



**Government of West Bengal
Irrigation & Waterways Directorate
Office of the Executive Engineer
Metropolitan Drainage Mechanical Division
Jalasampad Bhawan (4th floor), Salt Lake City, Kolkata-91
Telephone No-03323345768, Email Id: mdmdiwd@gmail.com**

EoI No.: WBIW/EE/MDMD/EoI-03/2019-20

**NOTICE INVITING
EXPRESSION OF INTEREST (EoI)**

For

Design, Supply, Erection, Testing & Commissioning of 33/6.6 KV Switchyard equipment along with 4 nos 5 MVA and 2 nos 2.5 MVA Power Transformer and consumer VCB panel, LT panel and other allied electrical works in connection with “Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical turbine pump sets of twenty two(22) nos. 150 cusec and 10(Ten) nos 75 cusec with electro-mechanical installation complete for the proposed additional pump house (augmentation of existing pump house) at Kulti for lower Bagjola khal in P.S Haroa, Mouja: Kamargati, G.P: Kulti, Block: Haroa, Dist: North 24 Parganas, State: West Bengal.”

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**NOTICE INVITING E.O.I.(Expression of Interest) FOR MOST
SUITABLE SCHEDULE OF WORK AND BUDGETARY QUOTES**

Online bids are hereby invited by the Executive Engineer, Metropolitan Drainage Mechanical Division, Irrigation & Waterways Directorate on behalf of the Irrigation & Waterways Department of West Bengal through single stage online bid for obtaining suitable schedule of works and Budgetary quotes from all interested bidders/agencies/contractors within the country having Original Equipment Manufacturer Pre-Qualification (eligibility) credential for execution of works of similar nature and financial capabilities. The schedule of works and Budgetary quote will determine the final selection and acceptance of price schedule, items of work, Specifications and even scope of work for framing of a DPR of the project mentioned later.

Intending contractors/bidders desirous of participating in this e-RFP are required to login to the Government of West Bengal e-Procurement website having URL <https://wbtenders.gov.in> and locate the instant tender by typing **WBIW/EE** in the search engine provided therein, or by logging-in using their assigned User ID and password. They may also visit the official website of the Irrigation & Waterways Department, Government of West Bengal www.wbiwd.gov.in to locate the same e-Tender by scrolling the “e-Procurement” link.

Contractors/bidders willing to take part in the e-EOI are required to obtain a valid Digital Signature- Certificate (DSC) from any of the authorized ‘Certifying Authorities’ (CA) under Controller of Certifying Authorities (CCA), Department of Electronics & Information Technology (DEIT), Govt. of India. (viz. NIC, n-Code Solution, Safescript, e-Mudhra Consumer Services Ltd, TCS, MTNL, IDRBT) or as notified by the CA /Finance Department, GoWB from time to time. DSC is given as a USB e-Token. After obtaining the Class 2 or Class 3 Digital Signature Certificate (DSC) from any of the above CA, they are required to register the fact of possessing the DSC through the registration system available in the above mentioned websites. A list of such licensed CAs’ is also available in the CCA website cca.gov.in. The prospective contractors / bidders may contact the Departmental e-Tendering Help desk located at the 7th Floor of Jalasampad Bhavan at Bidhannagar, Sector-II, Kolkata, through e-mails irrigationhelpdesk@gmail.com and dvcsc6816@gmail.com or Telephone No. 033-23346098 and the State Level e-Procurement Help Desk located at the Ground Floor of Jalasampad Bhavan through e-mail wbehelpdesk@gmail.com or Ph:(033)-2334 5161 on any working day between 10.30AM-5.30PM for any query on e-Tendering procedure, obtaining DSC and free of cost training on e-Procurement procedure.

Intending contractors/bidders are required to download the E.O.I. (Expression of Interest) documents directly from either of the websites stated above. **This is the only mode for submission of E.O.I.** The interested bidders eligible for the RFP are required to submit their bids through the e-Procurement System using their valid DSC e-Token with assigned PIN using login ID and password. Details of e-filing procedure for participating in e-tenders under

State Government have also been explained in the 'Bidders' Manual', available in the Departmental website www.wbiwd.gov.in.

Last date & time of submission of bid electronically, is on 16.07.2019 till 17.00 Hours IST.

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SECTION – I

NOTICE INVITING EXPRESSION OF INTEREST (E.O.I)

EoI No.: WBIW/EE/MDMD/EoI - 03/2019-20;

Dated 14.06.2019

Design, Supply, Erection, Testing & Commissioning of 33/6.6 KV Switchyard equipment along with 4 nos 5 MVA and 2 nos 2.5 MVA Power Transformer and consumer VCB panel, LT panel and other allied electrical works in connection with “Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical turbine pump sets of twenty two(22) nos. 150 cusec and 10(Ten) nos 75 cusec with electro-mechanical installation complete for the proposed additional pump house (augmentation of existing pump house) at Kulti for lower Bagjola khal in P.S Haroa, Mouja: Kamargati, G.P: Kulti, Block: Haroa, Dist: North 24 Parganas, State: West Bengal.”

**Government of West Bengal
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Office of the Executive Engineer
Metropolitan Drainage Mechanical Division**

**Jalasampad Bhawan (4th floor), Salt Lake City, Kolkata-91
Telephone No-03323345768, Email Id: mdmdiwd@gmail.com**

Online Expression of Interests (EoIs) are invited by **Executive Engineer, Metropolitan Drainage Mechanical Division, Irrigation & Waterways Directorate** from eligible registered firms for obtaining **Methodology, Specifications, BOQ and (Proposed) Budgetary Quotes** for **above mentioned work**

1.	EoI Document download and bid submission start date	14.06.2019 after 17.00 hrs
2	Pre bid meeting date & time	On 25.06.2019 at 2:30PM , Office chamber of Superintending Engineer, Mechanical & Electrical circle, 6 th floor, Jalasampad Bhavan, Salt Lake, Kol-91

2.	Last date and time for bid Submission	16.07.2019 upto 17:00 Hrs
3.	Date of bid opening	18.07.2019 after 10.00 hrs
4.	Bid Security	NIL
For any queries , bidder may contact this office before submission of offline bid at 033-23345768 , E-mail : mdmdiwd@gmail.com		

SECTION - II

1.0 INTRODUCTION TO THE PROJECT

The Irrigation and Waterways Department of the Government of West Bengal is responsible for the main system of drainage Canals which drain away both Sewage and from water from different municipalities including Kolkata Municipal Corporation.

One of the main draining system is Bagjola Khal which is draining important parts of the northern and north-eastern parts of Kolkata.

As its downstream and the Bagjola Khal drains into the Kultigong which is part of the Sundarban delta system. The Kultigong, at the outfall location of the Bagjola Khal, has a tidal fluctuation of about 4.5M during monsoon period. To ensure drainage into Kultigong during the higher tidal water levels a pump house of 4050 cusec (4,13,100 m³ / hr) has been proposed for construction.

1.1 LOCATION

The proposed Pumping Station is located at the outfall of Bagjola khal at Kultigong, P.O & P.S. - Haroa, Dist- 24 PGS(N), West Benal, 45 Km. away from Sealdah Rly. Stn.

1.2 OBJECTIVE

Objective of setting up the proposed Pumping Station is to provide intended extent of relief to the command areas of the proposed Pumping Station from water logging. This will lead to significant improvement of environment quality in the area as also the economic improvement of the community. Construction of Pumping Station of adequate capacity at out fall locations of the canals to reduce the frequency and extent of flooding thereby improving the level of service provided by the canals. Further to ensure year round dry feet for all within the catchment area of the Bagjola Khal.

2.0 SALIENT DESIGN DATA(S) OF THE PUMPING STATION

2.1 Civil & Hydraulic Data

SL NO	Particulars	Data for 150 Cusec	Data for 50 Cusec
1.2.1	(a) Inlet arrangement	15300 m ³ /Hr.	7600 m ³ /Hr
1.2.2	H.W.L. (Suction side)	+0.7 M	+0.7 M
1.2.4	(b) Hydraulic parameter of pimping Station		

SL NO	Particulars	Data for 150 Cusec	Data for 50 Cusec
	Pump floor level	(+)0.6 M	(+)0.6 M
1.2.5	Sump bottom level	(-)5.00 M	(-)5.00 M
1.2.6	(c) Outlet arrangement		
1.2.7	C. L. of Discharge pipe (Above H.W.L)	(+)4.00 M	(+)4.00 M

2.2 V.T. Pump Design

SL NO	Particulars	Data for 150 Cusec	Data for 50 Cusec
01	Service	Suitable for pumping solid bearing liquid such as waste water, industrial discharge, storm and canal drainage.	Suitable for pumping solid bearing liquid such as waste water, industrial discharge, storm and canal drainage.
02	Type	Axial / Mixed Flow	Axial / Mixed Flow
03	Duty	Continuous	Continuous
04	Location	Indoor	Indoor
05	Design capacity	15300 m ³ /Hr.	7600 m ³ /Hr
06	Nos. required	22 Nos.	10 Nos.
07	Head in Mtr.	6.632 M	7.865 M
08	Speed	<= 500 r.p.m.	<= 500 r.p.m.
09	Min. bowl efficiency required at design capacity (%)	85%	85%
10	Nos. of pump working in parallel	No parallel operation	No parallel operation
11	Range of operation	Between 70% and 13% of rated	Between 70% and 13% of

		capacity.	rated capacity.
12	Design & constructional feature	As per technical specification	As per technical specification
13	Material of construction	Column pipe – CI FG 260 IS 210 Impeller- Duplex stainless steel ASTM 890 Gr CD4MCU Line Shaft – SS ASTMA 276 - 316	Column pipe – CI FG 260 IS 210 Impeller- Duplex stainless steel ASTM 890 Gr CD4MCU Line Shaft – SS ASTMA 276 - 316
14	Supply of accessories and service	As per technical specification	As per technical specification
15	Tests and inspection	As per technical specification	As per technical specification

2.3 BRIEF SCOPE OF THE PROJECT :

The scope of work under this estimate includes the **Design, Supply, Erection, Testing & Commissioning of 33/6.6 KV Switchyard equipment along with 4 nos 5 MVA and 2 nos 2.5 MVA Power Transformer and consumer VCB panel, LT panel and other allied electrical works in connection with** “*Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical turbine pump sets of twenty two(22) nos. 150 cusec and 10(Ten) nos 75 cusec with electro-mechanical installation complete for the proposed additional pump house (augmentation of existing pump house) at Kulti for lower Bagjola khal in P.S Haroa, Mouja: Kamargati, G.P: Kulti, Block: Haroa, Dist: North 24 Parganas, State: West Bengal.*”

The works include all Mechanical, electrical, instrumentation, control and other related work as per as details scope of this estimate. The works are to be executed as per technical specification enclosed a separate part of this estimate. The part of specification shall be read in conjunction with other parts such as specifications, drawings and appendices which provide further information and details.

