

No.: PHE/MDNS/DB/  
Dated: 25-08-2023

4050-56

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

Adv. Cost:	Rs 78.916 Lacs
Allotted Cost:	Rs 76.238 Lacs

Subject: Various electro-mechanical works to be carried out at WSS Bonichakal Jeelpora under JJM.

Reference: 1. This office e-NIT No.: e-NIT No. 04 of 2023-24, S. No. 01 issued under endorsement No.: PHE/MDNS/DB/274-86, dated: 19-04-2023.  
2. Authorization awarded by Member Secretary DJJM Superintending Engineer Jal Shakti (PHE) Hydraulic Circle Baramulla/Bandipore HQ at Sopore issued vide No. SE/Hyd/DB/5221-35, dated: 08-08-2023.

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Dear Sir,

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

Annexure A: General Terms & Conditions.

Annexure B: Schedule of cost and quantities.

Encl.    leaves

Executive Engineer  
Jal Shakti PHE Mechanical Division (North)  
Sopore

Copy to the:

1. Chief Engineer Jal Shakti (PHE) Department Kashmir, Srinagar for favour of information.
2. District Development Commissioner BSA 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 BSA HQ at Sopore, for favour of information.
5. Executive Engineer Jal Shakti (PHE) Division BSA, 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 BSA for information & necessary action.
8. File concerned.

Annexure "B" Schedule of cost and quantities  
to this office Allotment Order No: PHE/MDNS/DB/~~150-56~~ dated: 25/12/2023

of work:	Various electro-mechanical works to be carried out at WSS Bonichakal Jeelpora under JJM	Unit	Qty.	Rate	Amount
WSS Bonichakal Jeelpora (Stage 1st)	<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"> <li>• Site Condition</li> <li>Altitude = 1580 Meters/Greater (AMSL)</li> <li>Ambient Temperature = +40°C to - 15°C</li> <li>Relative Humidity = 60%</li> <li>• Type of water = Raw water having specific gravity of unity average.</li> <li>• Quality of water = Raw water with silt having medium to coarse sand.</li> <li>• Sump/liner Bed Level = 8m/otherwise specified below from Machine floor level</li> <li>• Water column in liner/sump = 2 m/as specified otherwise above from sump/liner bed level</li> </ul> <p>A. PUMP</p> <ol style="list-style-type: none"> <li>1. Discharge = 12000 GPH</li> <li>2. Type = Self water lubricated, VT pump, open line shaft.</li> <li>3. Liquid to be handled = Raw Water</li> <li>4. RPM = 1460</li> <li>5. Head = 70 Meters</li> <li>6. Efficiency = Not less than 50%</li> <li>7. Impeller = Semi-enclosed mixed flow all bronze/stainless steel</li> <li>8. Line shaft/head shaft = Stainless steel</li> <li>9. Length of each line shaft = 1 m maximum</li> <li>10. Total length of line shaft = 10 m/as specified (excluding Head shaft)</li> <li>11. Impeller shaft = Stainless steel</li> <li>12. Line shaft bearing = Cut less rubber/ Neoprene rubber</li> <li>13. Pump housing = Cast iron</li> <li>14. Suction Strainer = MS fabricated</li> <li>15. Suction Bowl/Bell mouth= Cast Iron</li> <li>16. Pump Bowl = Cast iron</li> <li>17. Column pipe = Mild Steel of wall thickness not less than 8mm flanged type in assorted lengths</li> <li>18. VT Pump to be designed with minimum number of stages.</li> </ol> <p>B. Prime Mover</p> <ol style="list-style-type: none"> <li>1. Type = Vertical hollow shaft, AC squirrel cage induction motor</li> <li>2. Power Supply = 03 Phase, 415V+ 15% AC</li> <li>3. Frequency = 50Hz + 3%</li> <li>4. RPM = 1450 Synchronous</li> <li>5. Efficiency = Not less than 90%</li> <li>6. HP = Corresponding to Head and discharge but not less than 30HP.</li> <li>7. Class of insulation = F or above</li> <li>8. Type of duty = Continuous</li> <li>9. Type of rotor = suitable among single squirrel cage / double squirrel cage , single or double skewed squirrel cage.</li> <li>10. GD2 = suitable for above parameters.</li> <li>11. Motor thrust bearing = Anti friction ball /roller bearing</li> <li>12. Method of starting = star/delta</li> </ol> <p>The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>C. Accessories</p> <ul style="list-style-type: none"> <li>• Each pump unit shall be provided with suitable discharge head with proper stiffening box arrangement, non-reverse ratchet, coupling etc as per standard specification besides all other accessories required for satisfactory performance and mechanical works required for installation of pumping unit at site are included in the job.</li> </ul> <p>Note: Providing of test certificate &amp; Characteristic Curve of pumping equipment is compulsory and pumping</p>	job	2	7,50,000.00	15,00,000.00

