of the pipe are given here under:</p> <p>Size : 150 mm</p> <p>Class: C (Heavy)</p> <p>The job also includes providing fitting of 100mm dia washout</p>				

	connection in the delivery manifold.				
6.	<p>Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units for stage 1st and 2nd .</p> <p>Size: DN150 PN:1.6/16</p> <p>The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber (Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions</p> <p>It shall have electrostatic epoxy coating(approved for drinking water) both inside and outside of the valve. The valve shall be supplied along with hand wheel.</p> <p>Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work.</p> <p>The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p>	2	No	25977.00	51954.00
7.	<p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve(NRV) as per IS 5312 for stage 1st and 2nd.</p> <p>Size: 150 mm PN: 1.6/16</p> <p>The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber (Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions.</p> <p>It shall have electrostatic epoxy coating (approved for drinking water) both inside and outside of the valve.</p> <p>Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work.</p> <p>The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with Rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p>	2	No	32205.00	64410.00
8.	<p><u>Delivery manifold/Y-junction:</u> Providing/supplying and fitting of G.I flanged Rising Main at site for 2nd. 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 (Rating PN16) for fabrication of delivery manifold/Y-Junction as per site requirement. The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make.</p> <p>Flanges (as per IS 6392/1997 Table:17)</p> <p>Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint.</p> <p>Welding Electrode</p> <p>DC Arc Welding using welding electrode having diameter not less than 4mm.</p> <p>Nuts and Bolts</p> <p>Nuts and Bolts (conforming to IS:1363 Part 1st)</p> <p>Rubber Insertion Gaskets</p> <p>Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints. The main technical specifications of the pipe are given here under:</p> <p>Size : 100 mm</p>	60	Meter	2189.00	131340.00

	<p>Class: C (Heavy) The job also includes providing fitting of 100mm dia washout connection in the delivery mainfold.</p> <p>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 for stage 1st and 2nd .</p> <p>Size: DN100 PN:1.6/16 The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber (Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions It shall have electrostatic epoxy coating(approved for drinking water) both inside and outside of the valve. The valve shall be supplied along with hand wheel. Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work. The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p>				
10.	<p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve(NRV) as per IS 5312 for stage 1st and 2nd.</p> <p>Size: 100 mm PN: 1.6/16 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.</p>	6	No	19094.00	114564.00
11.	<p>Providing, fitting, testing and commissioning of voltage stabilizer for stage 1<sup>st</sup>as per specifications below:</p> <p>Rating:: 100KVA 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.</p>	6	No	20581.00	123486.00
		2	No.	196466.00	392932.00

	<p>Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.</p> <p>Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.</p> <p>Load : Three phase induction motor load.</p> <p>Load Amperes (continuous)</p> <p>Overload in 24-hours operation: 10% above continuous Ampere rating.</p> <p>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).</p> <p>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.</p> <p>The voltage Stabilizer shall be accepted with manufacturers dully stamped test certificate and shall have name plate with specifications.</p> <p>Manufacturers test certificate to be appended .</p>			
12.	<p>Providing, fitting, testing and commissioning of voltage stabilizer for stage 1<sup>st</sup> and 2<sup>nd</sup> as per specifications below:</p> <p>Rating:: 50KVA</p> <p>Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step.</p> <p>Type of Regulator : Double plate type with electrolytic copper contacts.</p> <p>Input voltage : 250-400 volts.(3 phase)</p> <p>Output voltage : 400 ±10% volts.</p> <p>Frequency : 50 ±3 C/S.</p> <p>Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried.</p> <p>Insulation : Fiber glass insulations to tested parameters.</p> <p>Cooling : Naturally, Oil cooled</p> <p>Temp. Rise (Max): 30°C above ambient</p> <p>Mounting : On Uni-directional wheels.</p> <p>Correction rate : 30 volts per step</p> <p>Wave form distortion : virtually nil</p> <p>Duty cycle : 100% continuous.</p> <p>Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.</p> <p>Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.</p> <p>Load : Three phase induction motor load.</p> <p>Load Amperes (continuous)</p> <p>Overload in 24-hours operation: 10% above continuous Ampere rating.</p> <p>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).</p> <p>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.</p> <p>The voltage Stabilizer shall be accepted with manufacturers dully stamped test certificate and shall have name plate with specifications.</p>	3	No. 107401.00	322203.00