The contractor shall confirm of having visited site and collected and verified the data relating to site condition. The contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility. The contractor shall be responsible for overall verification of equipment under the scope of work eg. Make, Model, specifications and responsible for detailed design of mechanical and electrical works of the proposed pumping station. Compliances with these specifications does not limit the responsibility of the contractor for the overall performance of the pumping station. Contractor can offer changes in design for better performance. Justification of such changes shall be provided by the contractor. such changes are subject to approval by E.I.C.

2.0 ELIGIBILITY CRITERIA/PRE-QUALIFICATION

While submitting the proposal, the bidder shall ensure that the bidder meets the conditions of eligibility as described below:

Sl. No.	Eligibility criteria	Capability Assessment Documents
1	Should be registered in India	IT Return GST No. (If applicable)
2	Should be a original equipment manufacturer of VT Pumps	Authorization of manufacturer, if any

3.0 INSTRUCTIONS TO BIDDERS

Submission of Application

The EoI document can be downloaded from www.wbtenders.gov.in from 14.06.2019 after 17.00 hrs onwards. **Last date & time of submission of online bid electronically through the e-procurement portal of Govt. of West Bengal is on 16.07.2019 till 17:00 Hours (IST).**

No processing fee or bid security (EMD) is required during submission of the bid.

The applicant bidders/contractors are advised to carefully read all the 'Terms & Conditions' contained in this EoI. They should particularly go through the minimum desired Pre-qualification (PQ) works credential & financial eligibility criteria and satisfy them for all the mandatory eligibility requirements. Bidders desirous of participating in the EoI and should submit bids only if they fulfill the minimum PQ eligibility criteria and are in possession of all the required PQ Credential documents "in original"

This EoI is not an agreement and is neither an offer nor invitation by 'The Authority' to the prospective Bidders or any other person to allot the project. The information contained in this EoI or subsequently provided to Bidder, whether verbally or in documentary or any other form by or on behalf of the 'Authority' or any of its employees or advisors, is provided to Bidder on the terms and conditions set out in this EoI and such other terms and conditions subject to which such information is provided. The purpose of this EoI is to provide interested parties with information that may be useful to them in making their financial offers (Bids) pursuant to this EoI. This EoI includes statements, which reflect various assumptions and assessments arrived at by the 'Authority' in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This EoI may not be appropriate for all persons, and it is not possible for the 'Authority', its employees or advisors to consider the objectives, financial situation and particular needs of each party who reads or uses this EoI. The assumptions, assessments, statements and information contained in the Bidding Documents, especially the Project Report/data may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this EOI and obtain independent advice from appropriate sources.

Information provided in this EoI to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The 'Authority' accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The 'Authority', its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this EoI or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the EoI and any assessment, assumption, statement or information contained therein or deemed to form part of this EoI or arising in any way for participation in this Bid Stage.

The 'Authority' also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this EoI.

The 'Authority' may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this EoI.

The issue of this EoI does not imply that the 'Authority' is bound to select a Bidder or to appoint the Selected Bidder/Consortium or Contractor, as the case may be, for the Project and the 'Authority' reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of their Bid including but not limited to preparation, documentation, scanning uploading, expenses associated with any demonstrations or presentations which may be required by the 'Authority' or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the 'Authority' shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the e-Bid, regardless of the conduct or outcome of the e-Bidding Process.

I&WD reserve the right to verify all statements, information and documents submitted by the applicant in response to the EoI Document. Failure of the I&WD to undertake such verification shall not relieve the applicant of its obligations or liabilities hereunder nor will it affect any rights of I&WD there under.

The EoI document shall be submitted by the bidder duly signed on each page of the document. In case the proposal is submitted on the document downloaded from official website, the applicant shall be responsible for its accuracy and correctness as per the version uploaded by I&WD and shall ensure that there are no changes caused in the content of the downloaded document. In case of any discrepancy between the downloaded or photocopied

version of the EoI document and the original EoI document issued by the I&WD, the latter shall prevail.

The right to suspend the short-listing process or part of the process to accept or reject any or all applications at any stage of the process and / or to modify the process or any part thereof at any time without assigning any reason therefore is reserved by I&WD without any obligation or liability whatsoever.

This is not a tender advertisement. The invitation of expression of interest is without any commitment at this stage.

The bid document should contain the following documents attached as annexure:

1. Cover Letter (as per Annexure-A/1)
2. Details of Representative from Bidder/Lead Member of Consortium (as per Annexure-A/2)
3. BOQ (online)

If the envelope is not sealed and marked as instructed above, this office assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted. This office is not responsible for the non-receipt or delayed receipt of bid document send through courier or post.

Note: -

The Proposal shall be made in the Forms specified in this EoI Document. Any attachment to such Forms must be provided on separate sheets of paper and only information that is directly relevant should be provided. This may include photocopies of the relevant pages of printed documents.

Executive Engineer is not bound to accept any EoI and reserve the right to accept or reject any EoI, and reserve the right to annul the selection process and reject all EoI at any time prior to the award of the selection without assigning any reason(s) whatever and without thereby incurring any liability towards the affected participant(s) on this ground.

5.0 SCOPE OF THE WORK

The Basic scope covers the design, manufacturing, supply and inspection, testing, delivery, installation and commissioning of 22 nos. 150 cusec and 10 nos. 75 cusec VT pump for the proposed pumping station for the proposed additional pump house(augmentation of existing pump house) at Kultigong for lower Bagjola Khal in P.S: Haroa, Mouja: Kamargati, G.P: Kulti, Block-Haroa, Dist: North 24 Parganas, State: West Bengal. with bell mouth, column assembly, discharge elbow, motor stool, thrust bearing , non reversing device & lubricating system .

Each Vertical Turbine pump shall be capable of developing the required total head at rated capacity for continuous operation at the required total head at low water level in the sump. The pump will be required to work without parallel operation satisfactorily over the head requirements as per system resistance curves. Supply and installation of E.O.T. crane of 15 MT, MS Gratings, Bore well with submersible pump and centrifugal pump for cooling and lubrication purpose are also in the scope of work.

The design, drawing, manufacture, fabrication, erection, testing/ inspection of 33 KV outdoor substation shall be carried out strictly as per Indian Electricity Rules , Latest BIS code of practices and prior approval of Directorate of Electricity , Govt of West Bengal.

Supply, installation, testing, commissioning of 4 nos. 5MVA 33KV/6.6KV, 2 nos. 2.5MVA 33KV/6.6KV, and 2 nos. 0.5MVA 33KV/0.433KV power transformer, 6.6KV VCB consumer panel, ACB at Sub Station (433 V), 1 set LT panel at Pump House ,Capacitor Bank , HT < Cabling , Earthing, , Internal illumination and allied electrical works ,Lightening conductor, instrumentation and communication system, Batter bank with charges also in the scope of work.

6.0 DECLARATION

I/We have completely read and hereby accept the scope of work, requirements, terms & conditions.

Signature of bidders authorized

Representative with seal:

Full address:

SECTION - III

ANNEXURE – A/1

Cover letter for Expression of Interest

To,
The Executive Engineer
Metropolitan Drainage Mechanical Division,
Jalasampad Bhawan (4th floor), Salt Lake City, Kolkata-91
Telephone No-03323345768, Email Id: ee-metromechdvn.wbiwd@gov.in
I & WD, Govt. of West Bengal

Sub: Submission of bid for obtaining Methodology, Technical Specification, BOQ and Budgetary Quote for the proposed: Design, Supply, Erection, Testing & Commissioning of 33/6.6 KV Switchyard equipment along with 4 nos 5 MVA and 2 nos 2.5 MVA Power Transformer and consumer VCB panel, LT panel and other allied electrical works in connection with “*Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical turbine pump sets of twenty two(22) nos. 150 cusec and 10(Ten) nos 75 cusec with electro-mechanical installation complete for the proposed additional pump house (augmentation of existing pump house) at Kulti for lower Bagjola khal in P.S Haroa, Mouja: Kamargati, G.P: Kulti, Block: Haroa, Dist: North 24 Parganas, State: West Bengal.*”

Dear Sir,

In response to the Invitation for Expressions of Interest (EoI) published on _____ bearing Ref. No. _____ “Supply, installation, testing and commissioning including trial run and one (1) year successful operation and maintenance(with spares) of (water lubricated) vertical turbine mixed / axial flow pump sets four (04) nos. 50 cusec with allied electrical (HT & LT) and mechanical works complete for the proposed dumdum park pumping station at the confluence of cantonment khal and Bagjola khal , dist- 24 PGS(N) ,West bengal .”