1239. The job incl  
 Standard elec  
 Flanges /  
 thicknes  
 5

S. No.	Description	Unit	Qty.	Rate
3	<p>Fabrication Providing and fitting of modular control panel as per the below mentioned technical specification. The technical details/ Ratings of various components of Modular Control Panel are given Below</p> <p>a. Main Circuit Breaker (Incommer MCCB) of rating = Thermal release range 160-200A with S.C. Breaking Capacity of 50kA=(02No's)</p> <p>b. Changeover Switch of rating = 200Amp (01No.) ,</p> <p>c. Bus Bar copper = 200A (01No.)</p> <p>d. Motor Breakup Protection MCCB of rating = Thermal release range 125-160A With S.C. Breaking Capacity of 36kA = (02 Nos.)</p> <p>e. FASD starters: Motor rating 3-phase 415V, 50HZ AC-3 Duty with Relay range of 36-60 Amp (02No's)</p> <p>f. Auxillary MCB for Heating/Lighting = 63 Amp. (01No.)</p> <p>Power Specs = 3Φ, 415 + 15% V, 50 + 3 % Hz.</p> <p>Relay range = 11- 18 A.</p> <p>Protection = Under voltage/ over Voltage</p> <p>Qty = 02 No's</p> <p>f) Auxiliary MCCB for Heating/Lighting:</p> <p>Circuit Breaker = MCCB (Outgoing)</p> <p>Qty. = 1 No.</p> <p>No. of poles = 4P</p> <p>Current Rating = 63 Amp.</p> <p>Rated operational voltage = 415 V + 15 %</p> <p>Ultimate S.C Breaking Cap. at (415V AC, 50 Hz) = 25 KA</p> <p>g) Motor Protection Relay:</p> <p>Digital Motor Protection Relay with LCD Display for 3-phase supply with following protections suitable for the Moduar Control Pannel:-</p> <p>Protections = Thermal Overload with pre-alarm, Short Circuit, PhaseLoss, Unbalance, Phase reversal, Under Current, Prolong statrtng, Locked Rotor &amp; Earth fault and over current</p> <p>Qty. = 02 No's (01 No. for each starter)</p> <p>h) M-power module for mobile starter for submersible motor 1P/3P 3 wire</p> <p>Quantity – 02 Nos.</p> <p>IVRS Languages – English, Hindi</p> <p>Suitable Region- North India</p> <p>The panel shall be provided with phase indicators (03 NO) and digital ammeter of range 0-60 A, digital voltmeter of range 0-500 V, and digital frequency meter (01 No each). The enclosure of the panel shall be of excellent fit and finish, corrosion resistant and powder coated gliding hinges for smooth and noiseless movement of windows and advanced locking arrangements.</p>	Job	1	2,72,539.00
4	<p>Providing, fitting, testing and commissioning of 75 KVA Voltage Stabilizer as per specifications below:</p> <p>Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step.</p> <p>Type of Regulator : Double plate type with electrolytic copper contacts.</p> <p>Input voltage :250-400 volts.(3 phase)</p> <p>Output voltage :400 ±10% volts.</p> <p>Frequency :50 ±3 C/S.</p> <p>Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried.</p> <p>Insulation : Fiber glass insulations to tested parameters.</p> <p>Cooling :Naturally, Oil cooled</p> <p>Temp. Rise (Max):30°C above ambient</p> <p>Mounting :On Uni-directional wheels.</p> <p>Correction rate :30 volts per step</p> <p>Wave form distortion :virtually nil</p> <p>Duty cycle :100% continuous.</p> <p>Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.</p> <p>Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.</p> <p>Load : Three phase induction motor load.</p> <p>Load Amperes (continuous)</p> <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</p> <p>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>	job	2	1,63,721.00
				3,27,442.00

