

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/ 4029-36
Dated: 25 - 08 - 023

M/s UEE Electrical Engineers Pvt. Ltd.
Shradhanand Marg Delhi - 110006
B/O: Main Bazaar, Kathua, J&K-184101
GST No: 01AACU1624K1ZR
Cell No: 9899963794

Adv. Cost:	Rs 41.387 Lacs
Allotted Cost:	Rs 39.939 Lacs

Subject: Electrical and mechanical works to be carried at WSS Gulshanpora Maidanpora Stage 1st and 2nd under JJM.

Reference: 1. This office e-NIT No.: e-NIT No. 07 of 2023-24, S. No. 07 issued under endorsement No.: PHE/MDNS/DB/702-14, dated: 09-05-2023.
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/5386-89, dated: 09-08-2023.

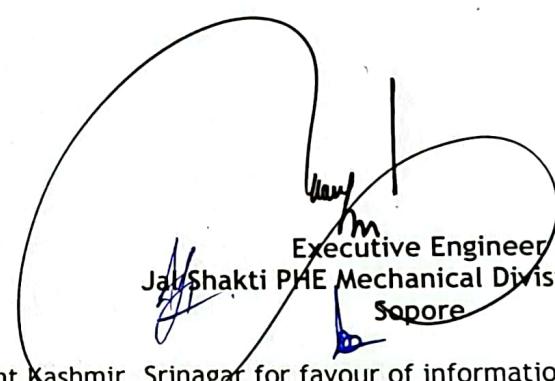
Dear Sir,

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 Gulshanpora Maidanpora Stage 1st and 2nd under JJM" is hereby awarded to your firm on the quoted/negotiated rates, as per 'General Terms & Conditions' and 'Schedule c 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 ~~P/D~~, for favour of information.
3. Superintending Engineer Jal Shakti (PHE) Mechanical Circle (North) Srinagar, for favour information.
4. Superintending Engineer Jal Shakti (PHE) Hydraulic Circle ~~Baramulla~~ HQ at ~~Sopore~~, for favo of information.
5. Executive Engineer Jal Shakti (PHE) Division _____, for favour of information.
6. Provisional Head, TPIA JJM Kashmir, (WAPCOS Limited) Corporate Office 76-C Institutional a 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.

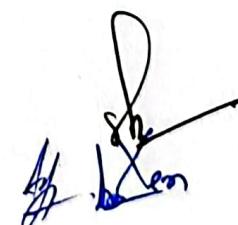
**Annexure "B" Schedule of cost and quantities
to this office Allotment Order No: PHE/MDNS/DB/_____ , dated: _____**

Name of work: Electrical and mechanical works to be carried at WSS Gulshanpora Maldanpora Stage 1st and 2nd under JJM

S. No.	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
1	<p>Design, supply, providing, installation, successful testing and commissioning of vertical turbine pumping unit as per IS 1710 driven by VT motor for pumping water from Nallah of following parameters.</p> <ul style="list-style-type: none"> • Site Condition Altitude = 1580 Meters/Greater (AMSL) Ambient Temperature = +40°C to - 15°C Relative Humidity = 60% Type of water = Raw water having specific gravity of unity average. Quality of water = Raw water with silt having medium to coarse sand. Sump/liner Bed Level = 8m/otherwise specified below from Machine floor level Water column in liner/sump = 2 m/as specified otherwise above from sump/liner bed level <p>A.PUMP</p> <ol style="list-style-type: none"> 1. Discharge = 20000 GPH 2. Type = Self water lubricated, VT pump, open line shaft. 3. Liquid to be handled = Raw Water 4. RPM = 1460 5. Head = 100 Meters 6. Efficiency = Not less than 85% 7. Impeller = Semi-enclosed mixed flow all bronze/stainless steel 8. Line shaft/head shaft = Stainless steel 9. Length of each line shaft = 1 m maximum 10. Total length of line shaft = 10 m/as specified (excluding Head shaft) 11. Impeller shaft = Stainless steel 12. Line shaft bearing = Cut less rubber/ Neoprene rubber procuring. 13. Line shaft coupling = Stainless steel 14. Suction Strainer = MS fabricated 15. Suction Bowl/Bell mouth= Cast Iron 16. Pump Bowl = Cast iron <p>17. Column pipe = Mild Steel of wall thickness not less than 8mm flanged type in assorted lengths</p> <p>18. VT Pump to be designed with minimum number of stages.</p> <p>B.Prime Mover</p> <ol style="list-style-type: none"> 1. Type = Vertical hollow shaft, AC squirrel cage induction motor 2. Power Supply = 03 Phase, 415V+ 15% AC 3. Frequency = 50Hz + 3% 4. RPM = 1450 Synchronous 5. Efficiency = Not less than 85% 6. HP = 5. HP = Corresponding to Head and discharge but not less than 60HP 7. Class of insulation = F or above 8. Type of duty = Continuous 9. Type of rotor = suitable among single squirrel cage / double squirrel cage , single or double skewed squirrel cage. 10. GD2 = suitable for above parameters. 11. Motor thrust bearing = Anti friction ball /roller bearing 12. Method of starting = star/delta <p>The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>C.Accessories</p> <ul style="list-style-type: none"> • Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc as per standard specification besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job. <p>Note: Providing of test certificate & Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned authority before</p>	job	1	8,96,000.00	8,96,000.00

ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount
<p>Size : 150</p> <p>Class: C (Heavy)</p> <p>Providing/supplying and fitting of 150mm G.I flanged Rising Main Including delivery manifold/Y junction with washout arrangement at site. The Pipe shall be hot dip Galvanized, class B conforming to IS 1239. The job includes providing and fitting of M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16). The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make.</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 quantity may vary as it is conditional to civil structure being constructed/as per site requirement.</p> <p>Dia = 150 mm</p> <p>Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units .</p> <p>The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber(Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions</p> <p>It shall have electrostatic epoxy coating(approved for drinking water) both inside and outside of the valve. 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>	Meters	20	3,434.00	68,680.00
<p>Size: 150mm</p> <p>PN: 1.6/16</p> <p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve(IRV) 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.</p> <p>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>	No	1	29,004.00	29,004.00

	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
5	<p>Supply, installation, testing and commissioning of Horizontal pumping unit as per IS 1520 with following specification:-</p> <p>Pump:-</p> <ol style="list-style-type: none"> 1. Type :- Horizontal shaft single or double suction.e 2. Discharge:- 12000 GPH 3. Head:- 35 Meter 4. Liquid to be handled: Clear water 5. RPM: 1440 D. <p>Material of construction</p> <ol style="list-style-type: none"> 1.Impeller:- Stainless steel 2.Shaft:- SS410 3.Pump casing:- Cast Iron <p>The pump shall confirm to IS-1520 code</p> <p>MOTOR :-</p> <ol style="list-style-type: none"> A) Type :- Horizontal squirrel cage Induction Type B) No of phases: $415 \pm 15\%$, 03 phase, 50 Hz, AC supply C) Winding:-Copper wound squirrel cage D) Type of enclosure:-SPDP/TEFC E) Method of cooling:- Air cooled with fan mounted F)Method of Starting: star delta 	Job	2	3,20,000.00	6,40,000.00
6	<p>PRIME MOVER:</p> <ol style="list-style-type: none"> 1. Type=AC Squirrel cage induction motor SPDP/TEFC 2. Power supply= $415 \pm 10\%$, volts 30 phase, $50 \pm 5\%$ Hz. AC 3. Efficiency = Not less than 85 % 4. Class of Insulation= B or F or above 5. H.P= Suitable for pump not less than 15HP 6. R.P.M= 1440 Syn. <p>The pump-motor should be mounted on a common base frame fabricated out of M.S channel of suitable size and duly fitted with T- type foundation bolts /nuts and washers to make the pumping unit vibration free. The pump and motor should be coupled through suitable coupling. The coupling faces checked for both angular and axial alignment with the help of tapered gauges/feeler gauges or dial indicator. Job includes testing and commissioning of pumping unit on full load at site.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p>				
6	<p>Supply, installation, testing and commissioning of Horizontal pumping unit as per IS 1520 with following specification:-</p> <p>Pump:-</p> <ol style="list-style-type: none"> 1.Type :- Horizontal shaft single or double suction.e 2. Discharge:- 8000 GPH 3. Head:- 45 Meter 4. Liquid to be handled: Clear water 5. RPM: 1440 D. <p>Material of construction</p> <ol style="list-style-type: none"> 1.Impeller:- Stainless steel 2.Shaft:- SS410 3.Pump casing:- Cast Iron <p>The pump shall confirm to IS-1520 code</p> <p>MOTOR :-</p> <ol style="list-style-type: none"> A) Type :- Horizontal squirrel cage Induction Type B) No of phases: $415 \pm 15\%$, 03 phase, 50 Hz, AC supply C) Winding:-Copper wound squirrel cage D) Type of enclosure:-SPDP/TEFC E) Method of cooling:- Air cooled with fan mounted F)Method of Starting: star delta 	job	1	2,94,400.00	2,94,400.00



