

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/4021-28
Dated: 25-08-2023.

M/s UEE Electrical Engineers Pvt. Ltd.
Shradanand Marg Delhi - 110006
B/O: Main Bazaar, Kathua, J&K-184101
GST No: 01AAACU1624K1ZR
Cell No: 9899963794

Adv. Cost:	Rs 121.826 Lacs
Allotted Cost:	Rs 120.084 Lacs

Subject: Electrical and mechanical works to be carried at WSS Pethpora Gundjahangeer and WSS Kaniyari along with laying and fitting of rising main under JJM.

- Reference:
1. This office e-NIT No.: e-NIT No. 07 of 2023-24, S. No. 02 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 Pethpora Gundjahangeer and WSS Kaniyari along with laying and fitting of rising main 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 S/M, 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 Baramulla/Bandipore HQ at S/M, for favour of information.
 5. Executive Engineer Jal Shakti (PHE) Division S/M, 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 S/M for information & necessary action.
- File concerned.

Name of work:
under JJM

Electrical and mechanical works to be carried at WSS Pethpora Gundjahangeer and WSS Kaniyari along with laying and fitting of rising main

S No	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
1	<p>Electro-Mechanical works for WSS Pethpora Gundjahangeer</p> <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 = 5000 GPH 2.Type = Self water lubricated, VT pump, open line shaft. 3.Liquid to be handled = Raw Water 4.RPM = 1460 5.Head = 70 Meterst 6.Efficiency = Not less than 75% 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. 				
1.01	<ol style="list-style-type: none"> 13.Line shaft coupling = Stainless steel 14.Suction Strainer = MS fabricated 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. <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 35HP 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 with stand 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	2	4,48,000.00	8,96,000.00
	<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 = 5000 GPH 2.Type = Self water lubricated, VT pump, open line shaft. 3.Liquid to be handled = Raw Water 4.RPM = 1460 5.Head = 35 Meterst 6.Efficiency = Not less than 75% 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. 				

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount
1.02	<p>13 Line shaft coupling = Stainless steel 14 Suction Strainer = MS fabricated 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.</p> <p>B. Prime Mover 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 35HP 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> <p>The motor should be able to with stand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>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 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. 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	2	1,58,400.00	7,16,320.00
1.03	<p>Size: 80 Class: C (Heavy) Providing/supplying and fitting of G.I flanged Rising Main at site. 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 Table 17 (Rating PN16) for Y junction. The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make. Flanges (as per IS 6392/1997 Table:17) Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint. Welding Electrode DC Arc Welding using welding electrode having diameter not less than 4mm. Nuts and Bolts Nuts and Bolts (conforming to IS:1363 Part 1st) Rubber Insertion Gaskets Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints.</p>	Meters	40	1,658.00	66,320.00
1.04	<p>Dia = 80 mm Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units . The body and 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>	No	4	17,302.00	69,208.00
	<p>Size: 80 mm PN: 1.6/16 Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve(NRV) as per IS 5312. The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions. It shall have electrostatic epoxy coating (approved for drinking water) both inside and outside of the valve. Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work. The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with Rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p>	No	4	19,527.00	78,108.00

NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
06	<p>Providing, fitting, testing and commissioning of 40 KVA Voltage Stabilizer as per specifications below: Type of voltage controller: Manually operated copper wound, 3 phase, AC power supply multi step. Type of Regulator : Double plate type with electrolytic copper contacts. Input voltage :250-400 volts (3 phase) Output voltage :400 ±10% volts. Frequency :50 ±3 C/S. Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried. Insulation : Fiber glass insulations to tested parameters. Cooling :Naturally, Oil cooled Temp. Rise (Max):30°C above ambient Mounting :On Uni-directional wheels. Correction rate :30 volts per step Wave form distortion :virtually nil Duty cycle :100% continuous. Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators. Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations. Load : Three phase induction motor load. Load Amperes (continuous) Overload in 24-hours operation: 10% above continuous Ampere rating. 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). Insulating media (T. Oil) of 11 KVA grade to be provided and filled up to top level, with dielectric strength of 5 KV at 4m air gap. The T-Oil of specific grade should be provided in separate barrels and filled at site up to top level. The voltage Stabilizer shall be accepted with manufacturers dully stamped test certificate and shall have name plate with specifications.</p>	No	4	1,05,378.00	4,21,512.00
07	<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 100 KVA Specifications conforming to IS : 1180 (Part 1) 2014 with latest amendments Type of cooling: ONAN.Rating: 200 KVA HT Transformer, 3 phase (Level 2). Manufacturers certificate be appended Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments. Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals: Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc. Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge. Transformer Coils: Suitable number of HT and LT coils in each leg of the core. The transformer coils shall be fabricated out of superior quality aluminum wire/strips, properly wound. The HT transformer is completely filled with suitable grade transformer oil up to required level. The job includes carriage, and all leads and lifts involved.</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. 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>	Job	1	2,24,213.00	2,24,213.00
	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. for stage 1st and 2nd	Job	7	25,104.00	1,75,728.00
	Cement Bottoming 1:2:4 mix as per REC standards 0.5 cum/pole	Job	7	3,429.00	24,003.00
	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes including clamps for stage 1st and 2nd	Kg	300	135.00	40,500.00
	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. for stage 1st and 2nd	Set	2	12,527.00	25,054.00
	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	Set	1	5,322.00	5,322.00
	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type for stage 1st and 2nd	Set	1	8,281.00	8,281.00
	Supply and fitting of 11 KV polymeric composite pin insulator 12 KV, 5KN, Lighting impulse 75KV Positive, and 80KV Negative , creepage distance 320 mm for STAGE 1ST & 2nd	Set	25	371.00	9,275.00
	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	Unit	1	8,085.00	8,085.00

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1.16	P/I of earthing station for electric substation, LT panel and stabilizer comprising of company fabricated earthing electrode as per IS: 3043. The job includes Auguring of bore of required dia/depth for installation of electrode along with backfill compound mixed with soil and all other items required thereof for achieving the best result. The job includes connecting of electric gadgets through GI strip as per relevant standards. Safe earthing electrode size : 65/80 mm dia (As specified), Length : 2000 mm Back fill compound : 30 kg	Job	5	11,508.00	57,540.00
1.17	Providing and fitting of LT Distribution box FITTED with 200 A 4 pole MCCB for incomer and SFU for outgoing circuits.	Job	1	43,364.00	43,364.00
1.18	Distribution Cables: Providing, Installation, testing of multi-stranded copper conductor PVC Insulated single core unsheathed 25mm sq. Copper cable for internal distribution wiring for stage 1st and 2nd	Meters	300	402.00	1,20,600.00
1.19	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	Meter	50	520.00	26,000.00
1.20	Steel work in built up tubular (round, square or rectangular hollow tubes, ISMC, ISMB, ISA etc.) trusses, construction of liner etc. including cutting, hoisting, fixing in position and 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	Kg	1530	112.00	1,71,360.00
1.21	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, 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..... 200 Amp Rated operational voltage — 415 V AC ± 15% Rated frequency — 50 ± 3% Hz Ultimate S.C Breaking cap. at (415 volt A C, 50 Hz) — 50kA	Job	2	1,92,073.00	3,84,146.00
	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 ± 15% Rated frequency — 50 ± 3% Hz Ultimate S.C Breaking capacity at (415 volt A C, 50 Hz) — 36kA e) Starters (FASD) 50HP Power Specification — 3 phase, 415 ± 15% v & 50 Hz Contactors : MNX / Schneider Line Contactor — AC3 95 A Delta Contactor — AC3 95 A Star Contactor — AC3 70 A Timer — Star Delta Electronic Overload relay — direct/CT operated (35-75A range) Coil Voltage : 220/240V Qty — 2 No's				

NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
	<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 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</p>				
	<p>• 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> <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) (a) Multi-Function Meters LCD Display (1 No) Voltage of each phase , Current of each phase 3ϕ power (Active, Apparent) , 3ϕ Power factor Frequency , Energy (b) Analog voltmeter S/S operated (1 No)</p> <p>•(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>				
	<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 Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears. Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collaborated, tested and have adequate in built factor of safety for safer operation. Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below :</p> <p>i.Make = Reputed make ii.Capacity = 3 ton (P) iii.No. Of load chain falls = 2 or above iv.Min. Height of lift = 6 M</p>	Job	1	80,604.00	80,60