I / We acknowledge that Executive Engineer will be relying on the information provided in the Bid and the documents accompanying the Bid for recommendation of the most suitable Methodology, Technical Specification, BOQ and Budgetary quotes for the aforesaid Project, and we certify that all information provided therein is true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the Bid are true copies of their respective originals.

I / We shall make available to the Executive Engineer any additional information it may find necessary or require to supplement or authenticate the Bid.

I / We acknowledge the right of the Executive Engineer to reject our Bid without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

I / We declare that:

- a) I / We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority; and
- b) I / We do not have any conflict of interest in accordance with the EoI document; and

I / We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Bid that you may receive nor to invite the Bidders to Bid for the Project, without incurring any liability to the Bidders.

In the event of my / our being declared as the Recommended Bidder, I / we agree to enter into an Agreement in accordance with the documents that has been provided to me / us. We agree not to seek any changes in the aforesaid documents and agree to abide by the same.

I / We agree and understand that the Bid is subject to the provisions of the Bidding Documents. In no case, I / we shall have any claim or right of whatsoever nature if the Project / Agreement is not awarded to me / us or our Bid is not opened or rejected.

The estimated budgetary price has been quoted by me / us after taking into consideration all the terms and conditions stated in the EoI documents, our own estimates of costs including all direct and indirect tax liabilities and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.

I / We agree and undertake to abide by all the terms and conditions of the EoI document.

In witness thereof, I / we submit this Bid under and in accordance with the terms of the EoI documents.

Yours faithfully,

(Signature, Name & Designation of the Authorized Signatory)

Date:

Place:

Name & Seal of Bidder

Details of Representative from Bidder/Lead Member of Consortium

Part A : General Information of Bidding Companies/Agency		
1	Name of the Company/Agency	
2	Type of Organization	
3	Address of the registered office of the company/Agency	
4	Year incorporated	
5	Address for communication	
6	Contact person: Name Designation Phone No. Fax No. Mobile No. Email address	
General Information Subsidiary and Associated Companies (wherever applicable):		
1	Name of the company	
2	Address of the registered office of the company/Agency	
3	Nature of Business	
4	Brief description of company (not more than 100 words)	
5	Any other information the bidder would like to include:	
Part B - Details of GST		
1	GST Registration No.	
2	LUT No. for zero rated supply	

Memo No. 761 /2(5)/6E-II(Pt-III)

Date: 14.06.2019

Copy submitted for favour of kind information to:

- 1) The Chief Engineer, South, I&W Directorate, Govt of West Bengal
- 2) The Secretary to the Govt. of West Bengal, I&W Department.
- 3) The Joint Secretary (Works) to the Govt of West Bengal, I&W Department.
- 4) The Deputy Secretary (Works) to the Govt of West Bengal, I&W Department.
- 5) The Superintending Engineer, Metropolitan Drainage Circle, I&W Dte.
- 6) The Superintending Engineer, Western Circle-I, I&W Dte.
- 7) The Superintending Engineer, Eastern Circle, I&W Dte.
- 8) The Superintending Engineer, Mechanical & Electrical Circle, I&W Dte.

(S.Roy)

Executive Engineer

Metropolitan Drainage Mechanical Division

Memo No: 761 /2(5)/6E-II(Pt-III)

Date: 14.06.2019

Copy forwarded for favours of kind information to:

- 1) The Assistant Engineer, Chowbhaga Pumping Station..
- 2) The SDO/ Uttarbhag (M&E) Sub Division.
- 3) The Estimating Section, MDMD.
- 4) The Accounts Section, MDMD.
- 5) Notice Board of MDMD.

(S.Roy)

Executive Engineer

Metropolitan Drainage Mechanical Division

Validate

Print

Help

Item Rate BoQ

Tender Inviting Authority: Executive Engineer, Metropolitan Drainage Mechanical Division.

Name of Work: Design, Supply, Erection, Testing & Commissioning of 33/6.6 KV Switchyard equipment along with 4 nos 5 MVA and 2 nos 2.5 MVA Power Transformer and consumer VCB panel, LT panel and other allied electrical works in connection with "Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical turbine pump sets of twenty two(22) nos. 150 cusec and 10(Ten) nos 75 cusec with electro-mechanical installation complete for the proposed additional pump house (augmentation of existing pump house) at Kulti for lower Bagjola khal in P.S Haroa, Mouja: Kamargati, G.P: Kulti, Block: Haroa, Dist: North 24 Parganas, State: West Bengal."

Contract No: WBIW/EE/MDMD/EOI-03(e)/2019-20

Name of the Bidder/ Bidding Firm / Company :						
<div>PRICE SCHEDULE</div> <div>(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)</div>						
NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1	Supply, delivery, storing at site,erection, testing & commissioning of 5 MVA 33KV / 6.6KV, 3 phase, 50HZ / , Dyn 11 outdoor ONAN type transformer in IP 55 enclosure with copper windings, OFF load tap changing arrangement in steps of + 1-2.5% & ± 7.5%, having HV Bushing suitable for primary side and cable entry box for 6.6 KV, 3 x 3C x 300 sqmm. XLPE/ARMD, AL cables on the secondary side, three channel temperature scanner for continuous monitoring of the windings and oil temperature etc. with supply of all associated materials and accessories like oil conservator,Bucholz relay,pressure release valve silica gel breather, mounting channels bolts ,nuts washers, screw, clamps, painting, earthing etc.and confirming to IS 1180(Level-2)and as per specification as laid down in the contract complete in all respect as required at site including construction of required size RCC pedestal.. Make- KEC/ABB/Schinder.	4.000	Nos		0.00	INR Zero Only
2	Supply, delivery, storing at site,erection, testing & commissioning of 2.5 MVA 33KV / 6.6KV, 3 phase, 50HZ / , Dyn 11 outdoor ONAN type transformer in IP 55 enclosure with copper windings, OFF load tap changing arrangement in steps of + 1-2.5% & ±7.5%, having HV Bushing suitable for primary side and cable entry box for 6.6 KV, 2 x 3C x 300 sqmm. XLPE/ARMD, AL cables on the secondary side, three channel temperature scanner for continuous monitoring of the windings and oil temperature etc. with supply of all associated materials and accessories like oil conservator,Bucholz relay,pressure release valve silica gel breather, mounting channels bolts ,nuts washers, screw, clamps, painting, earthing etc.and confirming to IS 1180(Level-2)and as per specification as laid down in the contract complete in all respect as required at site including construction of required size RCC pedestal.. Make- KEC/ABB/Schinder.	2.000	Nos		0.00	INR Zero Only

3	Supply, delivery, storing at site, installation, testing & commissioning of 500 KVA, 33KV /433V, 3 phase, 50HZ / , Dyn 11 outdoor ONAN type transformer in IP 55 enclosure with copper windings, OFF load tap changing arrangement in steps of + 1-2.5% & ±7.5%, having HT bushing suitable for primary side and 1.1KV, 3 x 3-1/2C x 300 sqmm. XLPE/ARMD, AL cables on the secondary side, three channel temperature scanner for continuous monitoring of the windings, with supply of all associated materials and accessories like oil conservator, silica gel breather, Buchluz relay, mounting channels bolts, nuts washers, screw, clamps, painting, earthing etc. and confirming to IS- 1180 (Level-2) and as per specification as laid down in the contract complete in all respect as required at site including construction of required size RCC pedestal. Make- Schneider/ KEC /ABB.	2.000	Nos		0.00	INR Zero Only
4	Supply, Errection, testing and commissioning of Vacuum Circuit Breaker of 33 KV, 3ph, 50 c/s, 1250 A, outdoor type, porcelain clad with making all connections and control cable for operating the V.C.B. and C.T./P.T. Including cost of all material, T&P (Hot dip galvanized M.S structure with RCC foundation as required) etc. and as per detailed specification in tender document. (Make- Siemens/ Schneider/ABB)	9.000	Nos		0.00	INR Zero Only
5	Supply, Errection, testing and commissioning of Outdoor type Isolator of 33 KV rated, insulation Class F, 170 KV peak 1250 A (with maximum current capacity of 17.5 KA for 2 sec), 3 phase, double break centre post rotating with earth blades along with supporting insulator, base channel, manual operating mechanism, terminal control Including cost of all material, T&P, rotary switch etc. and as per detailed specification in tender document.	12.000	Nos		0.00	INR Zero Only
6	Supply, Errection, testing and commissioning of 33 KV Current Transformer, single phase, 50 c/s, 3 core hermitically sealed out door type C.T. having following current ratio including cost of all material, T&P etc. and as per detailed specification in tender document. (Each set Consists of 3 nos. C.T.) (Make- Jyoti/AE/Kappa) (IP 65 or More)					
6.01	Dual Core CT with CTR: 150A/1A-1A, 30VA, CL: 1.0/5P10	12.000	Nos		0.00	INR Zero Only
6.02	Dual Core CT with CTR: 75A/1A-1A, 30VA, CL: 1.0/5P10	6.000	Nos		0.00	INR Zero Only
6.03	Dual Core CT with CTR: 15A/1A-1A, 30VA, CL: 1.0/5P10	6.000	Nos		0.00	INR Zero Only
6.04	Dual Core CT with CTR: 600A/1A-1A, 30VA, CL: 1.0/5P10 (incomer)	3.000	Nos		0.00	INR Zero Only
7	Supply, Errection, testing and commissioning of 33 KV Potential Transformer, single phase, 50 c/s, 3 core hermitically sealed out door type P.T. having voltage ratio 33 KV /110 V, 150 VA, including cost of all material, T&P etc. and as per detailed specification in tender document. (Each set Consists of 3 nos. P.T.) (Make- Jyoti/AE/Kappa) (IP65 or more)	2.000	Set		0.00	INR Zero Only
8	Supply, Errection, testing and commissioning of Lightning Arrestor of 10 KA, 42 KV rated insulation class, BIS 170 KV peak single phase, 50 Hz valve type, LA station type, outdoor type, along with surge counter and insulation base and suitable for 33 KV system conforming to IS : 3070(P-1)1974 and amendments thereafter and as required, including cost of all material, T&P etc. and as per detailed specification in tender document and as per approved drawing to complete the whole job. (ELPRO INTERNATIONAL)	27.000	Nos		0.00	INR Zero Only