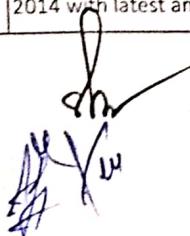
	Description	Unit	Qty.	Rate	Amount
5	<p>Providing/supplying and fitting of 150mm G.I flanged Rising Main including delivery manifold with shout arrangement at site. The Pipe shall be hot dip Galvanized, class B and C conforming to IS 1239. The job includes providing and fitting of M.S Flanges conforming 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</p>	Meter	80	2,893.00	2,31,440.00
6	<p>Providing and fitting of 150mm, 90-120 degree bend/elbow to be fabricated out of Class C GI pipe, 1 m length and flanged on both ends and to make it leak proof. The flanges shall be M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sidesGI bend with flanges The Flanges shall be MS conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes prviding and fitting of nuts, bolts, gaskets etc as per site requirement.</p>	Job	12	5,728.00	68,736.00
7	<p><b>Dia = 150 mm</b></p> <p>Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/sludge valves as per IS14846 for regulating the water supply outside the pumping units . The body and bonnet of the valve shall be of ductile iron, wedge with fully vulcanized EPDM rubber(Approved for drinking water) and NBR seal. The Gate/Sluice valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions</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. 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>	Job	3	25,977.00	77,931.00
8	<p><b>Size: 150 mm</b></p> <p><b>PN: 1.6/16</b></p> <p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve( NRV) as per IS 5312. The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions.</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. 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>	Job	3	32,205.00	96,615.00
9	<p>Fabrication of gantry mechanism/CGI shed/pump base frame by way of providing Structural steel in built up sections , trusses and framed work, including cutting , hoisting , grouting, fixing in position and applying a priming coat of steel primer and 02 coats of paint of approved shade all complete welded.</p> <p>The drawings and Dimensions for Gantry/CGI shed/pump base frame etc will be provided by Site In Charge at the time of execution of job.The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.</p>	Kg	1450	135.00	1,95,750.00

S. No.	Description	Unit	Qty.	Rate
10	Fabrication, providing and fitting of split type MS clamps 12 mm thick, 2 ft long and 3 inch wide for lowering and holding of pumping unit fitted. The job includes the cost of required size of nuts and bolts. Size: 150 mm	job	2	3,200.00
11	Providing, fitting, testing and commissioning of 50MM ARV (Air Release valve) as per IS 14845 to be fitted to G.I rising Main. The ARV Shall have the following specifications:- i. Valve type - single chamber, single/double orifice. ii. End connection - flanged ends to IS 1538 iii. Working temperature - 45oc to -150 c iv. Test pressure - body / seat 2.5 x PN v. Sealing ring - EPDM vi. Construction -ductile iron with stainless steel floats vii. Coating - epoxy with corrosion resistance Besides the above works, The job also cost on account of P/F R.I gasket, GI Pipe, nuts and bolts required for installation of ARV and arrangement of gas cutter/ welding set at site.	No	1	19,394.00
12	<b>WSS Bonichakal Jeelpora (Stage 2nd)</b> 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. • 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 <b>A. PUMP</b> 1. Discharge = 10000 GPH 2. Type = Self water lubricated, VT pump, open line shaft. 3. Liquid to be handled = Clear Water 4. RPM = 1460 5. Head = 40 Meters, 6. Efficiency = Not less than 50% 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 13. Line shaft coupling = Stainless steel <del>14. Casing</del> 15. Suction Bowl/Bell mouth= Cast Iron 16. Pump Bowl = Cast iron 17. Column pipe = Mild Steel of wall thickness not less than 8mm flanged type in assorted lengths 18. VT Pump to be designed with minimum number of stages. <b>B. Prime Mover</b> 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 90% 6. HP = Corresponding to Head and discharge but not less than 20HP. 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 The motor should be able to withstand fluctuations in voltage and should be conforming to latest IS specifications. <b>C. Accessories</b> • 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	job	2	6,40,000.00
13				12,80,000.00