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount
1.23	<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. 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</p>	Job	1	24,978.00	24,978.00
1.24	<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: Input: 90-240 V 50 Hz Power Factor: >0.9 Colour Temperature: 4K - 6.5K Beam Angle: 120° - 170° Lumens: >12000 Operating Temperature: -20°C to 60°C The LED is pressure die cast aluminum housing with power coated finish and having Ingress Protection up to IP-68. The LED is properly fitted on the arm of the pole and connected to the copper wire as provided in the high mast pole</p>	Job	4	9,753.00	39,012.00
1.25	<p>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.</p>	job	1	2,378.00	2,378.00
1.26	<p>Providing, Installation and testing of 2KVA fully automatic copper wound voltage stabilizer with input voltage 70-240 V and output 220 V. The stabilizer shall be installed and connected to the electric circuit as per location provided by site in charge.</p>	Job	1	9,164.00	9,164.00
1.27	<p>Supply, installation, Testing & commissioning of 1000VA Full Sine wave power inverter including Providing / Installation of 12V, 180AH Tubular inverter Battery with trolley and cover. with 2-core 4 mm² Cu (25 m) wiring as per site requirement along with other accessories like SS-Combine (02 No's), 3-pin plugs etc of reputed make for proper fitment and installation of the item</p>	job	1	37,458.00	37,458.00
1.28	<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: - Composition: Rubber (synthetic mats for electrical purpose) Thickness: - 2.5mm Size: - 1M wide. The rubber mats shall be accepted with manufacturers test certificate.</p>	M	10	1,326.00	13,260.00
	<p>TOOL KIT For Maintenance: for stage 1st & 2nd 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 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 viii.Hammer with handle weight – 110 gm, 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. iv.S-16 MXL, S- 16 H X L Socket Set (19 sockets + 6 Accessories) – 01 No.</p>	Job	1	31,724.00	31,724.00

M/s UEE Electrical Engineers Pvt Ltd

Adv Cost:

NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
1.30	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, for stage 1st and 2nd	Job	1	43,581.00	43,581.00
1.31	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	Kg	94.75	102.00	9,664.50
1.32	Providing and fitting of 19 mm thick multilayered ply sheet of size 6 x 3 feet, 2 no's including cutting, fixing all complete including painting of the play sheet by one coat of primer and two coats of enamel paint	sft	18	154.00	2,772.00
1.33	Providing of solar/electrical lantern chargeable on both solar & electrical 220v supply for stage 1st and 2nd	Job	1	1,430.00	1,430.00
1.34	Providing of 1 KW heat convector for operators for winter season for stage 1st and 2nd	Job	1	902.00	902.00
1.35	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. for stage 1st and 2nd Size: 6'x1'6" = 9 sft	Sft	9	4,398.00	39,582.00
1.36	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	8	1,760.00	14,080.00
1.37	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
1.38	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
1.39	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. The job includes the cost of required size of nuts and bolts. Size: 80mm	job	2	1,981.00	3,962.00
2	WSS Kanyari Stage 1st and 2nd 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 A.PUMP 1.Discharge = 5000 GPH 2.Type = Self water lubricated, VT pump, open line shaft. 3.Liquid to be handled = Raw Water 4.RPM = 1460 5.Head = 40 Meterst 6.Efficiency = Not less than 75% 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				17,87,520.00

NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount
01	<p>13.Line shaft coupling = Stainless steel 14.Suction Strainer = MS fabricated 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.</p> <p>B.Prime Mover 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 50HP 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 with stand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>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 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. 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	2	8,93,760.00	
	<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> <p>•Site Condition Altitude = 1580 Meters/Greater (AMSL) Ambient Temperature = +40°C to - 15°C Relative Humidity = 60%</p> <p>•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> <p>A.PUMP 1.Discharge = 5000 GPH 2.Type = Self water lubricated, VT pump, open line shaft. 3.Liquid to be handled = Raw Water 4.RPM = 1460 5.Head = 40 Meterst 6.Efficiency = Not less than 75% 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</p>		2	1,66,400.00	3,32,800.00
2	<p>13.Line shaft coupling = Stainless steel 14.Suction Strainer = MS fabricated 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.</p> <p>B.Prime Mover 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 7.5HP 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 with stand fluctuations in voltage and should be conforming to latest IS specifications.</p> <p>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 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. 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			