9	Supply, Errection, testing and commissioning of 33 KV Earthing System in switchyard with G.I Pipe Electrode of 80 mm dia and 3000 mm length with perforations of 12 mm dia holes @ 150 mm from each other at right angle along with removable type top cap and 250 mm clamp with nuts & bolts and G.I Flat of size 75 x 8 mm, for connecting structures and all sub station equipments i.e Transformers, VCB, PTs. CTs, High level bus, Low level bus, Isolators, Lightening arresters & all structures from earthing grid GI shield wire as required to complete the job as a whole as per approved drawing and calculation to complete including cost of all material, T&P etc. and as per detailed specification in tender document.(Approx 50 sets electrodes)	1.000	Job		0.00	INR Zero Only
10	Supply, Errection, connections, testing and commissioning of Control Cable for 33 KV incomer and 8 nos Transformer feeders, CTs, PTs, and Isolators, interlocking by 1.1 kV grade PVC insulated steel armoured 2.5 sq mm copper conductor for laying with fixing of lugs, ferrules and termination sockets as per approved cable schedule and calculation of requisite sizes and cores, including cost of all material, T&P etc. and as per detailed specification in tender document and as per approved drawing to complete the whole job.	1.000	Job		0.00	INR Zero Only
11	Supply, Errection, testing and commissioning of 33 KV Relay control panel of requisite size (for 1 no. incomer & 8 nos. outgoing V.C.B. for transformer feeders) fabricated with 14 SWG CRC sheet, powder coated painted having following equipments:					
11.1	For incomer: (i) O/C & E/F relay, Type: MICOM P122, Make: Areva/Schinder, Rating: 1A, Aux voltage: 110V DC.....1 no. (ii) Tripping relay VAJH 13, Make: Areva/Schinder, Aux voltage: 110V....1No (iii) Trip circuit supervision relay(TCN), Type: VAX31, Make: Areva/Schinder, Aux voltage: 110V DC....1No (iv) DC fail relay VAA 11, Make: Areva/Schinder, Aux voltage: 110V DC.....1No. (v) Annunciator with Push button. 110V DC, 8 window, Make: Minilec.....1No. (vi) Digital Ammeter 0-600A with ASS (vii) Digital voltmeter 0-33KV with VSS (viii) 3-phase Energy meter...1No. (ix) Breaker control switch(TNC)...1No. (x) Local/Remote selection switch (xi) Hooter (xii) Frequency meter....1 no. (xiii) Power factor meter...1No. (xiv) Indication lamps for ON/OFF/SPRING CHARGE/Auto trip/Dc fail/TCH/PT supply. (xv) MCB for DC supply and AC supply, Fuse & Link as required.....1 set	1.000	Set		0.00	INR Zero Only

11.2	For outgoing transformer feeder: (i) O/C & E/F relay, Type: MICOM P122, Make: Areva/Schinder, Rating: 1A, Aux voltage: 110V DC.....1 no. (ii) Restricted Earth fault relay (REF), Type: CAG14, Make: Areva/Schinder (iii) Stand by E/F relay, Type: CDG11, Make: Areva/Schinder (iv) Transformer differential relay. Type: DUOBIA(M)/MIB202, Make: Essen Reroll, Aux voltage: 110V DC....1No. (v) Tripping relay: Type: VAJH23, Make: Areva/Schinder, Aux Voltage: 110V DC.....1No. (xvii) Indication lamps for ON/OFF/SPRING CHARGE/Auto trip/Dc fail/TCH/PT supply. (vi) Trip circuit supervision relay. Type: VAX31, Make: Areva/Schinder, Aux. voltage: 110V DC....1No. (vii) Auxiliary Relay VAJH13, Make: Areva/Schinder, Aux voltage: 110V DC....1 No. (viii) DC fail relay, Type: VAX11, Aux voltage: 110V DC....1No. (ix) Transformer auxiliary relay. Type: VAA33, Aux. voltage: 110V.....3 nos. (x) Breaker control switch (TNC)....1No. (xi) Local/Remote switch....1No. (xii) Digital ammeter with ASS as per 33 KV CT ratio for 1 no incomer feeder & 8 nos transformer feeders)....1No in each feeder. (xiii) Digital voltmeter 0-33KV with VSS (1 no incomer feeder & 8 nos transformer feeders)....1No in each feeder. (xiv) Annunciation with push button. 12 window, Make: Minilec. (xv) Semaphore, Make: ALSTOM, Aux voltage: 110V DC.....2 nos/panel. (xvi) Hooter....1 no. (xvii) Indication lamps for ON/OFF/SPRING CHARGE/Auto trip/Dc fail/TCH/PT supply. (xviii) MCB for DC supply and AC supply, Fuse & Link as required.....1 set	8.000	Set		0.00	INR Zero Only
12	Procurement of materials, design of structure, preparation of fabrication drawing, fabrication, galvanising, proto assembly, testing and FOR destination, delivery of structural members for switchyard equipment support structure, Gantry etc fabricated from structural steel conforming to IS:2062 including GInuts, bolts, foundation bolts, washers and other accessories complete as per as per approved drawing and technical specification to complete the whole job. [Consisting of but not limited to the following items, subject to site requirement] (i) L.A with bus support structure - 9 sets. (ii) Isolator structure - 12 sets. (iii) 33 KV CT structure....9 sets (iv) Bus support structure (DP LL)-10 sets. (v) High level bus support-9 sets. (vi) PT structure-2 sets. conforming to relevant IS.	1.000	Job		0.00	INR Zero Only
13	Supply, Erection, Testing & Commissioning of Bus bar (both High Level and Low Level) suitable for Al pipe size 48 mm/ 50 mm dia IPS x 3 mm ACSR Conductor, suspension / tension insulator, Post Insulator, Hardware, Power Connection clamps etc. As required to complete the work as per layout.	1.000	Job		0.00	INR Zero Only
14	Providing and Erection of fire stand as per approved drawing for fire bucket with M.S. angle iron 50x50x6 mm with shed of M.S. Sheet to cover the bucket and properly including cost of all material, T&P etc. and as per detailed specification in tender document.	1.000	Job		0.00	INR Zero Only

15	Substation Yard illumination : Outdoor yard lighting covering design, engineering, testing & commissioning of under mentioned lighting fixtures complete with lamps, regulators, supports & accessories, lighting poles including GI conduit, lighting wires, GI earth wires, switch boards, switches, junction boxes, pull out boxes etc complete : Type-BVP410 LED 210 CW HE NB FG S3 XT, Philips make or equivalent housed in powder coated die cast Aluminium housing having clear acrylic, anti moth treated gasket, reflector together with 9 mtr. swaged steel tubular pole with single arm support and looping box arrangement, requisite amount of 1.1 kV grade 4C X 16 sq mm al, Ar XLPE cable for light pole and PVC insulated 3C x 1.5 sq.mm flexible copper wire (forlooping box to light fittings) including requisite amount of GI conduit and 50 mm dia, 3.64 mm thick, 3 mtr long GI pipe earth electrode for each loght pole etc all complete as per Tender Specification.(Approx 20 light pole)	1.000	Job		0.00	INR Zero Only
16	Auto CADD 33/6.6 KV and distribution power system drawing with 12 copies indication complete land with dimension, plan of sub station with equipment ,road , duct routes , including approval of D.O.E., Govt of West Bengal .	1.000	Job		0.00	INR Zero Only
17	Providing and Errection of ACSR/ DOG Conductor(suitable size) as per approved drawing including cost of all material, connectors, lugs, supports, T&P etc. and as per detailed specification in tender document(for Transformer, VCB, CTs, PTs,Isolators, LA etc)	1.000	Job		0.00	INR Zero Only
18	Providing of Earth Shielding of 33 KV Sub Station including S &F of as per following items as per approved drawing and technical specification to complete the whole job. 1. 12.8 Mtr. Rail Pole (8 Nos.) 2. CI Reel 3. Turn Buckle 4. GI Flat 50 x 6 mm 5. 50 Square ACSR Rabbit Conductor as Shielding wire .	1.000	Job		0.00	INR Zero Only
19	CONSUMER 1-PANEL VACUUM CIRCUIT BREAKER AT SUB-STATION Supply,delivery, storing at site,erection testing & commissioning of indoor, floor mounted metal clad totally enclosed horizontal cubicle fully compartmentalized,extensible on either side motor operated spring charged, electrically/manually operated fully draw-out type 6.6KV Vacuum Circuit Breaker(VCB) Board having rupturing capacity of 180MVA at 6.6KV conforming to specification etc and detail shown in single line diagram and as described below Including supplying necessary mounting channels and all other mounting accessories complete. Make- Siemens/ABB/Schnider Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same. (A) Incomer/ Outgoing (i) 1-No. 1250A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB) (ii) (a) 1-set (3 Nos in each set) dual Core CT for 4 nos 5MVA Transformer: CTR:600/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA (b) 1-set (3 Nos in each set) dual Core CT for 2 nos 2.5 MVA Transformer: CTR:300/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA					