	Description	Unit	Qty.	Rate	Amount
14	<p>Fabrication Providing and fitting of modular control panel as per the below mentioned technical specification. The technical details/ Ratings of various components of Modular Control Panel are given Below</p> <p>a. Main Circuit Breaker (Incomer MCCB) of rating = Thermal release range 160-200A with S.C. Breaking Capacity of 50kA=(02No's)</p> <p>b. Changeover Switch of rating = 100Amp (01No.) ,</p> <p>c. Bus Bar copper = 200A (01No.)</p> <p>d. Motor Breakup Protection MCCB of rating = Thermal release range 100-125A With S.C. Breaking Capacity of 36kA = (02 Nos.)</p> <p>e. FASD starters: Motor rating 3-phase 415V, 50HZ AC-3 Duty with Relay range of 30-50 Amp (02No's)</p> <p>f. Auxillary MCB for f.Heating/Lighting = 63 Amp. (01No.)</p> <p>Power Specs = 3 <math>\Phi</math>, 415 + 15% V, 50 + 3 % Hz.</p> <p>Relay range = 11- 18 A.</p> <p>Protection = Under voltage/ over Voltage</p> <p>Qty = 02 No's</p> <p>f) Auxiliary MCCB for Heating/Lighting:</p> <p>Circuit Breaker = MCCB (Outgoing)</p> <p>Qty. = 1 No.</p> <p>No. of poles = 4P</p> <p>Current Rating = 63 Amp.</p> <p>Rated operational voltage = 415 V + 15 %</p> <p>Ultimate S.C Breaking Cap. at (415V AC, 50 Hz) = 25 KA</p>	Job	1	2,34,576.00	2,34,576.00
15	<p>g) Motor Protection Relay:</p> <p>Digital Motor Protection Relay with LCD Display for 3-phase supply with following protections suitable for the Moduar Control Pannel:-</p> <p>Protections = Thermal Overload with pre-alarm, Short Circuit, PhaseLoss, Unbalance, Phase reversal, Under Current, Prolong statrtng, Locked Rotor &amp; Earth fault and over current</p> <p>Qty. = 02 No's (01 No. for each starter)</p> <p>h) M-power module for mobile starter for submersible motor 1P/3P 3 wire</p> <p>Quantity – 02 Nos.</p> <p>IVRS Languages – English, Hindi</p> <p>Suitable Region- North India</p> <p>The panel shall be provided with phase indicators (03 N0) and digital ammeter of range 0-60 A, digital voltmeter of range 0-500 V, and digital frequency meter (01 No each). The enclosure of the panel shall be of excellent fit and finish, corrosion resistant and powder coated gliding hinges for smooth and noiseless movement of windows and advanced locking arrangements.</p>				
15	<p>Supply, Installation, Testing &amp; Commissioning of 10000gph, Open Well Pumping Units as per IS 14220 at Filter Water Stage.</p> <p>PUMP: -</p> <ul style="list-style-type: none"> <li>Type of pump : Open well Submersible Pump (Horizontal)</li> <li>Quality of Water to be handled : Filter water/Raw water</li> </ul> <p>METERIAL OF CONSTRUCTION:</p> <ul style="list-style-type: none"> <li>Pump Casing : Cast Iron</li> <li>Impeller : SS</li> <li>Pump Shaft : Stainless Steel 410</li> <li>Motor Body : Cast Iron/SS</li> <li>Sealing : Dual mech. seal</li> </ul> <p>② The bowl plate shall be provided with name plate giving complete specifications</p> <p>② MOTOR: -</p> <ul style="list-style-type: none"> <li>Method of starting: Star – Delta/DOL (as specified).</li> <li>Frequency : 50Hz + 3%</li> <li>Voltage : <math>415 \pm 15\%</math>, 03 phase</li> <li>Class of insulation: Suitable for above rating.</li> <li>Sealing : Dual mech. seal. Provided with thermal and overload protection</li> </ul> <p>The motor shall be made of corrosion resisting materials to resist corrosion under normal conditions and the motor shall have a name plate giving complete specifications</p> <p>Dual Mechanical Seals (01 No) and Bearings (02 No) for each pumping unit must be provided as spare parts for preventive maintenance by the firm.</p> <p>Note: Test certificate having the Serial No. of the Pumping Unit along with the performance curve in duplicate from the Manufacturer must be produced on delivery of the item and</p> <p>pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p> <p>Providing of test certificate &amp; Characteristic Curve of pumping equipment is compulsory and pumping unit is to be approved from the concerned Sub Divisional office before procuring.</p> <p>The main specificiations of pumping unit are given below:</p> <p>Motor Rating: Corresponding to head and discharge not less than 20HP</p>	Job	1	1,01,726.00	1,01,726.00

S.No.	Description	Unit	Rate	Amount
16	<p>Providing, fitting, testing and commissioning of 50 KVA Voltage Stabilizer as per specifications below:</p> <p>Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step.</p> <p>Type of Regulator: Double plate type with electrolytic copper contacts.</p> <p>Input voltage :250-400 volts (3 phase)</p> <p>Output voltage : 400 ±10% volts.</p> <p>Frequency :50 ±3 C.S.</p> <p>Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried.</p> <p>Insulation : Fiber glass insulations to tested parameters.</p> <p>Cooling : Naturally, Oil cooled</p> <p>Temp. Rise (Max):30°C above ambient</p> <p>Mounting :On Uni-directional wheels.</p> <p>Correction rate :30 volts per step</p> <p>Wave form distortion : virtually nil</p> <p>Duty cycle: 100% continuous.</p> <p>Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators.</p> <p>Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations.</p> <p>Load : Three phase induction motor load.</p> <p>Load Amperes (continuous)</p> <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 duly stamped test certificate and shall have name plate with specifications.</p>	job	2	1,07,401.00 2,14,802.00
17	Providing, fitting, testing and commissioning of fully automatic Star-Delta Starter ( MU-G 30, relay range 30-50). The starter shall be sheet enclosure type suitable for operating on 3 – phase, 415 V, 50 Hz AC Power Supply. The starter shall be able to provide single phase, phase reversal, phase imbalance and overload protection to the motor. The starter shall also have ON/OFF, voltage and current indication.	Job	1	34,000.00 34,000.00
18	Providing and fitting of 100 amps 4-pole MCCB, 36Ka ultimate breaking capacity with thermal magnetic release 80-100A.	Job	1	10,200.00 10,200.00
19	<p>Providing/supplying and fitting of 100 mm G.I flanged Rising Main including delivery manifold with washout arrangement at site. The Pipe shall be hot dip Galvanized, class C confirming to IS 1239.</p> <p>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</p>	Meter	100	1,897.00 1,89,700.00
20	Providing and fitting of 100mm, 90-120 degree bend/elbow to be fabricated out of Class C GI pipe, 1 m length and flanged on both ends and to make it leak proof. The flanges shall be M.S Flanges conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sidesGI bend with flanges The Flanges shall be MS conforming to BIS 6392/1997 Table 17 (Rating PN16) and welded on both sides. The job includes providing and fitting of nuts, bolts, gaskets etc as per site requirement.	job	12	3,614.00 43,368.00
21	<p>Dia = 100 mm</p> <p>Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/slue 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>	Job	4	19,094.00 76,376.00