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
2.03	<p>Size : 100 Class: C (Heavy) Providing/supplying and fitting of G.I flanged Rising Main at site. 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 Table 17 (Rating PN16) for Y junction. The flanges shall be double welded both from inside and outside of the pipe using standard electrode of reputed make. Flanges (as per IS 6392/1997 Table:17) Thickness shall conform to IS 6392 Part 1st Table-17. The flange welding shall be carried out in double layers using reputed make electrodes to form strong welding joint. Welding Electrode DC Arc Welding using welding electrode having diameter not less than 4mm. Nuts and Bolts Nuts and Bolts (conforming to IS:1363 Part 1st) Rubber Insertion Gaskets Rubber Insertion Gaskets (conforming to IS: 638/79) to be used between flanged joints.</p>	Meters	40	2,445.00	97,800.00
2.04	<p>Dia = 100 mm Providing and fitting of, Ductile Iron double flanged, non-rising spindle soft seated glandless gate/ sluice valves as per IS14846 for regulating the water supply outside the pumping units . The body and 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>	No	4	21,319.00	85,276.00
2.05	<p>Size: 100 mm PN: 1.6/16 Providing and fitting of Ductile Iron double flanged, Slanted seat swing check valve(NRV) as per IS 5312. The body shall be of ductile cast iron with fully encapsulated vulcanized EPDM rubber(Approved for drinking water). The valve shall be compatible for buried applications and shall be safe to install in both horizontal and vertical positions It shall have electrostatic epoxy coating (approved for drinking water) both inside and outside of the valve. Cost on account of Nuts, bolts, gaskets, etc required for the job is included in the scope of work. The job includes providing and fitting of 02 nos. M.S flanges (Table flanges) perfectly adaptable to the inbuilt flanges of the valve which shall be fitted with Rising main of the pumping unit at appropriate spots as per site requirement. The job includes the cost on account of P/F of nuts, bolts and gasket required for the job.</p>	No	4	22,979.00	91,916.00
2.06	<p>Providing, fitting, testing and commissioning of 100 KVA Voltage Stabilizer as per specifications below: Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step. Type of Regulator : Double plate type with electrolytic copper contacts. Input voltage :250-400 volts.(3 phase) Output voltage :400 ±10% volts. Frequency :50 ±3 C/S. Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried. Insulation : Fiber glass insulations to tested parameters. Cooling :Naturally, Oil cooled Temp. Rise (Max):30°C above ambient Mounting :On Uni-directional wheels. Correction rate :30 volts per step Wave form distortion :virtually nil Duty cycle :100% continuous. Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators. Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations. Load : Three phase induction motor load. Load Amperes (continuous) Overload in 24-hours operation: 10% above continuous Ampere rating. 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). Insulating media (T. Oil) of 11 KVA grade to be provided and filled up to top level, with dielectric strength of 5 KV at 4m air gap. The T-Oil of specific grade should be provided in separate barrels and filled at site up to top level. The voltage Stabilizer shall be accepted with manufacturers dully stamped test certificate and shall have name plate with specifications.</p>	No	2	2,10,754.00	4,21,508.00

[Handwritten Signature]