19.1	(iii)2-set cable termination box suitable for 3C x 300 sqmm.6.6KV, XLPE /A, AL cable (iv)1-set microprocessor based Numerical type relay with two elements for O/C and one element for E/F protection with time and current setting,(70%- 100%for current and 0.3-1.0 for time settings), RS 485 and 232 port for SCADA integration and data up and down loading etc. with aux/tripping relays as required. (v)1-set 0-600A AC flush mounting digital ammeter with selector switch for 4 nos 5 MVA transformers and 1-set 0-300A AC flush mounting digital ammeter with selector switch for 2 nos 2.5 MVA transformers. (vi)1-set Draw out type 6.6KV/ 110V, 100VA star/star dry type potential transformer with primary (3A) and secondary (4A) HRC fuse protections. (vii) 1-set 0-8KV flush mounted digital voltmeter and selector switch (viii) 1-set High speed master trip relay. (ix) 1-set Continuous trip circuit supervision with relay (x) 1-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (xi) 1-set (2 Nos. in each set) 110V, DC shunt trip coil for tripping with power pack unit (xii) 1-set (2 Nos. in each set) Aux. contactors with necessary fittings (xiii) 1-set Digital KWH & PF meter (xiv) Earth bus-bar and all other accessories complete (xv) 1-set R/Y/B phase indication lamps	6.000	Set		0.00	INR Zero Only
20	CONSUMER 1-PANEL AIR CIRCUIT BREAKER AT SUB-STATION Supply,delivery, storing at site,erection testing & commissioning of indoor, floor mounted metal clad totally enclosed horizontal cubicle fully compartmentalized,extensible on either side motor operated spring charged, electrically/manually operated fully draw-out type 433V Air Circuit Breaker(ACB) Board having rupturing capacity of 35MVA at 433V conforming to specification etc and detail shown in single line diagram and as described below Including supplying necessary mounting channels and all other mounting accessories complete.LT panel shall be suitable for 433V AC 50HZ,3 phase and neutral system. Make-Siemens/L&T/ABB/Schneider Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same.					
20.1	(A) Incomer/ Outgoing (i) 1-Nos 800A FP,500V, 50 KA,Air Circuit Breaker (ACB) (ii)1-set (3 Nos in each set) CT with CTR 800/1A, 15VA,CL-1 for metering . (iii)2-set cable termination box suitable for 3 nosx 3½ -C x 300 sqmm.1.1KV, XLPE /A, AL cable (iv)1-set 0-800A AC flush mounting digital ammeter with selector switch. (v) 1-set 0-500V flush mounted digital voltmeter with selector switch (vi) 1-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (vii) 1-set R/Y/B phase indication lamps (viii) 1-set TRIP/NEUTRAL/CLOSE selector switch (ix) Earth bus-bar and all other accessories complete (x) 1-set Multi Function Meter	2.000	Set		0.00	INR Zero Only

21	<p>HT PANEL IN PUMP HOUSE FOR HIGHER CAPACITY MOTOR</p> <p>Supply, delivery, storing at site,erection, testing & commissioning of 6.6KV (180MVA) TP floor mounting free standing HTpanel made of 14SWG CRCA sheet steel extensible on either side totally enclosed,dust and vermin proof, self supported,free standing unit with base channel,multi tier, compartmentalised cubicle,front access type construction with details of feeders as given below .HT panel shall be suitable for 6.6KV AC 50HZ,3 phase system.Panels shall be treated with seven tanks process before painting with two coats of epoxy paint over two coats of epoxy primer all of approved shade complete with front operated incoming and outgoing switchgears,cablealleys,provision for cable entries from top and bottom, necessary meters, internal wiring with1.1KV,copper wire (2.5 sq.mm) protection HRC fuse etc terminal blocks, selector switches, inter connection with insulated(1.1KVgrade) colour coded copper conductor cable,gland plates, earth bus of copper, lifting bolts, level inscriptions, earth connections etc and supply of all necessary accessories all complete and mending good the damages as required. Make-Siemens/ABB/Schneider: Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same.</p>					
21.1	<p>(A) Incomer</p> <p>(i) 2-No 1250A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB)</p> <p>(ii)2-set (3 Nos in each set) dual Core CT: CTR:600/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA</p> <p>(iii)2-set cable termination box suitable for double run 3C x 300 sqmm.6.6KV, XLPE /A, AL cable</p> <p>(iv)2-set microprocessor based Numerical type relay with two elements for O/C and one element for E/F protection with time and current setting,(70% - 100%for current and 0.3-1.0 for time settings), RS 485 and 232 port for SCADA integration and data up and down loading etc.</p> <p>(v)2set-0-600A flush mounting digital ammeter with selector switch</p> <p>(vi) 2-set Draw out type 6.6KV/ 110V, 150VA star/star dry type potential transformer with primary (3A) and secondary (4A) HRC fuse protections.(2 Nos for Bus PT and 1 no for line PT)</p> <p>(vii) 2-set 0-8KV flush mounted digital voltmeter and selector switch</p> <p>(viii) 2-set high speed master trip relay.</p> <p>(ix) 2 set-Continuous trip circuit supervision with relay</p> <p>(x) 2 set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons</p> <p>(xi) 2- set (2 Nos. in each set) - 110V, DC shunt trip coil for tripping with power pack unit</p> <p>(xii) 2- set (2 Nos. in each set)- Aux. contactors with necessary fittings</p> <p>(xiii) 2-set Digital KWH & PF meter</p> <p>(xiv) Earth bus-bar and all other accessories complete</p> <p>(xv) 2-set R/Y/B phase indication lamps</p> <p>(xvi) 1 set: TNC switch & Local/Remote selection switch.</p>					

21.2	<p>(B) Bus-Bars 2-Set TP, 6.6KV, 1250A, 180 MVA continuous rated copper bus-bar with insulating sleeves</p> <p>(C) Bus Coupler (i) 1-No 1250A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB) (ii)1-set (3 Nos) dual Core CT: CTR:600/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA (iii)1-set microprocessor based Numerical type relay with two elements for O/C and one element for E/F protection with time and current setting,(70%- 100%for current and 0.3-1.0 for time settings), RS 485 and 232 port for SCADA integration and data up and down loading etc. (iv)1set-0-600A flush mounting digital ammeter with selector switch (v) 1-set high speed master trip relay. (vi) 1set-Continuous trip circuit supervision with relay (vii) 1 set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (viii) 1- set (2 Nos.)- Aux. contactors with necessary fittings (ix) Earth bus-bar and all other accessories complete (x) Annunciator unit. 8W (xi) 1-set R/Y/B phase indication lamps</p>					
21.3	<p>(D) Outgoing (i) 12-Nos. 630A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB) (ii) 12-set (3 Nos in each set) dual Core CT: CTR:75/1A+1A, CORE 1: For metering, class-0.5, 10VA, CORE 2: For Protection, Class-5P10, 15VA (iii)12-set cable termination box suitable for 3C x 300 sqmm.6.6KV, XLPE /A, AL cable (iv)12-set 0-75A AC flush mounting digital ammeter with selector switch. (v)12-set high speed master trip relay/aux relay. (vi) 12-set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (vii) 12-set - Aux. contactors with necessary fittings (viii) Annunciator unit. 8W (ix) Hooter (x) 12-set R/Y/B phase indication lamps (xi) 12-set Temperature Scanner (Masibus make) (xii) 12-set MICOM P225 brand relay for motor protection (xiii) 1 set: TNC switch & Local/Remote selection switch.</p>	2.000	Set		0.00	INR Zero Only

22	<p>HT PANEL IN PUMP HOUSE FOR LOWER CAPACITY PUMPS</p> <p>Supply, delivery, storing at site,erection, testing & commissioning of 6.6KV (180MVA) TP floor mounting free standing HTpanel made of 14SWG CRCA sheet steel extensible on either side totally enclosed,dust and vermin proof, self supported,free standing unit with base channel,multi tier, compartmentalised cubicle,front access type construction with details of feeders as given below .HT panel shall be suitable for 6.6KV AC 50HZ,3 phase system.Panels shall be treated with seven tanks process before painting with two coats of epoxy paint over two coats of epoxy primer all of approved shade complete with front operated incoming and outgoing switchgears,cablealleys,provision for cable entries from top and bottom, necessary meters, internal wiring with1.1KV,copper wire (2.5 sq.mm) protection HRC fuse etc terminal blocks, selector switches, inter connection with insulated(1.1KVgrade) colour coded copper conductor cable,gland plates, earth bus of copper, lifting bolts, level inscriptions, earth connections etc and supply of all necessary accessories all complete and mending good the damages as required. Make-Siemens/ABB/Schneider: Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same.(N.B: Panel may be split up into 2(two) parts(1 part consisting of 1 no incomer, 1 no bus coupler with cable connection arrangments for power & control, 6 nos outgoing feeder. another part consisting of 1 no incomer, and cable connection arrangments from bus coupler unit for power & control, 6 nos outgoing feeder)</p>					
22.1	<p>(A) Incomer</p> <p>(i) 2-No 1250A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB)</p> <p>(ii)2-set (3 Nos in each set) dual Core CT: CTR:300/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA</p> <p>(iii)2-set cable termination box suitable for 3C x 300 sqmm.6.6KV, XLPE /A, AL cable</p> <p>(iv)2-set microprocessor based Numerical type relay with two elements for O/C and one element for E/F protection with time and current setting,(70%- 100%for current and 0.3-1.0 for time settings), RS 485 and 232 port for SCADA integration and data up and down loading etc.</p> <p>(v)2set-0-300A flush mounting digital ammeter with selector switch</p> <p>(vi) 3-set Draw out type 6.6KV/ 110V, 100VA star/star dry type potential transformer with primary (3A) and secondary (4A) HRC fuse protections.(2 nos as bus PT and 1 No as Line PT)</p> <p>(vii) 2-set 0-8KV flush mounted digital voltmeter and selector switch</p> <p>(viii) 2-set high speed master trip relay.</p> <p>(ix) 2 set-Continuous trip circuit supervision with relay</p> <p>(x) 2 set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons</p> <p>(xi) 2- set (2 Nos. in each set) - 110V, DC shunt trip coil for tripping with power pack unit</p> <p>(xii) 2- set (2 Nos. in each set)- Aux. contactors with necessary fittings</p> <p>(xiii) 2-set Digital KWH & PF meter</p> <p>(xiv) Earth bus-bar and all other accessories complete</p> <p>(xv) 2-set R/Y/B phase indication lamps</p> <p>(xvi) 1 set: TNC switch & Local/Remote selection switch.</p>					