	Manufacturers test certificate to be appended .				
13.	Distribution Cables for Stage 1 <sup>st</sup> : Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 70mm sq. Copper cable for internal distribution wiring for stage 1st conforming to IS : 7098(part -1) 1988 with latest amendments. The job includes providing and fitting of suitable rating copper thimbles duly crimped and taped at conductor ends by hydraulic crimping tool. The job includes earth work in excavation wherever required for laying of cable underground.	150.00	Meter	1100.00	165000.00
14.	Distribution Cables for stage 2nd: Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 35mm sq. Copper cable for internal distribution wiring for stage 2nd conforming to IS : 7098(part -1) 1988 with latest amendments. The job includes providing and fitting of suitable rating copper thimbles duly crimped and taped at conductor ends by hydraulic crimping tool. The job includes earth work in excavation wherever required for laying of cable underground.	300.00	Meter	630.00	189000.00
15.	Providing and Fitting of 120 sq.mm single core LT 1.1 KV for stage 1st and 2nd, XLPE Armoured Aluminium Cable conforming to IS: 7089 part 1st as service line from the HT transformer/DG set to control panel including necessary thumbing, crimping, taping etc. NOTE:- The cable terminal ends for connection to switchgear at various requisite points shall be Al. Thimbles of appropriate size and connected by hydraulic crimp tool only for stage 1st and 2nd.	300.00	Meter	344.00	103200.00
16.	Providing and fitting of 3-Core flat submersible copper cable conforming to IS: 694 (Part 1st) – 1964 & IS: 694 (Part 2nd) - 1964 for 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:	50.00	Meter	1,105.00	55250.00
17.	Design, manufacturing ,providing , fitting, testing & commissioning of Star-delta Motor control Panel for stage 1 <sup>st</sup> . The Star-delta Motor control Panel shall be fabricated out of 2 mm 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:42 protection) with TP Aluminum Buses, complete with connection, internal wiring, neon indicators for each phase ,starter buttons, name plates, painting ,vents etc. 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. The control panel shall be furnished as per detail given below: Rated Voltage of the Panel ----- 440 Volts Frequency ----- 50 HZ No of Phases ----- Three <u>Enclosure Details</u> ----- Free Standing, Floor mounted, Compartmentalized Design. Material ----- CRS Thickness of sheet steel used ----- 02mm Application ----- Indoor Cable Entry ----- Bottom Painting ----- Shade Siemens grey.	1	Job	355811.00	355811.00

a) Main Circuit Breaker (Incomer MCCB)

Type ----- Front Operated micro processor release type on load 4 pole

Qty ----- 1 Nos

No. of poles ----- 4

Current Rating..... 250 Amp

Rated operational voltage----- 415 V AC  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking cap

at (415 volt A C , 50 Hz ) ----- 50kA

Type ----- Microprocessor control

**b) Distribution bus bar**

Type -----Electric grade AL 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 ----- 200 Amp

**d) Motor protection Circuit Breaker units**

Type ----- MPCB

Qty ----- 2 Nos

No. of poles-----3

Rated current -----160-200 Amp

Rated operational voltage----- 415 V  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking capacity

at (415 volt A C , 50 Hz ) -----36kA

**e) Starters (FASD) 60HP**

Power Specification -----3 phase, 415  $\pm$  15% v & 50 Hz

Contactors : MNX / Schneider

Line Contactor ----- AC3 70 A

Delta Contactor --- AC3 70 A

Star Contactor ----- AC3 70 A

Timer ----- Star Delta Electronic

Overload relay – direct/CT operated (60-110A range)

Coil Voltage : 220/240V

Qty ----- 2 No's

**f) Aux. panel for heating and lighting**

Circuit breaker---MCCB

Qnty---01 no.

No. of poles---04

Thermal release range -----63-80 A

Rated operational Voltage---415 $\pm$ 15%

Ultimate S.C. Breaking Capacity---35 KA at (415AC,50 Hz)

**g) Stabilization unit**

Qnty---01 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:**

Motor Protection Relay including other related accessories like single phase preventer relay, timer relay , overload-under load, phase difference etc.