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount
2.07	<p>Providing, fitting, testing and commissioning of 30 KVA Voltage Stabilizer as per specifications below: Type of voltage controller: Manually operated copper wound, 3-phase, AC power supply multi step. Type of Regulator : Double plate type with electrolytic copper contacts. Input voltage :250-400 volts (3 phase) Output voltage :400 ±10% volts. Frequency :50 ±3 C/S. Windings : Electrolytic grade copper of adequate section, vacuum impregnated and Oven-dried. Insulation : Fiber glass insulations to tested parameters. Cooling :Naturally, Oil cooled Temp. Rise (Max):30°C above ambient Mounting :On Uni-directional wheels. Correction rate :30 volts per step Wave form distortion :virtually nil Duty cycle :100% continuous. Enclosure : MS sheet enclosure in pressed CGR Sheet powder coated with radiators. Core laminates : High grade, low eddy loss, grain oriented silicon steel laminations. Load : Three phase induction motor load. Load Amperes (continuous) Overload in 24-hours operation: 10% above continuous Ampere rating. 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). Insulating media (T. Oil) of 11 KVA grade to be provided and filled up to top level, with dielectric strength of 5 KV at 4m air gap. The T-Oil of specific grade should be provided in separate barrels and filled at site up to top level. The voltage Stabilizer shall be accepted with manufacturers dully stamped test certificate and shall have name plate with specifications.</p>	No	2	73,061.00	1,46,122.00
2.08	<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 Specifications conforming to IS : 1180 (Part 1) 2014 with latest amendments Type of cooling: ONAN.Rating: 100 KVA HT Transformer, 3 phase (Level 2). Manufacturers certificate be appended Specifications conforming to IS: 1180 (Part 1) 2014 with latest amendments. Type: HT/LT Transformer Type of cooling: ONAN. Operating conditions: Input =11000 volts Output =433 volts AC supply in 3- phase. Terminals: Input=3 No. HT bush rods with insulators, washer, nuts etc. Output=4 No. LT bush rods switch insulators, washers, nuts etc. Core: The core shall be of high permeability to reduce core losses and the strips shall be of suitable size and gauge. Transformer Coils: Suitable number of HT and LT coils in each leg of the core. The transformer coils shall be fabricated out of superior quality aluminum wire/strips, properly wound. The HT transformer is completely filled with suitable grade transformer oil up to required level. The job includes carriage, and all leads and lifts involved.</p>	Job	2	2,24,213.00	4,48,426.00
	<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. 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>				
2.09	Supply, installation, erection of 9 mtrs long H.T poe 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. for stage 1st & 2nd	Job	13	25,104.00	3,26,352.00
2.10	Cement Bottoming 1:2:4 mix as per REC standards 0.5 cum/pole	Job	17	3,539.00	60,163.00
2.11	Providing and fitting G.I Channel /platform for T-bed/Angle/ Flat /Riser of sizes including clamps	Kg	475	135.00	64,125.00
12	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. for stage 2nd	Set	2	12,527.00	25,054.00
3	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	5,322.00
1	Supply, Installation, Testing and commissioning of Gapless Surge arrestor station class, 10KA, 9KV, LA With polymer housing, Station Type for stage 2nd	Set	1	8,281.00	8,281.00
	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. for stage 2nd	Set	50	371.00	18,550.00
	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	Unit	2	8,085.00	16,170.00
	Painting of poles Red oxide for stage 2nd	lit	13	333.00	4,329.00
	Painting of poles Aluminum paint for stage 2nd	lit	13	666.00	8,658.00

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
2.19	P/I of earthing station for electric substation, LT panel and stabilizer comprising of company fabricated earthing electrode as per IS: 3043. The job includes Auguring of bore of required dia/depth for installation of electrode along with backfill compound mixed with soil and all other items required thereof for achieving the best result. The job includes connecting of electric gadgets through GI strip as per relevant standards. Safe earthing electrode size : 65/80 mm dia (As specified), Length : 2000 mm Back fill compound : 30 kg	Job	5	11,508.00	57,540.00
2.20	P/L of ACSR conductor of size 0.05 as per the relevant IS standard for stage 1st & 2nd	Meter	1300	59.00	76,700.00
2.21	Providing and fitting of 3"x5/8" Galvanized nuts and bolts	Kg	40	152.00	6,080.00
2.22	Providing and fitting of LT Distribution box FITTED with 200 A 4 pole MCCB for incomer and SFU for outgoing circuits for stage 1st & 2nd	Job	1	43,364.00	43,364.00
2.23	Distribution Cables: Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 25mm sq. Copper cable for internal distribution wiring for stage 2nd	Meters	150	402.00	60,300.00
2.24	Distribution Cables: Providing, Installation, testing of multi-stranded copper conductor PVC insulated single core unsheathed 50mm sq. Copper cable for internal distribution wiring for stage 1st	Meters	150	794.00	1,19,100.00
2.25	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, 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 ± 15% Rated frequency — 50 ± 3% Hz 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 ± 15% Rated frequency — 50 ± 3% Hz Ultimate S.C Breaking capacity at (415 volt A C, 50 Hz) —36kA e) Starters (FASD) 15HP Power Specification —3 phase, 415 ± 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)	Job	1	1,92,073.00	1,92,073.00

ITEM OF WORK	UNIT	QUANTITY	RATE (RS)	AMOUNT
<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 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 :</p>				
<p>• Flush Mounting with display</p> <p>• 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> <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) (a) Multi-Function Meters LCD Display (1 No) Voltage of each phase , Current of each phase 3ϕ power (Active, Apparent) , 3ϕ 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.</p>				
<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 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: 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 Accessible Entry --- Bottom Painting --- Shade Siemens grey. 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</p>	Job	1	3,62,401.00	3,62,401.00

Amount (Rs)