22.2	<p>(B) Bus-Bars 2-Set TP, 6.6KV, 1250A, 180 MVA continuous rated copper bus-bar with insulating sleeves</p> <p>(C) Bus Coupler (i) 1-No 1250A TP,6.6 KV, 26.2 KA for 3 sec,Vacuum Circuit Breaker (VCB) (ii)1-set (3 Nos) dual Core CT: CTR:300/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA (iii)1-set microprocessor based Numerical type relay with two elements for O/C and one element for E/F protection with time and current setting,(70%- 100%for current and 0.3-1.0 for time settings), RS 485 and 232 port for SCADA integration and data up and down loading etc. (iv)1set-0-300A flush mounting digital ammeter with selector switch (v) 1-set high speed master trip relay. (vi) 1set-Continuous trip circuit supervision with relay (vii) 1 set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (viii) 1- set (2 Nos.)- Aux. contactors with necessary fittings (ix) Earth bus-bar and all other accessories complete (x) Annunciator unit. 8W (xi) 1-set R/Y/B phase indication lamps (xii) 1 set: TNC switch & Local/Remote selection switch</p>					
22.3	<p>(D) Outgoing (i) 12-Nos 630A TP,6.6 KV, 26.2KA for 3 sec,Vacuum Circuit Breaker (VCB) (ii) 12-set (3 Nos in each set) dual Core CT: CTR:300/1A+1A, CORE 1: For metering, class-1.0, 15VA, CORE 2: For Protection, Class-5P10, 15VA (iii)12-set cable termination box suitable for 3C x 185 sqmm.6.6KV, XLPE /A, AL cable (iv) 1 set: TNC switch & Local/Remote selection switch. (v)12-set 0-65/390A AC flush mounting digital ammeter with selector switch. (vi)12-set high speed master trip relay. (vii)12-set-ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (viii)12-set - Aux. contactors with necessary fittings (ix)Annunciator unit. 8W (x)Hooter (xi)12-set R/Y/B phase indication lamps (xii)12-set Temperature Scanner (Masibus make) (xiii)12-set MICOM P225 brand relay for motor protection</p>	1.000	No		0.00	INR Zero Only
23	<p>LT PANEL AT PUMP HOUSE Supply, delivery, storing at site,erection, testing & commissioning of 415V (35MVA) TPN floor mounting free standing LTpanel made of 14SWG CRCA sheet steel extensible on either side totally enclosed,dust and vermin proof, self supported,free standing unit with base channel,multi tier, compartmentalised cubicle,front access type construction with details of feeders as given below .LT panel shall be suitable for 500/415VAC 50HZ,3 phase and neutral system.Panels shall be treated with seven tanks process before painting with two coats of epoxy paint over two coats of epoxy primer all of approved shade complete with front operated incomingandoutgoing switchgears,cablealleys,provision for cable entries from top and bottom, necessary meters, internal wiring with1.1KV,copperwire (2.5 sq.mm) protection HRC fuse etc terminal blocks, selector switches, inter connection with insulated(1.1KVgrade) colour coded copper conductor cable,gland plates, earth bus of copper, lifting bolts, level inscriptions, earth connections etc and supply of all necessary accessories all complete and mending good the damages as required. Make-Siemens/L&T/ABB/CGL/Schneider Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same.</p>					

23.1	<p>(A) Incomer</p> <p>(i) 2-Nos 800A FP,500V, 50 KA,Air Circuit Breaker (ACB) Drwaout type</p> <p>(ii)2-set (3 Nos in each set) 15VA,800/1A,CL-1 for metering CTs</p> <p>(iii)2-set cable termination box suitable for 3 nosx 3 1/2-C x 300 sqmm.1.1KV, XLPE /A, AL cable</p> <p>(iv)2-set 0-800A AC flush mounting digital ammeter with selector switch.</p> <p>(v) 2-set 0-500V flush mounted digital voltmeter with selector switch</p> <p>(vi) 2-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons</p> <p>(vii) 2-set R/Y/B phase indication lamps</p> <p>(viii) 2-set TRIP/NEUTRAL/CLOSE selector switch</p> <p>(ix) Earth bus-bar and all other accessories complete</p> <p>(x) Annunciator unit. 8W</p> <p>(xi) 2-set Multi Function Meter</p> <p>(B) Bus-Bars</p> <p>2-Set TPN, 500/415V, 800A, 50Hz, 50 MVA continuous rated copper bus-bar with insulating sleeves</p>					
23.2	<p>(C) Bus Coupler</p> <p>(i) 1-No 800A FP,500V, 500 KA,Air Circuit Breaker (ACB)</p> <p>(ii)1-set (3 Nos) 15VA, 800/1A,CL-1 for metering CTs</p> <p>(iii)1-set 0-800/1600A AC flush mounting digital ammeter with selector switch.</p> <p>(iv) 1-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons</p> <p>(v) 1-set R/Y/B phase indication lamps</p> <p>(vi) 1-set TRIP/NEUTRAL/CLOSE selector switch</p> <p>(vii) Earth bus-bar and all other accessories complete</p> <p>(viii) Annunciator unit. 8W</p> <p>(D) Outgoing</p> <p>(i) 3 Nos- 400A FP 500/415V MCCB with breaking capacity of 50 KA including 0-400A CL-1 digital ammeter with 400/5A class-1 CTs and selector switch and ON/OFF/TRIP indication light complete (2 nos for for cooling/lubricating pump panel, 1 no spares).</p> <p>(ii) 9 Nos- 63A FP 500/415V MCCB with breaking capacity of 50 KA including 0-63A CL-1 digital ammeter with 60/5A class-1 CTs and selector switch and ON/OFF/TRIP indication light complete (2 nos for LDB, 2 nos for PDB, 1 nos for battery charger, 1 no for street light,1 no for yard lighting, 2 nos spares).</p> <p>(iii) 7Nos- 100A FP 500/415V MCCB with breaking capacity of 50 KA including 0-100A CL-1 digital ammeter with 100/5A class-1 CTs and selector switch and ON/OFF/TRIP indication light complete (2 no for EOT crane, 4 nos for monorail crane, 1 no spare).</p> <p>(E) Earth bus-bar</p> <p>Continuous earth bus bar of 50 x 6mm G.I. flat running continuous through out the length of the switch board with earthing terminals.</p>	1.000	No		0.00	INR Zero Only
24	Local / Remote Push Button Station including all accessories and wiring complete with control cable for 22 nos, 6.6 KV, 450 KW, motors and 10 nos 6.6 KV, 250 KW motors.	32.000	Set		0.00	INR Zero Only
25	CAPACITOR BANK					
25.01	<p>Supply, delivery and storing at site, erection, testing & commissioning of capacitor bank of 200KVAR or suitable rating to reach improve power factor near to 1, delta connected double dielectric heavy duty Metalised poly propylene -Heavy duty (MPP-H) power factor correction capacitor 6.6KV AC,3ph,50Hz, as per IS:13340 & IEC specification to be connected directly in parallel with the 450 KW motor terminals. Including supply and installation of Reactor/ Inductor coil against each module.Including supply of 16G well ventilated,Powder coated MS enclosure of appropriate size and duly painted .</p> <p>Note:Capacitor should be able to with stand a 110% of rated voltage and 130% of rated current. Make- EPCOS/Unistar/CGL/L&T(Madhab).</p>	22.000	Nos		0.00	INR Zero Only

25.02	Supply, delivery and storing at site, erection, testing & commissioning of capacitor bank of 100KVAR or suitable rating to reach improve power factor near to 1, delta connected double dielectric heavy duty Metalised poly propylene -Heavy duty (MPP-H) power factor correction capacitor 6.6KV AC,3ph,50Hz, as per IS:13340 & IEC specification to be connected directly in parallel with the 250 KW motor terminals. Including supply and installation of Reactor/ Inductor coil against each module.Including supply of 16G well ventilated,Powder coated MS enclosure of appropriate size and duly painted . Note:Capacitor should be able to with stand a 110% of rated voltage and 130% of rated current. Make- EPCOS/Unistar/L&T(Madhab).	10.000	Nos		0.00	INR Zero Only
25.03	Supply, delivery and storing at site, erection, testing & commissioning of capacitor bank of 100KVAR or suitable rating to reach improve power factor near to 1, delta connected double dielectric heavy duty Metalised poly propylene -Heavy duty (MPP-H) power factor correction capacitor 440V AC,3ph,50Hz, as per IS:13340 & IEC specification to be connected directly in parallel with LT Panel Including supply and installation of Reactor/ Inductor coil against each module.Including supply of 16G well ventilated,Powder coated MS enclosure of appropriate size and duly painted Note:Capacitor should be able to with stand a 110% of rated voltage and 130% of rated current. Make- EPCOS/Unistar/L&T(Madhab).	1.000	No		0.00	INR Zero Only
26	COOLING/LUBRICATION PUMP & SUBMERSIBLE PUMP STARTER. Supply and fitting fixing of wall mounted cubicle panel board fabricated with 2mm MS CRC sheet complete with powder coated paint, copper busbar with all accessories. INCOMER: 1 Nos-400A FP 500/415V, AC 50KA breaking capacity MCCB microprocessor based with all other accessories complete including 415V, 400A /1A Cts with ammeter and ASS , 0-500V voltmeter with VSs, indicating lamps, control fuses etc. OUTGOING: (i) 5 sets 30 HP cooling/lubricating pump star-delta starter unit complete with necessary FP MCCB(50KA), contractors, O/L relay, control fuses, push button indicating lamp, ON/OFF indication etc. (ii) 4 sets 10 HP cooling/lubricating pump star-delta starter unit complete with necessary FP MCCB(50KA), contractors, O/L relay, control fuses, push button indicating lamp, ON/OFF indication etc.(iii) 1 no 32A DP MCB 10KA.	2.000	Set		0.00	INR Zero Only
27	BATTERIES & BATTERY CHARGER WITH D.C.D.B Supply, installation, testing and commissioning with supervision of 110V,200Ah Exide Plante Led Acid battery cosisting of 55 nos 2V each (YKP-17) plante cell in transparent SAN container complete with plante positive plate, pasted negative plate, vent plugs, insulator, lead planted copper connectors, nuts, washers etc dry and uncharged. The battery bank will be supplied along with non seismic M.S steel strand two coats of polyurethane lacquer which acts as a strong resistance to sulphuric acid corrosion with cell nos sticker, suitable stand insulator, inter row and inter tier connector and required sulphuric acid sufficient for first filling of the above battery (including approximately 10 % spare) in non retumable polythelene jerrycans suitable pached as in the technical specification along with Chloride power system & solution Ltd make 110V automatic float cum boost charger along with integrated DCDB as in the technical specification.	4.000	Set		0.00	INR Zero Only
28	HT CABLING					
28.01	Supplying and laying of 11 KV(E) grade 3 core 300 Sq. mm XLPE armoured Aluminum cable, Make: NICCO/GLOSTER/UNIVERSAL HT cables in excavated cable trench, erected cable tray,pipes and masonary trench, through under ground as and where necessary as per I E Rule/PWD Schedule.	5000.000	RM		0.00	INR Zero Only
28.02	Supply and Jointing of Underground cable 11 kV (E), 3-phase indoor type heat shrinkable HT Cable termination kit along with all accessories including cost of all material, T&P etc	192.000	Nos		0.00	INR Zero Only