	Description	Unit	Qty.	Rate	Amount
22	<p>N: 1.6/16</p> <p>Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve( NRV) as per IS 5312. The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions.</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. 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>	Job	4	20,581.00	82,324.00
23	<p>Fabrication, providing and fitting of split type MS clamps 12 mm thick, 2.5 ft long and 3 inch wide for lowering and holding of pumping unit fitted. The job includes the cost of required size of nuts and bolts.</p> <p><b>Size: 100 mm</b></p>	Job	3	3,200.00	9,600.00
24	<p>Fabrication of gantry mechanism/CGI shed/pump base frame by way of providing Structural steel in built up sections , trusses and framed work, including cutting , hoisting , grouting, fixing in position and applying a priming coat of steel primer and 02 coats of paint of approved shade all complete welded.</p> <p>The drawings and Dimensions for Gantry/CGI shed/pump base frame etc will be provided by Site In Charge at the time of execution of job.The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.</p>	Kg	1250	135.00	1,68,750.00
25	<b>Common Electromechanical works for both stages 1st and 2nd</b>				-
26	<p><b>Capacity: 100 KvA</b></p> <p>Supply installation , testing and commissioning of level II HT Transfromer which includes creation of pole mounted, outdoor type Electric Sub Station as per the technical specifications given here under -</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> <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 jell crystals, conservator with oil level indicator, explosion vet and adequate radiator fins/ Tubes. The impedance of transformer shall be as per IS: 1180 (Part 1) 2014 with latest amendments.</p>	Job	1	2,09,945.00	2,09,945.00



S. No.	Description	Unit	Qty.	Rate	
27	<p>Providing, installation and testing of Heavy Duty manual type triple spur gear chain pulley block along with monorail geared travelling trolley having following features</p> <p>Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears.</p> <p>Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collared, tested and have adequate built factor of safety for safer operation.</p> <p>Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below :</p> <ul style="list-style-type: none"> <li>i. Make = Reputed make</li> <li>ii. Capacity = 2 ton (P)</li> <li>iii. No. of load chain falls = 2 or above</li> <li>iv. Min. Height of lift = 6 M</li> </ul>	Job	2	44,473.00	88,946.00
28	Supply, installation, erection of 9 mtrs long H.T pole of specifications ST- 410 (sp-33) . The job further includes drilling of holes for installation of various accessories .wherever required the job further includes G.I wire earthing of pole as per REC standard.	Job	14	20,686.00	2,89,604.00
29	Cement bottoming 1:2:4 mix as per REC mix as per REC standards 0.5 cum/pole	job	14	3,539.00	49,546.00
30	P/F of Galvanized nuts, bolts of various sizes as per site requirement.	Kg	70	142.00	9,940.00
31	GI Barbed wire for Anti Climbing with fixtures/as per site requirement.	kg	70	136.00	9,520.00
32	P/F Danger Plate with clamps	No	14	153.00	2,142.00
33	Wedge connectors/PG Clamps/as per site requirement.	No	18	421.00	7,578.00
34	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes including clamps	Kg	1600	123.00	1,96,800.00
35	Supply, Installation, Testing and commissioning of Polymeric Gang operated Air break switch 3 Phase, 3 Pole, 200 A, Vertical Type, outdoor type, triple pole, suitable for vertical installation, single break provided with locking arrangement at both ON and OFF position consisting of HT post double insulator, copper or copper alloy high pressure heavy contact assembly, rod with bearings , operating handle and 2 length of 32mm dia. GI pipe conforming to IS 1818 1961, 06 No. of insulators, rated voltage 11KV 200A complete as per IS specs.	Set	2	11,730.00	23,460.00
36	Supply, Installation, Testing and commissioning of 11KV polymer fuses Set Horn Gap 3-phase 200 A suitable for vertical installation	Set	2	4,983.00	9,966.00
37	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type.	Set	2	7,754.00	15,508.00
38	Supply and fitting of 11 KV polymeric composite disc insulator 12 KV, minimum falling load 45KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm.	No	6	596.00	3,576.00
39	Supply and fitting of 11 KV polymeric composite pin insulator 12 KV, 5KN, Lighting impulse 75KV Positive, and 80 KV Negative , creepage distance 320 mm as per Clause 31	No.	42	347.00	14,574.00
40	Painting of poles Red oxide	lit	14	306.00	4,284.00
41	Painting of poles Aluminum paint	lit	14	510.00	7,140.00
42	Sundry items like aluminium lugs,jumpers,binding tape.	LS	2	1,755.00	3,510.00
43	Earthing of substation --Excavation of earth pit of dia 650 mm & depth 3000 mm, installation of Earthing pipe of 40 mm Nominal bore & 4mm wall thickness & length 2.5 mtr long as Per IS 1239.GI Strip for neutral earthing of size 25 mm x 3 mm for connection of transformer body,neutral,G.O Set, lightning arrestor, LT Control Panel and voltage stabilizer as per IS 2629/85, GI nuts & bolts,refilled with earth enhancement materials and earth Chamber made of brick masonry with RCC slab cover.	Job	14	10,462.00	1,46,468.00
44	Providing and fitting of ACSR as per IS 398 (part-2) 1996 for 50 sq.mm ACSR (Galvanised steel reinforced) for fitment of various accessories	Meter	800	60.00	48,000.00
45	Providing and fitting of LT Distribution box FITTED with 200 A 4 pole MCCB for incomer and SFU for outgoing circuits.	job	2	39,422.00	78,844.00
46	Galvanised stay set with 50x8mm stay clamp, guy insulator(02No.),anchor plate(200x200x6mm),nuts and bolts,2No. Turnbuckles,1.8m long,16mm diameter solid GS stay rod and 7/3.15mm dia GI standard wire complete.	set	4	4,922.00	19,688.00
47	Supply, Installation, testing and commissioning of 3-phase, 4-wire Trivectometer with suitable ring type CT complete unit as per latest IEC Standard.The required size cable for input and output connections (as per site requirement) with all allied accessories, transportation charges, labour component, earthing etc are included in the job.	Job	1	27,000.00	27,000.00
48	Providing of bamboo ladders 18 feet long along with 15 feet long Link rods and HT Glove pair (01 No each)	Unit	1	7,350.00	7,350.00