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	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
<p>Type ---- Microprocessor control</p> <p>b) Distribution bus bar Type ---- Electric grade AL with red, blue & yellow tapings Of adequate section. Rating ---- 200 Amp</p> <p>c) Change over Switch Qty ---- One Type ---- Front Operated on load 4 pole (open execution) Rating ---- 200 Amp</p> <p>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 ± 15% Rated frequency ---- 50 ± 3% Hz Ultimate S C Breaking capacity at (415 volt A C , 50 Hz) ---- 36kA</p> <p>e) Starters (FASD) 75HP Power Specification ---- 3 phase, 415 ± 15% v & 50 Hz Contactors : MNX / Schneider Line Contactor ---- AC3 110 A Delta Contactor --- AC3 110 A Star Contactor ---- AC3 90 A Timer ---- Star Delta Electronic Overload relay - direct/CT operated (60-110A range) Coil Voltage : 220/240V Qty ---- 2 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 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</p>				
<p>• 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> <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) (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)</p> <p>• (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>				
<p>2.27 Providing and Fitting of 50sqmm, 3.5 core LT 1.1 KV, XLPE Armoured Aluminium Cable conforming to IS: 7689 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. Thimbling of appropriate size and connected by hydraulic crimp tool only</p>	Meter	30	520.00	15,

S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
2.28	Providing and Fitting of 120 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.	Meter	150	299.00	44,850.00
2.29	Steel work in built up tubular (round, square or rectangular hollow tubes, ISMC, ISMB, ISA etc.) trusses, construction of liner etc. including cutting, hoisting, fixing in position and 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	Kg	2240	112.00	2,50,880.00
2.30	Providing, installation and testing of Heavy Duty manual type triple spur gear chain pulley block along with monorail geared travelling trolley having following features Gears:- The hoist shall have precision machine case Hardened alloy steel gear mounted on bearings and housed in a dust proof gear box. The lubrication of gears should be of high viscosity and temperature for longer life of gears. Load Chain:- The load chain be made of high tensile alloy steel having wear resistance and greatest mobility. The chain should be accurately collaborated, tested and have adequate in built factor of safety for safer operation. Load chain wheel:- the load chain well should be double ball bearing supported and Specially designed, perfectly machined wheel providing correct grip of load chain to makes the hoist most safe and reliable against any failure. The main specifications of C.P Block are given below : i. Make = Reputed make ii. Capacity = 3 ton (P) iii. No. Of load chain falls = 2 or above iv. Min. Height of lift = 6 M	Job	2	80,604.00	1,61,208.00
2.31	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 O4 No anchor bolts of required size not less than 7" in length. The complete job includes earthing in GI Electrode as per relevant IS Code	Job	2	24,978.00	49,956.00
32	Providing, installation, testing and commissioning of area lighting 120 Watt LED (Street Light Type) on top of octagonal pole including MCB fitted in box 10A vide item No.36 Having following specs: Input: 90-240 V 50 Hz Power Factor: >0.9 Colour Temperature: 4K - 6.5K Beam Angle: 120° - 170° Lumens: >12000 Operating Temperature: -20°C to 60°C The LED is pressure die cast aluminum housing with power coated finish and having Ingress Protection up to IP-68. The LED is properly fitted on the arm of the pole and connected to the copper wire as provided in the high mast pole for stage 1st & 2nd	Job	8	9,753.00	78,024.00
3	Providing and installation of Junction Box with DP 32Amp MCB to serve as main switch for LED lighting	job	2	2,378.00	4,756.00
	Providing, Installation and testing of 2KVA fully automatic copper wound voltage stabilizer with input voltage 70-240 V and output 220 V. The stabilizer shall be installed and connected to the electric circuit as per location provided by site in charge.	Job	2	9,164.00	18,328.00
	Supply, installation, Testing & commissioning of 1000VA Full Sine wave power inverter including Providing / Installation of 12V, 180AH Tubular inverter Battery with trolley and cover. with 2-core 4 mm ² Cu (25 m) wiring as per site requirement along with other accessories like SS-Combine (02 No's), 3-pin plugs etc of reputed make for proper fitment and installation of the item.	job	2	37,458.00	74,916.00
	Providing, laying & fixing of shock proof rubber mats with adhesive/bonding material on the floor of the pump house, covering area around electro-mechanical machinery for safeguarding the life & limb of the workmen due to possible leakage of current & short circuit. The floor surface shall be made good & shall be free from dust, grease, foreign material & moisture free. The mats shall be as per IS 15652:2006 & shall have the following specifications: - Composition: Rubber (synthetic mats for electrical purpose) Thickness: - 2.5mm Size: - 1M wide. The rubber mats shall be accepted with manufacturers test certificate. for stage 1st and 2nd	M	20	1,326.00	26,520.00

amt (Rs)