29	LT CABLING Supplying and laying of following sizes of 1.1KV grade XLPE insulated armored aluminum cable, Make: Gloster/Nicco/Universal in excavated trenches ,erected cable tray,pipes and masonry trench, through under ground etc. as and where required as follows:					
29.01	3 ½ C 300 Sqmm XLPE/A Al Cable.	1000.000	RM		0.00	INR Zero Only
29.02	3 ½ C 185 Sqmm XLPE/A AL Cable.	200.000	RM		0.00	INR Zero Only
29.03	3 ½ C 70 Sqmm XLPE/A AL Cable.	350.000	RM		0.00	INR Zero Only
29.04	4C X 16 Sqmm XLPE/A AL Cable.	1800.000	RM		0.00	INR Zero Only
29.05	2C X 10 Sqmm XLPE/A AL Cable.	1000.000	RM		0.00	INR Zero Only
30	CONTROL CABLE Supplying and laying of following sizes of 1.1KV grade XLPE insulated armored COPPER cable, Make: Gloster/Nicco/Universal in erected cable tray,pipes etc. as and where required as follows:					
30.01	7C X 2.5 Sqmm XLPE/A Cu Cable.	500.000	RM		0.00	INR Zero Only
30.02	14C X 2.5 Sqmm XLPE/A Cu Cable.	2000.000	RM		0.00	INR Zero Only
30.03	5C X 2.5 Sqmm XLPE/A Cu Cable.	1500.000	RM		0.00	INR Zero Only
30.04	3C X 2.5 Sqmm XLPE/A Cu Cable.	1600.000	RM		0.00	INR Zero Only
31	Supply of following gauge GI earth wire and laying in proper places as per specification.					
31.01	6 G	200.000	RM		0.00	INR Zero Only
31.02	8 G	200.000	RM		0.00	INR Zero Only
31.03	12 G	200.000	RM		0.00	INR Zero Only
32	Supplying and fixing compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of XLPE/PVC armoured cables as below					
32.01	3 ½ C 300 Sqmm XLPE/A Al Cable.	24.000	Nos		0.00	INR Zero Only
32.02	3 ½ C 185 Sqmm XLPE/A AL Cable.	4.000	Nos		0.00	INR Zero Only
32.03	3 ½ C 70 Sqmm XLPE/A AL Cable.	10.000	Nos		0.00	INR Zero Only
32.04	4C X 16 Sqmm XLPE/A AL Cable.	140.000	Nos		0.00	INR Zero Only
32.05	2C X 10 Sqmm XLPE/A AL Cable.	112.000	Nos		0.00	INR Zero Only
33	Finishing the end of following XLPE/PVC armoured cables by crimping method incl. supplying and fixing solderless socket (Dowels make), tapes, anticorrosive paste & jointing materials :					
33.01	3 ½ C 300 Sqmm XLPE/A Al Cable.	24.000	Set		0.00	INR Zero Only
33.02	3 ½ C 185 Sqmm XLPE/A AL Cable.	4.000	Set		0.00	INR Zero Only
33.03	3 ½ C 70 Sqmm XLPE/A AL Cable.	10.000	Set		0.00	INR Zero Only
33.04	4C X 16 Sqmm XLPE/A AL Cable.	140.000	Set		0.00	INR Zero Only
33.05	2C X 10 Sqmm XLPE/A AL Cable.	112.000	Set		0.00	INR Zero Only
34	EARTHING STATION AND ACCESSORIES					
34.01	Earthing with 80 mm dia GI pipe (TATA-Medium) X 3.0 Mtrs long and 1 No 65 mm X 8 mm galvanized (Hot Dip) steel strip (4 Mtrs long) 20 mm dia X 125 mm long galvanized bolt, double nuts, double washers including finishing both ends by making holes etc and S&F 80 mm dia GI pipe (ISI-Medium) protection (3 Mts long) to be filled with bitumen partly under the ground level and partly above ground level to an average depth of 3.65	62.000	Nos		0.00	INR Zero Only

34.02	Earthing with 50 mm dia GI pipe 3.64 mm thick x 3.04 Mts. long and 1 x 4 SWG GI (Hot Dip) wire (4 Mts. long), 13 mm dia x 80 mm long GI bolts, double nuts, double washers incl. S & F 15 mm dia GI pipe protection (1 Mts. long) to be filled with bitumen partly under the ground level and partly above ground level driven to an average depth of 3.65 Mts. below the ground level as below: (a) By ISI-Medium GI pipe	30.000	Nos		0.00	INR Zero Only
34.03	Extra for connecting the neutral of Transformer/Earth busbar to earth electrode including S & F Galvanized (Hot Dip) Steel strip 65 mm x 8 mm on wall/floor with GI saddles & insulating the same by one layer of PVC strip over one layer of ampere tape	1200.000	Mtr		0.00	INR Zero Only
34.04	Extra for connecting the equipments to earth electrode including S & F 50 mm x 6 mm Galvanized (Hot Dip) steel strip on wall/floor with GI saddles & insulating the same by one layer of PVC strip over one layer of ampere tape.	200.000	Mtr		0.00	INR Zero Only
34.05	Connecting the equipments body to earth busbar including S & F 25 mm x 6 mm galvanised (Hot Dip) MS flat on wall/floor with GI saddles as required and connection to equipments incl. drilling holes, with bolts, nuts, washers etc.	100.000	Mtr		0.00	INR Zero Only
34.06	Supplying and fixing of 5.0 kg capacity fire extinguishers (Dry chemical type) to be fitted in wall with suitable bracket including cutting, chipping and mending good the damages.	20.000	Nos		0.00	INR Zero Only
34.07	Supplying and fixing 9 lts. Capacity MS fire bucket coloured red.	20.000	Nos		0.00	INR Zero Only
34.08	Supplying and fixing of shock treatment chart duly framed with glass on wall with necessary screws.	10.000	Nos		0.00	INR Zero Only
34.09	Supplying and fixing of 250 mm x 250 mm x 2 mm thick danger boards with screws.	20.000	Nos		0.00	INR Zero Only
34.1	Supplying and fixing of 2000 x 1000 x 12 mm thick rubber insulating mat, tested up to 33 KV of approved make.	40.000	Nos		0.00	INR Zero Only
34.11	Supplying and fixing of First Aid Box with all items as required by rule on MS Bracket including mending good the damages.	10.000	Nos		0.00	INR Zero Only
35	INSTALLATION OF LIGHTENING CONDUCTOR					
35.01	Supply and installation of lightning conductor Air-terminals made of 15 mm dia 1500 mm long Class-BG .I pipe (ISI approved) having five prongs of No. 4 SWGG.I. wire at top with 85 mm dia 6 mm thick G.I. base plate at bottom including necessary holes etc. for grouting on the parapet etc in C.C mortar (4:2:1).	30.000	Nos		0.00	INR Zero Only
35.02	Supply and fixing of 25 x 6 mm G.I flat on parapet / roof/ plinth/ surface of wall for lightning conductor as required (for horizontal runs) with 40 mm long G.I staples .	800.000	Mtr		0.00	INR Zero Only
35.03	Supplying and fixing of 25 x 6 mm G.I flat for vertical run with G.I saddles .	200.000	Mtr		0.00	INR Zero Only
35.04	Supply and providing for making soldered joints between conductor/ down pipes/other metallic objects with 25x 6mm G.I flat including supply of jointing materials and painting with two coats bituminous paint	50.000	Mtr		0.00	INR Zero Only
35.05	Supplying and providing testing line joints by 25 x 6mm thick G.I strip 125 mm long grouted on wall having clearance of 6mm from wall for making connection with thimbles at the end of 25 x 6G.I flat and 4-SWGG.I.wire of vertical conductor and conductor from earth electrode complete with S&F thimbles, G.I bolts, nuts, check nuts, spring washers etc required	20.000	Nos		0.00	INR Zero Only
35.06	Cutting cornices /steps etc including cutting recess in building setc and supply and fixing of 15 mm bore (class-B) G.I.pipe protection as below and making god damages to the building worksLength up to 0.5 Mtr	20.000	Nos		0.00	INR Zero Only
35.07	Earth pits as per IS-3043 and connection as per specification of Contract using 50 mm dia G.I. pipe Electrode.	30.000	Nos		0.00	INR Zero Only
36	INTERNAL ELECTRICAL DISTRIBUTION WIRING					