S. No.	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)
1	<p>PRIME MOVER:</p> <ol style="list-style-type: none"> Type=AC Squirrel cage induction motor SPDP/TEFC Power supply= $415 \pm 10\%$, volts 30 phase, $50 \pm 5\%$ Hz. AC Efficiency = Not less than 85 % Class of Insulation= B or F or above H.P= Suitable for pump not less than 12.5 HP R.P.M= 1440 Syn. <p>The pump-motor should be mounted on a common base frame fabricated out of M.S channel of suitable size and duly fitted with T-type foundation bolts/nuts and washers to make the pumping unit vibration free. The pump and motor should be coupled through suitable coupling. The coupling faces checked for both angular and axial alignment with the help of tapered gauges/feeler gauges or dial indicator. Job includes testing and commissioning of pumping unit on full load at site.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p>			
7	<p>Creation of pole mounted, outdoor type Electric Sub Station by way of S/I/T/C of 11/0.433 KVA , 3 Phase Distribution Transformer with Bimetallic Terminal connectors Energy level -2 Aluminum wound</p> <p>Specifications conforming to IS : 1180 (Part 1) 2014 with latest amendments</p> <p>Type of cooling: ONAN.Rating: 100 KVA HT Transformer, 3 phase (Level 2).</p> <p>Manufacturers certificate be apended</p> <p>Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments.</p> <p>Type: HT/LT Transformer</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>	Job	1	2,20,000.00
8	Providing and fitting G.I Channel /Angle/ Flat /Riser of sizes including clamps	Kg	150	135.00
9	<p>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.</p>	Set	2	12,527.00
10	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation.	Set	1	5,322.00
11	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type	Set	1	8,281.00
12	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	Unit	2	8,085.00
13	<p>Earthing of substation --Excavation of earth pit of dia 650 mm & depth 3000 mm, installation of Earthing pipe of 40 mm</p> <p>Nominal bore & 4mm wall thickness & length 2.5 mtr long as Per IS 1239.GI Strip for neutral earthing of size 25 mm x 3 mm for connection of transformer body,neutral,G.O Set, lightening arrestor, LT Control Panel and voltage stablizer as per IS 2629/85, GI nuts & bolts,refilled with earth enhancement materials and earth Chamber made of brick concrete with RCC slab cover</p>	Job	5	11,508.00
4	P/L of ACSR conductor of size 0.05 as per the relevant IS standard	Meters	100	59.00
5	Providing and fitting of 3"x5/8" Galvanized nuts and bolts	Kg	40	152.00
6	Providing and fitting of LT Distribution box for H.T transformer with MCCB For incomer and SFU for outgoing circuits for stage 1st and 2nd	Job	2	43,364.00
				86,728.00