	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)																																
2.37	<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</p> <p>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</p> <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> <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>	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	Job	2	31,724.00	63,448.00
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																																		
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200	4	4 x 0.6	02																																		
300	5	5 x 0.8	02																																		
2.38	<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																																
2.39	Fabrication of 6'x3' (2No's) angle iron beds having 2' height using 50x50x6mm angle iron by way of providing and fitting of Structural steel in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete welded for stage 2st and 2nd	Kg	189.5	102.00	19,329.00																																
2.40	Providing and fitting of 19 mm thick multilayered ply sheet of size 6 x 3 feet, 2 no's including cutting, fixing all complete including painting of the play sheet by one coat of primer and two coats of enamel paint for stage 1st and 2nd	sft	36	154.00	5,544.00																																
2.41	Providing of solar/ electrical lantern chargeable on both solar & electrical 220v supply for stage 1st and 2nd	Job	2	1,430.00	2,860.00																																
2.42	Providing of 1 KW heat convector for operators for winter season for stage 1st and 2nd	Job	2	902.00	1,804.00																																
2.43	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. for stage 1st and 2nd Size: 6'x1'6" = 9 sft	Sft	18	4,398.00	79,164.00																																
2.44	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	16	1,760.00	28,160.00																																
2.45	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	4	1,540.00	6,160.00																																
2.46	Providing and fitting of 01 No. angle iron/sheet metal board duly painted showing various specifications of the mechanical and electrical equipment installed at site of appropriate sizes for stage 1st and 2nd	sft	48	280.00	13,440.00																																
2.47	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. for stage 1st and 2nd Size = 16.50 mm Size: 100mm	meters	50	782.00	39,100.00																																
2.48	Fabrication, providing and fitting of split type MS clamps 10 mm thick, 3" wide for lowering and holding of VT pumping units as per sample. The job includes the cost of required size of nuts and bolts for stage 1st and 2nd	job	2	2,750.00	5,500.00																																
3	Handling, laying and joining by welding of departmental GI prefabricated 100mm Diameter Medium class GI Rising Mains from clear water sump to 02 No. New OHTs of WSS Gund Jahangir and Kanvari																																				
3.01	Laying of 100mm Diameter medium class GI rising main	Meter	2235	884.00	19,75,740.00																																
3.02	Providing, fitting and testing of approved quality 100mm dia. sluice valve (01 No), along with 100mm dia. dismantling joint (01 Nos) in the GI Rising Mains at the required location as per the directions of site Engineer. The dismantling joint is to be installed with the sluice valve with the help of flanges including all welding charges, cost of nuts /bolts, rubber washer, testing of joints.	Job	3	35,000.00	1,05,000.00																																
1.03	Providing, fitting and testing of approved quality 100mm dia. NRVs (01 Nos), along with 100mm dia. dismantling joints (01 Nos) in the GI Rising Mains at the required locations as per the directions of site Engineer. The dismantling joints are to be fitted with the Non Return valves with the help of flanges including all welding charges, cost of nuts /bolts, rubber washer, testing of joints.	Job	4	39,000.00	1,56,000.00																																

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S NO	ITEM OF WORK	UNIT	TOTAL QUANTITY	Rate (Rs)	Amount (Rs)
3.04	Providing, fitting and testing of approved quality 50mm dia. CI Double Acting Air Release Valves (01 Nos) in the GI Rising Mains at the required locations as per the directions of site Engineer including all welding charges, cost of nuts /bolts, rubber washer, testing of joints.	Job	3	14,500.00	43,500.00
3.05	Providing, fitting and testing of approved quality 100mm dia. Enclosed Type Water Meter (Bulk Type) (01 Nos) in the GI Rising Mains at the required locations as per the directions of site Engineer including all welding charges, cost of nuts /bolts, rubber washer, testing of joints.	Job	3	8,000.00	24,000.00
Total Amount					1,21,82,649.50
Percentage quoted by L1 firm:					-1.43%
Total: (Rupees One Crore Twenty Lakh Eight Thousand Four Hundred and Thirty Seven Only)					1,20,08,437.00

[Signature]
 Executive Engineer
 Jashakti (RHE) Mechanical Division (North)
 Sopore