Display ---- LED/LCD

Compact motor protection relay

Note: all setting is to be controlled at display.

Qty :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, Over Load

- Prolong starting, Locked Rotor.

-Single phase protection- Single Phasing condition- Phase Reversal condition- Phase Unbalance condition-Modes of Operation

**i) Auxiliary Protection**

Earth Fault Relay ----3 phase Earth fault, ground fault module

Type ----GF

Range 100-200A

MCB ---- MCB SP , 10A (10 Ka)

**j) 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)

- (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.

**18. Design, manufacturing ,providing , fitting, testing & commissioning of Star-delta Motor control Panel**

The Star-delta Motor control Panel shall be fabricated out of 2 mm 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:42 protection) with TP Aluminum Buses, complete with connection, internal wiring, neon indicators for each phase ,starter buttons, name plates, painting ,vents etc. 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.

The control panel shall be furnished as per detail given below:

Rated Voltage of the Panel ---- 440 Volts

Frequency ---- 50 HZ

No of Phases ---- Three

Enclosure Details ---- Free Standing, Floor mounted,

01

Job

335000.00

335000.00

Compartmentalized Design.

Material ----- CRS

Thickness of sheet steel used ----- 02mm

Application ----- Indoor

Cable Entry ----- Bottom

Painting ----- Shade Siemens grey.

**a) Main Circuit Breaker (Incomer MCCB)**

Type ----- Front Operated micro processor release type on load 4 pole

Qty ----- 1 Nos

No. of poles ----- 4

Current Rating..... 160-200 Amp

Rated operational voltage----- 415 V AC  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking cap

at (415 volt A C , 50 Hz ) ----- 50kA

Type ----- Microprocessor control

**b) Distribution bus bar**

Type -----Electric grade AL with red, blue & yellow tapings  
Of adequate section.

Rating -----160 Amp

**c) Change over Switch**

Qty ----- One

Type ----- Front Operated on load 4 pole (open execution)

Rating ----- 100 Amp

**d) Motor protection Circuit Breaker units**

Type ----- MPCB

Qty ----- 2 Nos

No. of poles-----3

Rated current -----84-125 Amp

Rated operational voltage----- 415 V  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking capacity

at (415 volt A C , 50 Hz ) -----36kA

**e) Starters (FASD) 20HP**

Power Specification -----3 phase, 415  $\pm$  15% v & 50 Hz

Contactors : MNX / Schneider

Line Contactor ----- AC3 50 A

Delta Contactor --- AC3 50 A

Star Contactor ----- AC3 40 A

Timer ----- Star Delta Electronic

Overload relay – direct/CT operated (35-75A range)

Coil Voltage : 220/240V

Qty ----- 03 No's

**f) Aux. panel for heating and lighting**

Circuit breaker---MCCB

Qty---01 no.

No. of poles---04

Thermal release range -----63-80 A

Rated operational Voltage---415 $\pm$ 15%

Ultimate S.C. Breaking Capacity---35 KA at (415AC,50 Hz)