**Description**

	<b>Unit</b>	<b>Qty.</b>	<b>Rate</b>	<b>Amount</b>
49	Job	2	28,000.00	56,000.00

electrification and illumination of pump house by way of providing & fitting Eight No. of lighting points and Two No. of heating points viz:

- a) Wiring to lighting points with 1.5Sq mm and heating points with 2.5Sq mm PVC single core multi-stranded copper conductor insulated, unsheathed 1.1 KV grade ISI marked with length as required upto control panel as per site requirement.
- b) PVC conduit/ channel 1.5" and 1" to be fitted on walls of pump house as per site requirement. c) Eight No. of Bulb holders (angle type or any other type) with eight No. of 12Watt LED bulbs .
- d) Modular Switch boards with frame to be fitted on walls of pump house consisting of ISI marked items like 10A switches, indicator, 03 pin flash type socket for lighting (As per requirement) and combined 16A switch and 05 pin flash type socket(02No)for heating .

The job includes cost on account of material, skilled labour, tools and tacks, including screws, cement nails, rawl plugs and other consumable items as per site requirement.

**Illumination of Premises:**

Providing and erection of 9 Mtr long Hot Dip Galvanized octagonal pole (single Section) with bottom 150mm, top 75mm wide, thickness 3mm with 70 Microns Zinc coating having inside arrangement for providing of power connection along with following items.

1)3 Way Terminal Connector 20 Amp.

2)3 No MCB 8 Amp.

The job includes fabrication, providing and fitting of three arm GI structure at the top having 120° angle between arms and each arm having 15° inclination with respect to horizontal plane. Each arm should be of 2' length and size and shape appropriate as per requirement of the luminary. The job also includes providing and fitting of required length of flexible multi strand 2 mm copper wire from each terminal connector to each holding arm.

The pole is mounted on 1:2:4 Cement concreting of size not less than 2'x2'x6" (cost of concreting not included in the job) using 04 No anchor bolts of required size not less than 7" in length. The complete job includes earthing in GI Electrode as per relevant IS Code

50

Job

2

22,226.00

44,452.00

51

Job

2

8,154.00

16,308.00

52

Job

6

9,486.00

56,916.00

53

Kg

164

135.00

22,140.00

54

Sft

72

154.00

11,088.00

55

No.