	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
	Distribution Cables: Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 35mm sq. Copper cable for internal distribution wiring for stage 1st and 2nd	Meters	200	557.00	1,11,400.00
18	Distribution Cables: Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 70mm sq. Copper cable for internal distribution wiring for stage 1st and 2nd	Meters	100	1,121.00	1,12,100.00
19	<p>Design, manufacturing ,providing , fitting, testing & commissioning of Star-delta Motor control Panel for stage 1st and 2nd</p> <p>The Star-delta Motor control Panel shall be fabricated out of 2 mm CRCA Sheets</p> <p>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.</p> <p>The control panel shall be furnished as per detail given below:</p> <p>Rated Voltage of the Panel ---- 440 Volts</p> <p>Frequency ---- 50 Hz</p> <p>No of Phases ---- Three</p> <p>Enclosure Details ---- Free Standing, Floor mounted, Compartmentalized Design.</p> <p>Material ---- CRS</p> <p>Thickness of sheet steel used ---- 02mm</p> <p>Application ---- Indoor</p> <p>Cable Entry ---- Bottom</p> <p>Painting ---- Shade Siemens grey.</p> <p>a) Main Circuit Breaker (Incomer MCCB)</p> <p>Type ---- Front Operated micro processor release type on load 4 pole</p> <p>Qty ---- 1 Nos</p> <p>No. of poles ---- 4</p> <p>Current Rating..... 250 Amp</p> <p>Rated operational voltage---- 415 V AC ± 15%</p>	Job	1	4,09,556.00	4,09,556.00
	<p>Rated frequency ---- 50 ± 3% Hz</p> <p>Ultimate S.C Breaking cap at (415 volt A C , 50 Hz) ---- 50kA</p> <p>Type ---- Microprocessor control</p> <p>b) Distribution bus bar</p> <p>Type ---- Electric grade AL with red, blue & yellow tapings of adequate section.</p> <p>Rating ----200 Amp</p> <p>c) Change over Switch</p> <p>Qty ---- One</p> <p>Type---- Front Operated on load 4 pole (open execution)</p> <p>Rating ---- 200 Amp</p> <p>d) Motor protection Circuit Breaker units</p> <p>Type ---- MPCB</p> <p>Qty ---- 2 Nos</p> <p>No. of poles----3</p> <p>Rated current ----160-200 Amp</p> <p>Rated operational voltage----- 415 V ± 15%</p> <p>Rated frequency ---- 50 ± 3% Hz</p> <p>Ultimate S.C Breaking capacity at (415 volt A C , 50 Hz) ----36kA</p> <p>e) Starters (FASD) 75HP</p> <p>Power Specification ----3 phase, 415 ± 15% v & 50 Hz</p> <p>Contactors : MNX / Schneider</p> <p>Line Contactor ----- AC3 110 A</p> <p>Delta Contactor --- AC3 110 A</p> <p>Star Contactor ----- AC3 90 A</p>				

S. No.	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Am.
	<p>Overload relay – direct/CT operated (60-110A range)</p> <p>Coil Voltage : 220/240V</p> <p>Qty ----- 2 No's</p> <p>f) Aux. panel for heating and lighting</p> <p>Circuit breaker—MCCB</p> <p>Qnty---01 no.</p> <p>No. of poles---04</p> <p>Thermal release range -----63-80 A</p> <p>Rated operational Voltage---415+15%</p> <p>Ultimate S.C. Breaking Capacity---35 KA at (415AC,50 Hz)</p> <p>g) Stabilization unit</p> <p>Qnty---01 no</p> <p>Rating--- 1 KvA single phase automatic voltage stabilizer</p> <p>Input :90V-300</p> <p>Out Put : 220/240 (as per coil voltage of contractors)</p> <p>Enclosure--- to be housed within the cubical panel in separated chamber with additional meter , LED fitted outer side</p> <p>MCB DP ---10A----1nos</p> <p>h) Protection Details:</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</p> <p>Compact motor protection relay</p> <p>Note: all setting is to be controlled at display.</p> <p>Qnty :01 nos)</p> <p>Protections :</p> <ul style="list-style-type: none"> • 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 <p>i) Auxiliary Protection</p> <p>Earth Fault Relay ——3 phase Earth fault, ground fault module</p> <p>Type ——GF</p> <p>Range 100-200A</p> <p>MCB —— MCB SP , 10A (10 Ka)</p> <p>j) Metering Details:</p> <ul style="list-style-type: none"> •Incomers (Panel Mounted) <ul style="list-style-type: none"> (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 <ul style="list-style-type: none"> (Analog voltmeter (0-500) S/S operated (1Nos). Analog Ammeters 0-100 Amp (2Nos) for both starters Each outgoing with S/C CT operated 				