**g) Stabilization unit**

Qty---01 no

	<p>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</p> <p><b>h) Protection Details:</b>  Motor Protection Relay including other related accessories like single phase preventer relay, timer relay , overload-under load, phase difference etc.  Display ----- LED/LCD  Compact motor protection relay  Note: all setting is to be controlled at display.  Qnty :01 nos)</p> <p><b>Protections :</b></p> <ul style="list-style-type: none"> <li>• Flush Mounting with display</li> <li>• Last trip data recording</li> <li>• Protections: <ul style="list-style-type: none"> <li>- Thermal Overload with pre- alarm</li> <li>- Short Circuit</li> <li>- Earth fault</li> <li>- Phase loss, Unbalance, Phase reversal</li> <li>- Under Current, Over Load</li> <li>- Prolong starting, Locked Rotor.</li> </ul> </li> <li>-Single phase protection- Single Phasing condition- Phase Reversal condition- Phase Unbalance condition-Modes of Operation</li> </ul> <p><b>i) Auxiliary Protection</b>  Earth Fault Relay -----3 phase Earth fault, ground fault module  Type ----GF  Range 100-200A  MCB ----- MCB SP , 10A (10 Ka)</p> <p><b>j) Metering Details:</b></p> <ul style="list-style-type: none"> <li>• <u>Incomers (Panel Mounted)</u> <ul style="list-style-type: none"> <li>(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</li> <li>(b) Analog voltmeter S/S operated (1 No)</li> </ul> </li> <li>• <u>(b) Outgoing</u>  (Analog voltmeter (0-500) S/S operated (1Nos) .  Analog Ammeters 0-100 Amp (2Nos) for both starters  Each outgoing with S/S CT operated.</li> </ul>				
19.	Design, manufacturing, providing, fitting, testing & commissioning of Star-delta Motor control Panel for stage 2 <sup>nd</sup> . The Star-delta Motor control Panel shall be fabricated out of 2 mm 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:42 protection) with TP Aluminum Buses, complete with connection, internal wiring, neon indicators for each phase ,starter buttons, name plates, painting ,vents etc. 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	01	Job	250000.00	250000.00

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.

The control panel shall be furnished as per detail given 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) Main Circuit Breaker (Incomer MCCB)**

Type ----- Front Operated micro processor release type on load 4 pole

Qty ----- 1 Nos

No. of poles ----- 4

Current Rating..... 100 Amp

Rated operational voltage----- 415 V AC  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking cap

at (415 volt A C , 50 Hz ) ----- 50kA

Type ----- Microprocessor control

**b) Distribution bus bar**

Type ----- Electric grade AL with red, blue & yellow tapings  
Of adequate section.

Rating ----- 100 Amp

**c) Change over Switch**

Qty ----- One

Type ----- Front Operated on load 4 pole (open execution)

Rating ----- 100 Amp

**d) Motor protection Circuit Breaker units**

Type ----- MPCB

Qty ----- 2 Nos

No. of poles-----3

Rated current -----63 Amp

Rated operational voltage----- 415 V  $\pm$  15%

Rated frequency ----- 50  $\pm$  3% Hz

Ultimate S.C Breaking capacity

at (415 volt A C , 50 Hz ) -----36kA

**e) Starters (FASD) 15HP**

Power Specification -----3 phase, 415  $\pm$  15% v & 50 Hz

Contactors : MNX / Schneider

Line Contactor ----- AC3 40 A

Delta Contactor --- AC3 40 A

Star Contactor ----- AC3 32 A

Timer ----- Star Delta Electronic

Overload relay – direct/CT operated (35-75A range)

Coil Voltage : 220/240V

Qty ----- 2 No's

**f) Aux. panel for heating and lighting**

	Circuit breaker--MCCB Qty—01 no. No. of poles--04 Thermal release range -----63-80 A Rated operational Voltage---415±15% Ultimate S.C. Breaking Capacity---35 KA at (415AC,50 Hz)				
	<p><b>g) Stabilization unit</b></p> <p>Qty---01 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</p>				
	<p><b>h) Protection Details:</b></p> <p>Motor Protection Relay including other related accessories like single phase preventer relay, timer relay , overload-under load, phase difference etc.</p> <p>Display ---- LED/LCD Compact motor protection relay Note: all setting is to be controlled at display. Qty :01 nos)</p> <p><b>Protections :</b></p> <ul style="list-style-type: none"> <li>• Flush Mounting with display</li> <li>• Last trip data recording</li> <li>• Protections: <ul style="list-style-type: none"> <li>- Thermal Overload with pre- alarm</li> <li>- Short Circuit</li> <li>- Earth fault</li> <li>- Phase loss, Unbalance, Phase reversal</li> <li>- Under Current, Over Load</li> <li>- Prolong starting, Locked Rotor.</li> </ul> </li> </ul> <p>-Single phase protection- Single Phasing condition- Phase Reversal condition- Phase Unbalance condition-Modes of Operation</p>				
20.	<p><b>i) Auxiliary Protection</b></p> <p>Earth Fault Relay ----3 phase Earth fault, ground fault module Type ----GF Range 100-200A MCB ----- MCB SP , 10A (10 Ka)</p> <p><b>j) Metering Details:</b></p> <ul style="list-style-type: none"> <li>• <u>Incomers (Panel Mounted)</u> <ul style="list-style-type: none"> <li>(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</li> <li>(b) Analog voltmeter S/S operated (1 No)</li> </ul> </li> <li>• <u>(b) Outgoing</u> (Analog voltmeter (0-500) S/S operated (1Nos). Analog Ammeters 0-100 Amp (2Nos) for both starters Each outgoing with S/S CT operated.</li> </ul>	3150	Kg	135.00	425250.00