36.01	Supplying and installation off 500V 8 way TPN MCB double door type Distribution board with incoming isolator and outgoing MCBs including separate TPN copper busbars,earth busbar setc.suitable for single and multiple pole MCBs complete with all inter connection in manufacturers MS (IP 44) enclosure suitable for flushed fitted in wall,danger board and all other accessories including supplying of all accessories, earthing, painting etc.and comprising the following: Note: MCBs shall be 10 KA short circuit rating (min). Make- Siemence/Legrand/ Havells. 8 way -TPN Distribution Board 1No - Incoming 125A 4 Pole MCCB with spreader links 9 Nos - 32 A SP MCBs 12 Nos.-16 A SP MCBs Complete set as stated above	4.000	Nos		0.00	INR Zero Only
36.02	Supplying and installation of 250 V SPN MCB double door type Distribution board with incoming isolator and outgoing MCBs including separateTPN copper bus bars earth bus bars etc. suitable for single pole MCBs complete with all inter connection in manufacturers MS (IP44) enclosure suitable for flushed fitted in wall,danger board and all other accessories including supplying of all accessories earthing and painting etc. and comprising the following: Note: MCBs shall be 10 KA short circuit rating (min), Make-Simence/Legrand/ Havells. 10-way SPN Distribution Board with 1No.- incoming 40A DP, 10KA, MCB 5 Nos.-16 A SP MCBs 5 Nos.-6 A SP MCBs Complete set as stated above	20.000	Nos		0.00	INR Zero Only
36.03	Supply of junction box of size 150 X 150 X 50 mm made from 1.6 mm thick MS sheet with terminal.	50.000	Nos		0.00	INR Zero Only
36.04	Distribution wiring in 2 x 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make), with 1x22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire for ECC, to light/fan/call bell points with Piano Key type switch fixed on MS CRC sheet metal (16 SWG) switch board cum JB on wall complete with 2 no. suitable size "Ph & N" copper bar incl. bakelite/Perspex (wall matching color) top cover 3 mm thick and incl. 175mmx100mmx65mm inspection box, making earthing attachment, painting the MS box and mending good the damages to original finish. Average run 10 mtr	250.000	Point		0.00	INR Zero Only
36.05	Distribution wiring in 1.1 KV grade 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make), with 1.1 KV grade 1 x 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire as ECC, to 5A 3 pin flush type plug socket & Piano Key type switch fixed on MS CRC sheet metal (16 SWG) switch board cum JB on wall incl. bakelite/Perspex (wall matching color) top cover 3 mm thick and incl. painting the MS box and mending good the damages to original finish. Average run 1.5 mtr	60.000	Point		0.00	INR Zero Only
36.06	Supply & Fixing 240 V, 6A, plug socket with separate 6 A Piano key type switch (Brand approved by EIC) on sheet metal switch board embedded in wall incl. S & F 150x100x65mm MS (16SWG) switch board and bakelite/perspex top cover of 3mm thick by Brass screws after making housing for switch by cutting bakelite/perspex cover and making necessary connections as required.	60.000	Nos		0.00	INR Zero Only
36.07	Supplying & Fixing Industrial Plug & Socket board with 240 V, 20A, SPN & Earth Metal Industrial Plug socket & 20A Industrial top incl. S&F 20 A SP MCB breaking capcity 10kA	60.000	Nos		0.00	INR Zero Only

37	Distribution wiring in 1.1 KV single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make) incl. necy. fittings as required					
37.01	2 x 22/0.3 (1.5 sqmm) + 1 x 22/0.3 (1.5 sqmm) ECC	200.000	Mtr		0.00	INR Zero Only
37.02	2 x 36/0.3 (2.5 sqmm) + 1 x 22/0.3 (1.5 sqmm) ECC	800.000	Mtr		0.00	INR Zero Only
37.03	2 x 56/0.3 (4 sqmm) + 1 x 36/0.3 (2.5 sqmm) ECC	800.000	Mtr		0.00	INR Zero Only
38	LUMINARIES/ACCESSORIES					
38.01	Supplying and Fixing following Indoor Industrial High bay luminaires on top of masonry structure by 3 Nos. 10 mm dia. x 87 mm long rag bolts, nuts & double washers complete either 37 mm x 10 mm MS flat support/or by other means as required. (a) BY325P LED100S CW PSE GR FG WB PB, Make: Philips.	32.000	Nos		0.00	INR Zero Only
38.02	Supplying & Fixing only 4'(ft) LED light BN 108C LED 20S PSU CDL, WH, Philips make or equivalent) fitting complete with all accessories directly on wall/ceiling by screws etc.	120.000	Nos		0.00	INR Zero Only
39	Supplying and Fixing following outdoor luminaires or MV light fitting complete with all accessories to be fixed /projected from the wall of the building incl. making holes/providing clamping arrangement & necy. GI reducer as required. S&F 40 mm GI pipe (ISI-Medium) quality 1.5 mts. average length having suitable bend S&F necy. length of 1.5 sq.mm PVC insulated single core stranded annealed copper wire and making connections as required and mending good damages to wall incl. painting etc.					
39.01	Type-BRP409 LED 065CW HEMRFGSI PSU GR, Philips make or equivalent.	30.000	Nos		0.00	INR Zero Only
39.02	Type-BVP410 LED 210 CW HE NB FG S3 XT, Philips make or equivalent.	22.000	Nos		0.00	INR Zero Only
40	Supplying and Fixing GI water proof looping cable box having hinged GI Top Cover having 4 mm thick with rubber gasket lining, railway type mechanical locking arrangement, earthing. terminal with lug etc. of the following sizes as indicated below, Comprising of one 250 V, 15 A Kit-Kat fuse unit, one NL on porcelain insulator etc. and housing the same in pole muffing incl. addition and alteration to the existing CC muffing (6:3:1) after dismantling the damaged looping cable box etc. where necy. incl. painting. (a) 200 x 150 x 100mm	52.000	Nos		0.00	INR Zero Only
41	Supply and fixing of MS fan hook box of dimension 200 mm (dia) x 50 mm (depth) with m rod of 12mm dia and 300mm length properly curved to suspend ceiling fan form RC ceiling as per specification and direction of engineer. [LS]	30.000	Nos		0.00	INR Zero Only
42	Supply and fixing of 230/250V,50 cycles,AC1400 mm sweep ceiling fan of approved shade complete with down rod,canopies,blades, rubber bush, forks, locking pins, and regulator etc.all complete. Make- Crompton/ Havells/ Bajaj/ Usha.	30.000	Nos		0.00	INR Zero Only
43	Supplying and fixing of 1500 RPM (approx.) 230 volt AC ring mounted,sound less,centrifugal through exhaust fan of following sweep including supply of louver guard etc.all complete. 450 mm dia. Make- EPC/ Crompton/ Havells.	48.000	Nos		0.00	INR Zero Only
44	Supplying and erection of single steel tubelar pole of length as given below with / without sole plate & cap etc. in CC foundation (proportion and dimension indicated below), having 600 x 600 x 150 mm thick CC (4:2:1)base block below sole plate / pole with hard jhama metal including CC (6:3:1)muffing 0.30 mts. dia and 0.30 mts. above ground level including 3 mm thick neat cemented finish and GI earth bolt after making drilled holes etc. on pole & carriage of pole upto 1.6 Km from store to work-site including filling up the excavated earth pit with shifted soil and ramming properly (a) UPto 9.0 mtr. Size 0.6 x0.6 x1.70 mts.	30.000	Nos		0.00	INR Zero Only

45	Extra on item no 32.2 above, for providing CC (6:3:1) base block (around the pole) dimension 0.6 x 0.6 x 0.76mt. Above ground level, neatly cemented finish (3 mm thick) at the base of pole (in lieu of CC muffing) suitable for alkathene / polythene pipe entry as directed for street light wiring incl. S & F 250 x 250 x 100 mm GI loop box, 16 SWG & incl. drilled hole in pole.	30.000	Nos		0.00	INR Zero Only
46	Supplying fitting fixing fabrication of MS ladder tray, hanger, masonary trench cover fabricated with MS angle, chanel, flats etc with painting for cable and electrical accessories.	5000.000	Kg		0.00	INR Zero Only
47	INSTRUMENTATION AND COMMUNICATION SYSTEM Supply, storage, installation, testing and commissioning radar type level indicator/ultrasound type level indicator for continuous level measurement of water and waste water with remote display for pump sump as per tender requirement and specification. (i) Radar sensor for continuous level measurement of water and waste water. (ii) Remote display(Panel mounted, LED, with two relay out put, IP-20)	2.000	Jobs		0.00	INR Zero Only
48	SCADA MONITORING SYSTEM Providing of SCADA system network with all hardware and software of reputed and proven brand to be designed , formulated , integrated , installed , conduct trail run and commissioning and technically suitable for monitoring 32 nos. Pumps/ motor consisting of the following with all redundancy at all stages for the purpose of monitoring intake sump water level and the no. of pump in operation. (a) Monitoring station at pump house and Jalasampad Bhawan, Salt Lake, Kolkata. (b) Networking and communications as required. (c) PLC as required(Minimum 8 nos). (d) RTU (e) Optical fibre cables. (f) Intake water level sensors. (g) Online data monitoring display system at Pump house and Jalasampad Bhawan. (h) GSM/GPRS telemetry with power backup connectivity as redundant communication link for two nos of monitoring system.	1.000	Job		0.00	INR Zero Only
Total in Figures					0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only				