	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
20	<p>Design, manufacturing ,providing , fitting, testing & commissioning of Star-delta Motor control Panel</p> <p>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.</p> <p>The control panel shall be furnished as per detail given below:</p> <p>Rated Voltage of the Panel ----- 440 Volts</p> <p>Frequency ----- 50 HZ</p> <p>No of Phases ----- Three</p> <p>Enclosure Details ----- Free Standing, Floor mounted, Compartmentalized Design.</p> <p>Material ----- CRS</p> <p>Thickness of sheet steel used ----- 02mm</p> <p>Application ----- Indoor</p> <p>Cable Entry ----- Bottom</p> <p>Painting ----- Shade Siemens grey.</p> <p>a) Main Circuit Breaker (Incomer MCCB)</p> <p>Type ----- Front Operated micro processor release type on load 4 pole</p> <p>Qty ----- 1 Nos</p> <p>No. of poles ----- 4</p> <p>Current Rating..... 200 Amp</p> <p>Rated operational voltage----- 415 V AC ± 15%</p>	Job	2	2,38,920.00	4,77,840.
	<p>Rated frequency ----- 50 ± 3% Hz</p> <p>Ultimate S.C Breaking cap. at (415 volt A C , 50 Hz) ----- 50kA</p> <p>Type ----- Microprocessor control</p> <p>b) Distribution bus bar</p> <p>Type ----- Electric grade AL with red, blue & yellow tapings of adequate section.</p> <p>Rating ----- 160 Amp</p> <p>c) Change over Switch</p> <p>Qty ----- One</p> <p>Type ----- Front Operated on load 4 pole (open execution)</p> <p>Rating ----- 100 Amp</p> <p>d) Motor protection Circuit Breaker units</p> <p>Type ----- MPCB</p> <p>Qty ----- 2 Nos</p> <p>No. of poles-----3</p> <p>Rated current -----84-125 Amp</p> <p>Rated operational voltage----- 415 V ± 15%</p> <p>Rated frequency ----- 50 ± 3% Hz</p> <p>Ultimate S.C Breaking capacity at (415 volt A C , 50 Hz) -----36kA</p> <p>e) Starters (FASD) 20HP</p> <p>Power Specification -----3 phase, 415 ± 15% v & 50 Hz</p> <p>Contactors : MNX / Schneider</p> <p>Line Contactor ----- AC3 50 A</p> <p>Delta Contactor --- AC3 50 A</p> <p>Star Contactor ----- AC3 40 A</p>				

S. No.	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amt
	<p>Timer ----- Star Delta Electronic Overload relay – direct/CT operated (35-75A range) Coil Voltage : 220/240V, Qty ----- 02 No's</p> <p>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> <p>g) Stabilization unit 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>h) Protection Details: Motor Protection Relay including other related accessories like single phase prevention 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</p>				
	<ul style="list-style-type: none"> • 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. <p>-Single phase protection- Single Phasing condition- Phase Reversal condition- Phase Unbalance condition-Modes of Operation</p> <p>i) Auxiliary Protection Earth Fault Relay ----3 phase Earth fault, ground fault module Type ——GF Range 100-200A MCB —— MCB SP , 10A (10 Ka)</p> <p>j) Metering Details: •Incomers (Panel Mounted) <ol style="list-style-type: none"> Multi-Function Meters LCD Display (1 No) Voltage of each phase , Current of each phase 3Ø power (Active, Apparent) , 3Ø Power factor Frequency , Energy 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.</p>				