	applying a priming coat of approved steel primer , including welding and bolted with special shaped washers etc. complete. The drawings and Dimensions for Gantry/Transformer Bed/Pumping Equipment Base will be provided by Site In Charge at the time of execution of job.				
21.	<p>Providing, installation and testing of manual type triple spur gear chain pulley block along with monorail geared travelling trolley for stage 1<sup>st</sup> and 2<sup>nd</sup> having following features</p> <p>Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears.</p> <p>Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collated, tested and have adequate in-built factor of safety for safer operation.</p> <p>Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below :</p> <ul style="list-style-type: none"> <li>i. Make = Reputed make</li> <li>ii. Capacity = 3 ton (P)</li> <li>iii. No. Of load chain falls = 2 or above</li> <li>iv. Min. Height of lift = 6 M</li> </ul>	3	Job	62970.00	188910.00
22.	<p>Illumination of Premises for stage 1<sup>st</sup> and 2<sup>nd</sup>:</p> <p>Providing and erection of 9 Mtr long Hot Dip Galvanized Octagonal pole (single Section) with bottom 150mm, top 75mm wide, thickness 3mm with 70 Microns Zinc coating having inside arrangement for providing of power connection along with following items.</p> <ol style="list-style-type: none"> <li>1) 3 Way Terminal Connector 20 Amp.</li> <li>2) 3 No MCB 8 Amp.</li> </ol> <p>The job includes fabrication, providing and fitting of three arm GI structure at the top having 120° angle between arms and each arm having 15° inclination with respect to horizontal plane. Each arm should be of 2' length and size and shape appropriate as per requirement of the luminary.</p> <p>The job also includes providing and fitting of required length of flexible multi strand 2 mm copper wire from each terminal connector to each holding arm.</p> <p>The pole is mounted on 1:2:4 Cement concreting of size not less than 2'x2'x6" (cost of concreting not included in the job) using 04 No anchor bolts of required size not less than 7" in length. The complete job includes earthing in GI Electrode as per relevant IS Code.</p>	2	Job	22226.00	44452.00
23.	<p>Providing, installation, testing and commissioning of area lighting 120 Watt LED (Street Light Type) on top of octagonal pole vide item No.29 for stage 1<sup>st</sup> and 2<sup>nd</sup></p> <p>Having following specs:</p> <p>Input: 90-240 V 50 Hz</p> <p>Power Factor: &gt;0.9</p> <p>Colour Temperature: 4K - 6.5K</p> <p>Beam Angle: 120° - 170°</p> <p>Lumens: &gt;12000</p> <p>Operating Temperature: -20°C to 60°C</p> <p>The LED is pressure die cast aluminum housing with power coated finish and having Ingress Protection up to IP-68.</p> <p>The LED is properly fitted on the arm of the pole and connected to the copper wire as provided in the high mast pole.</p>	8	Job	9486.00	75888.00
24.	Providing and installation of Junction Box with DP 32 A MCB to serve as Main switch for LED Lighting. The job includes making of electric connection to the circuit.	2	Job	2227.00	4454.00