2

3,600.00

7,200.00

S. No.	Description	Unit	Qty.	Rate	Amount
56	<p>a) Providing of good quality convenience and utility items bedding for night stay/Shift consisting of:</p> <ul style="list-style-type: none"> <li>i) Mattress with warm cover size 6'x3' (6Kg)- 02 No's</li> <li>ii) Quilt with warm cover size 5'x8' (6Kg)- 02 No's</li> <li>iii) Pillows with covers - 02 No's</li> <li>iv) Single bed warm blankets with one sided Fur- 02 No's</li> </ul> <p>The filling material for mattress, quilt and pillow shall be of good quality cotton</p> <p>b)The job also includes providing of pressure cooker 5ltr 02 No's, Steel patella (utensil) 5ltrs 02 No's, cooking heater 01 No., room heater 01 No., steel buckets 10 litre capacity 01 No., Plastic bucket 10 litre capacity with Mug 02 No's each, steel glasses 06 No's, steel Plates with large spoons and bowls 03 No's each, Cup and Saucer set (01 No. Set) and, 5kg Gas cylinder with burner/ stove. The job also includes providing of thermo-cool 15'x12' along with excel matting of 15'x12' size. The job also includes providing of unbreakable Plastic Chair table set consisting of chairs 04 No's, extra heavy Table 01 No. The job also includes providing of good quality safety Door locks (03 No's) of Godrej, Link locks,</p>	Job	2	39,619.00	79,238.00
57	<p><b>TOOL KIT For Maintenance:</b></p> <p>The Tool Kit for maintenance shall comprise of the following and all the items as mentioned below shall be of:</p> <p>Providing of tool kit consists of following items</p> <ul style="list-style-type: none"> <li>i.Double ended Spanner (Chrome plated) 02 sets complete</li> <li>ii.Double ended Ring spanners chrome plated 02 sets complete</li> <li>iii.Allen key set black finish 02 sets complete</li> <li>iv.Combination Pliers insulated with thick C.A sleeve; size in mm 165, 210, 255 each – 02 No.</li> <li>v.Long nose plier insulated with thick C.A sleeve; size in mm 165, 205 each – 02 No.</li> <li>vi.Side cutting plier insulated with thick C.A sleeve; size in mm 165, 205 make – 02 No.</li> <li>vii.Insulated screw Drivers</li> </ul> <p>Blade length in mm Blade dia. in mm Tip dimensions in mm Quantity</p> <p>5031.6 x 0.402 7531.6 x 0.402 10033 x 0.402 1253.53.5 x 0.5 02 1503.53.5 x 0.502 20044 x 0.602 30055 x 0.802</p> <p>viii.Hammer with handle weight – 110 mg, 340 gm , 600 gm –each – 1No..</p> <p>ix.Heavy duty pipe Wrench length in mm - 200, 300, 600 each – 01 No.</p> <p>x.Electric Multimeter =1No</p> <p>xi.Digital multimeter – 1No.</p> <p>xii.Digital Clamp tester capable to measure up to 400A - 1 No.</p> <p>xiii.Hack saw frame with hack saw blade – 01 no.</p>	job	2	28,840.00	57,680.00
58	<p>Supply, installation, Testing &amp; commissioning of 1000VA Full Sine wave power inverter including Providing / Installation of 12V, 180AH Tubular inverter Battery with trolley and cover. with 2-core 4 mm<sup>2</sup> Cu (25 m) wiring as per site requirement along with other accessories like SS-Combine (02 No's), 3-pin plugs etc of reputed make for proper fitment and installation of the item.</p>	Job	2	34,053.00	68,106.00
59	<p>Supply, installation of 6 kg CO2 type fire extinguisher manufactured as per IS: 15683 of 2006 with IS mark and comply with DGMS (Approval). The co2 extinguisher should be suitable for class B &amp; C fire and also for fire involving electrical equipment. The cylinder used for fire extinguisher shall be approved by petroleum and explosive safety organization (PESO) as per gas cylinder rules 2004 and as per IS: 7285 of 2004. The body should be made of seamless steel (manganese) confirming to IS: 7285 with IS mark and should be provided with squeeze grip nozzle and should be filled with co2 confirming to IS: 15222 of 2002 with certificate. The extinguisher shall be provided with manufacturers test certificate and hydraulic test certificate by BIS from PESO.</p>	Job	4	6,447.00	25,788.00
60	<p>Providing, laying &amp; 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 &amp; limb of the workmen due to possible leakage of current &amp; short circuit. The floor surface shall be made good &amp; shall be free from dust, grease, foreign material &amp; moisture free. The mats shall be as per IS 15652:2006 &amp; shall have the following specifications:-</p> <p>Composition: Rubber (synthetic mats for electrical purpose)</p> <p>Thickness: - 2.5mm Size: - 1M wide.</p> <p>The rubber mats shall be accepted with manufacturers test certificate.</p>	Meters	12	1,205.00	14,460.00
61	P/F of 11 KV cable termination kit for connecting 35 sq mm AB(HT) Cable (3x35+1x70 sqmm) XLPE (11 KV , 3C+Earth XLPE cable (ABC type) with the existing HT line near tapping point and HT transformer.	Meter	120	780.00	93,600.00
62	Providing and Fitting of 10 sqmm, 1.1KV 2 core PVC Insulated Sheathed 2 Core copper cable for connecting Lighting pole with power supply conforming to IS: 694:2010.	Meter	90	260.00	23,400.00