	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
21	<p>Providing, installation and testing of Heavy Duty manua type triple spur gear chain hoist block along with monorail geared travelling trolley having following features :-</p> <p>Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears.</p> <p>Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collaborated, 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"> 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 	Job	1	80,604.00	80,604.00
22	<p>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.</p> <p>1) 3 Way Terminal Connector 20 Amp. 2) 3 No MCB 8 Amp.</p> <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</p>	Job	2	24,978.00	49,956.C
23	<p>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:</p> <p>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</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>	Job	8	9,753.00	78,024.
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.	Job	2	2,378.00	4,756
25	Providing, Installation and testing of 2KVA fully automatic 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	2	9,164.00	18,328
26	<p>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:-</p> <p>Composition: Rubber (synthetic mats for electrical purpose) for stage 1st and 2nd</p> <p>Thickness: - 2.5mm Size: - 1M wide.</p> <p>The rubber mats shall be accepted with manufacturers test certificate.</p>	Meters	20	1,326.00	26,520

S. No.	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)																																			
27	<p>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</p> <table> <tbody> <tr><td>50</td><td>3</td><td>1.6 x 0.4</td><td>02</td><td></td></tr> <tr><td>75</td><td>3</td><td>1.6 x 0.4</td><td>02</td><td></td></tr> <tr><td>100</td><td>3</td><td>3 x 0.4</td><td>02</td><td></td></tr> <tr><td>125</td><td>3.5</td><td>3.5 x 0.5</td><td>02</td><td></td></tr> <tr><td>150</td><td>3.5</td><td>3.5 x 0.5</td><td>02</td><td></td></tr> <tr><td>200</td><td>4</td><td>4 x 0.6</td><td>02</td><td></td></tr> <tr><td>300</td><td>5</td><td>5 x 0.8</td><td>02</td><td></td></tr> </tbody> </table> <p>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.</p>	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		Job	2	31,724.00	63,448.00
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	<p>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 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,</p>	Job	2	43,581.00	87,162.00																																			
9	<p>Fabrication of 6'x3' 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.</p>	Kg	189.5	102.00	19,329.00																																			
	<p>Providing and fitting of 19 mm thick multilayered ply Ply wood board to be fitted on the angle iron beds 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 2nd</p>	sft	36	154.00	5,544.00																																			
	<p>Providing of solar/electrical lantern chargeable on both solar & electrical 220v supply for stage 1st and 2nd</p>	Job	2	1,430.00	2,860.00																																			
	<p>Providing of 1 KW heat convector for operators for winter season for stage 1st and 2nd</p>	Job	2	902.00	1,804.00																																			
	<p>Providing and fitting of 01 No. LED (scroll type) sign board fabricated out of stainless steel and metal showing the names of water supply scheme and the Department. Size: 6'x1'6" = 9 sft for stage 1st and 2nd</p>	Sft	18	4,398.00	79,164.00																																			

ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
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 2nd	sft	24	280.00	6,720.00
35 Providing & fitting of lighting points for (machine room , operators room,) as per site requirement in 1.5 mm ² 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	Job	10	1,760.00	17,600.00
36 Providing fitting of heating points in 2.5mm ² 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	Job	2	1,540.00	3,080.00
37 Fabrication, providing and fitting of split type M5 clamps 10 mm thick and 4" wide for lowering and holding of VT pumping unit as per sample. The job includes the cost of required size of nuts and bolts.	job	2	2,750.00	5,500.00
38 Providing and Fitting of 50 sqmm 3.5 core LT 1.1 KV, XLPE Armoured Aluminium Cable conforming to IS: 7089 part 1st as service line from the HT transformer/DG set 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 appropriate size and connected by hydraulic crimp tool only for stage 1st and 2nd	meters	50	520.00	26,000.00
39 Providing and Fitting of 50 sqmm single core LT 1.1 KV, XLPE Armoured Aluminium Cable conforming to IS: 7089 part 1st as service line from the HT transformer/DG set 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 appropriate size and connected by hydraulic crimp tool only for stage 1st and 2nd	meters	100	361.00	36,100.00
Total Amount				41,38,761.00
Percentage quoted by L1 firm:				-3.50%
Total: (Rupees Thirty Nine Lakh Ninety Three Thousand Nine Hundred and Four Only)				39,93,904.00

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