25.	Providing, Installation and testing of 2KVA fully automatic voltage stabilizer with input voltage 70-240 V and output 220 V for stage 1 <sup>st</sup> and 2nd. The stabilizer shall be installed and connected to the electric circuit as per location provided by site in charge.	2	Job	8154.00	16308.00																																
26.	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 for stage 1 <sup>st</sup> and 2nd. 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.	20	Meter	1205.00	24100.00																																
27.	TOOL KIT For Maintenance for stage 1 <sup>st</sup> and 2 <sup>nd</sup> : 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 Double ended Spanner (Chrome plated) 02 sets complete Double ended Ring spanners chrome plated 02 sets complete Allen key set black finish 02 sets complete Combination Pliers insulated with thick C.A sleeve; size in mm 165, 210, 255 each – 02 No. Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No. Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No. Insulated screw Drivers <table border="1"><thead><tr><th>Blade length In mm</th><th>Blade dia in mm</th><th>Tip dimensions in mm</th><th>Quantity</th></tr></thead><tbody><tr><td>50</td><td>3</td><td>1.6 x 0.4</td><td>02</td></tr><tr><td>75</td><td>3</td><td>1.6 x 0.4</td><td>02</td></tr><tr><td>100</td><td>3</td><td>3 x 0.4</td><td>02</td></tr><tr><td>125</td><td>3.5</td><td>3.5 x 0.5</td><td>02</td></tr><tr><td>150</td><td>3.5</td><td>3.5 x 0.5</td><td>02</td></tr><tr><td>200</td><td>4</td><td>4 x 0.6</td><td>02</td></tr><tr><td>300</td><td>5</td><td>5 x 0.8</td><td>02</td></tr></tbody></table> 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.	Blade length In mm	Blade dia in mm	Tip dimensions in mm	Quantity	50	3	1.6 x 0.4	02	75	3	1.6 x 0.4	02	100	3	3 x 0.4	02	125	3.5	3.5 x 0.5	02	150	3.5	3.5 x 0.5	02	200	4	4 x 0.6	02	300	5	5 x 0.8	02	2	Job	28840.00	57680.00
Blade length In mm	Blade dia in mm	Tip dimensions in mm	Quantity																																		
50	3	1.6 x 0.4	02																																		
75	3	1.6 x 0.4	02																																		
100	3	3 x 0.4	02																																		
125	3.5	3.5 x 0.5	02																																		
150	3.5	3.5 x 0.5	02																																		
200	4	4 x 0.6	02																																		
300	5	5 x 0.8	02																																		
28.	Providing of good quality convenience and utility items as per following details for stage 1 <sup>st</sup> and 2 <sup>nd</sup> 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) 5lttrs 02 No's, cooking heater 01 No., room	2	Job	39619.00	79238.00																																

16305.00

	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 Chair table set consisting of chairs 04 No's, extra heavy Table 01 No. No's), Link locks,				
29.	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 for stage 1st and 2nd	189.50	Kg	114.00	21603.00
30.	Providing and fitting of 19 mm thick multi-layered 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 for stage 1st and 2 <sup>nd</sup>	36.00	Sft	150.00	5400.00
31.	Providing of solar/ electrical lantern chargeable on both solar & electrical 220v supply for stage 1st and 2 <sup>nd</sup>	2	Job	1911.00	3822.00
32.	Providing of 1 KW heat convector for operators for winter season for stage 1st and 2 <sup>nd</sup>	2	Job	1205.00	2410.00
33.	Providing and fitting of 01 No. LED (scroll type) sign board fabricated out of stainless steel and metal for stage 1st and 2 <sup>nd</sup>	18	Sft	3998.00	71964.00
34.	Providing & fitting of lighting points for ( machine room , operators room,) as per site requirement in 1.5 mm <sup>2</sup> 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 for stage 1st and 2nd	16	Job	1680.00	26880.00
35.	Providing fitting of heating points in 2.5mm <sup>2</sup> 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 for stage 1st and 2nd	4	Job	1470.00	5880.00
36.	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 for stage 1st and 2 <sup>nd</sup> .	48	Sft	250.00	12000.00
37.	Fabrication, providing and fitting of split type MS clamps 10 mm thick, 2 ft long and 3 inch wide for lowering and holding of pumping unit fitted for stage 1st and 2nd. The job includes the cost of required size of nuts and bolts. Size: 100mm	2	Job	1801.00	3602.00
<b>Estimated / advertised amount:</b>					<b>9346241.00</b>
<b>Percentage quoted by L1 firm</b>					<b>-13.05%</b>
<b>Total allotted amount: (Rupees Eighty One Lakh Twenty Six Thousand Five Hundred and Fifty Six Only)</b>					<b>8126556.00</b>

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