	Description	Unit	Qty.	Rate	Amount
	Providing and fitting of 3-Core flat submersible copper cable conforming to IS: 694 (Part 1st) – 1964 & IS: 694 (Part 2nd) - 1964 for Submersible Pumping Unit and other electrical Equipment. The cable connections terminal shall be fitted with copper thimbles of required size. The main specification of the cable is given below: Size: 16 sq mm	Meter	90	711.00	63,990.00
64	Providing, installation, testing of power wiring for working voltage up to and including 1100 Volts, 25 Sq. mm PVC insulated copper cable for internal connections as per IS 694 along with thimbling as per requirement at site.	Meters	180	394.00	70,920.00
65	Providing, installation, testing of power wiring for working voltage up to and including 1100 Volts, 35 Sq. mm PVC insulated copper cable for internal connections as per IS 694 along with thimbling as per requirement at site.	Meter	180	546.00	98,280.00
66	<p>Bio-toilet of size 4/x4/x8/ with FRP bio-digester tank of capacity 700 liters with anaerobic bacterial incolumn 200 liters complete with all accessories:</p> <p>Providing/construction/installation/commissioning of onsite brick masonry constructed/pre cast, reinforced concrete constructed/fiber reinforced plastic constructed toilet block with bio-digester super structure shall be:</p> <p>General specifications</p> <ul style="list-style-type: none"> <li>.On site constructed/ factory made</li> <li>.Single unit/ paneled form as per site requirement</li> <li>. Easy to maintain and clean</li> <li>.All weather protection</li> <li>.Well ventilated</li> <li>.Shall have no effect on natural calamity with regard to Effluent drawn out</li> <li>.Shall be feasible for operation under -15 to 40 degree celcius temperature.</li> </ul> <p>Technical specification for onsite constructed/pre cast RCC toilet super structure</p> <ul style="list-style-type: none"> <li>. Toilet block size: 4ft x4ft x 8ft</li> <li>.Material-Precast concrete M25, onsite brick masonry or fiber reinforced Plastic</li> <li>Desired features of toilet block:Tiles- upto 3ft on side walls or as material of construction</li> <li>,Floor-Tiles or as material of construction</li> <li>.Paint on outside walls and inside walls as per material of construction</li> <li>. Western toilet sheet made of ceramic (as per site requirement)</li> <li>.Taps and flushing system- Water tap at a nominal height of minimum 13inches for Orissa</li> </ul> <p>PanFlushing system</p> <ul style="list-style-type: none"> <li>.Electric wire to connect the bulb</li> </ul>	job	2	1,49,600.00	2,99,200.00
	<ul style="list-style-type: none"> <li>.Stand for water tank-Mild steel of ISA 40x 40 x5mm with CGI roof and proper frost protection during winter</li> <li>.Door-PVC/AL/FRP any other water proof material</li> <li>.Water tank of capacity 300liters of HDPE(with an openable lid) for the supply of water ( to be placed on top with suitable frame)</li> <li>.Hand washing basin with tap etcTechnical specification for Sanitation Unit for solid waste management (Bio digestor)</li> <li>.Capacity of bio-digestor: 900litersDesign- With four chambers to ensure long hydraulic retention time.Construction of bio digestor- UPVC/on site concrete constructed/ any other chemically inactive material.Catalyst-Highly effective Bio catalyst</li> <li>.ncolumn-The cocktail of bacteria duly certified by DRDE of 30% of the volume of digestor</li> <li>.Bio digestor lining-Inert vulcanized 1.0mm thick butyl/EPDM rubber CE marked and non-voven geo textile for bacteria retention.Thickness of lining- 2mm</li> <li>.Material of portion waffle-concrete/any other chemically inactive material</li> <li>.Lifting-lugs ,3-4 people usageFurther, job includes all types of works like earth work excavation for bio digestor, carriage, transportation, handling, pipes for inlet connection for tank, other pipes etc for disposal of effluents as per latest Govt norms, electric connection, lock etc.Note: The quantity may vary as it is conditional to civil structure being constructed/as per site requirement.</li> </ul>				
	<b>Total: (Rupees Seventy Six Lakh Twenty Three Thousand Eight Hundred and Twenty Four Only)</b>				<b>76,23,824.00</b>

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