

Rajkot Municipal Corporation

Rajkot - 360 001



**SUPPLY OF SEWAGE ZERO SUCTION SUBMERSIBLE PUMP SETS
WITH ELECTRO/MECH ACCESSORIES WITH 05 YEARS
COMPREHENSIVE OPERATION AND MAINTENANCE AT RAIYA ROAD
AMRAPALI RAILWAY UNDER BRIDGE, RAJKOT**

**2021-22
VOLUME-II
TECHNICAL BID
e-Tender No.: RMC/Amrapali-EM/21-22/01**

Last date for e-tendering are as under	
1. Downloading of e-Tender documents	19.04.2021 to 28.04.2021 up to 18:00 hr
2. Online submission of e - Tender	28.04.2021 up to 18:00 hr
3. Physical submission of EMD, Tender fee and other documents i.e. Experience certificate e, Registration Class Certificate, all required documents etc.	30.04.2021 up to 17:00 hr
4. Verification of submitted documents (EMD, e - Tender fee, documents etc.)	30.04.2021 at 17:00 hr Onwards
5. Opening of online tender tech bid	30.04.2021 at 17:00 hr onwards
6. Opening of Price Bid (If possible)	03.05.2021 at 11:00 hr onwards
7. Bid Validity	120 Day's

For further particulars, visit us on (1) www.rmc.nprocure.com (2) www.rmc.gov.in

**Additional City Engineer
Water works-Central zone
Dhebarbhai Road, Dr, Ambedkar Bhavan
Rajkot Municipal Corporation,
RAJKOT.**

**RAJKOT MUNICIPAL CORPORATION
e-TENDER SHORT NOTICE**

The e-Tenders are invited with two bid system (Technical & Price bid) by Additional City Engineer, Rajkot Municipal Corporation, Central Zone, Dr, Ambedkar Bhavan, Dhebarbhai road Rajkot-360001, from the manufacturers / authorized dealers OR contractors registered in GWSSB / Any State Government / Central Government in appropriate class of Registration, for the work of Supply, Installation, Testing & commissioning (SITC) of machineries with 05 Year Comprehensive Operation and Maintenance for below mention work.

Sr No	Name of work	a) Estimated Amount b) Amount of EMD c) Tender Fee d) Time limit for completion of work e) Registration class
1	Supply, Installation, Testing and Commissioning (SITC) of Storm water Pumping Machinery with allied Electro-Mechanical works with Operation & Comprehensive Maintenance, and Defect Liability Period for 5 Years for Amrapali Underbridge at raiya road.	a) Rs.36,38,350/- b) Rs.36,384/- c) Rs.1,875/- d) 15 Days e) E-1 and above

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- (1)** All bidders must submit tender fee and bid security in person as above either directly deposited in HDFC Bank Account No. 01018640000035 (Rajkot Municipal Corporation) IFSC Code HDFC0000101 or submit at the below mentioned address in form of Demand draft in favour of "Rajkot Municipal Corporation", Rajkot, from any Nationalized Bank or Scheduled bank (except Co-operative Bank) in India. The address proof and identity proof shall have to be submitted along with physical submission of required documents. Technical bid must be submitted by RPAD/Speed post only.

**Office of the Dy Executive Engineer (Mech)
Rajkot Municipal Corporation,
Dr. Ambedkar Bhavan,
Central Zone Office,
Water Works, Room No.6,
Dhebar Road, Near ST bus stand,
Rajkot-360001.**

(2) The pre-qualification requirement is as under:

i) Financial Criteria:

1. An average annual turnover of last seven financial years should not be less than 50% of the tender estimated amount. Working capital should not be less than 25% of the tender amount.
2. Solvency must not be less than Rs.2.00 Lacs.
Registration Class: 'E-1' and above or a pump manufacturer

ii) Experience Criteria:

The bidder should possess following minimum experience:

- A. Bidder should have completed at least One work of similar nature (i.e. SITC of Pumping Machinery with allied Electro-Mechanical works for sewage / water works pumping station) of 60% OR Two works of 50% of the estimated tender amount of either Government / Semi-Government as a main contractor in period of last seven years and should have been successfully commissioned and in operation for at least one year.
 - B. The bidder should further have experience of successful completion of O&M of minimum one sewage/water pumping station out of the "work similar nature" completed by bidder as specified above as (A) and considered by bidder for pre qualification experience criteria for similar nature of works shall be for at least one year.
 - C. Bidder shall be registered in GWSSB / State Government / Central Government in Class 'E-1' and above of Electrical Department or shall be an original pump manufacturer of approved make having experience of similar work as specified above at A.
 - D. Copy of original certificates duly notarized (original notarized copy) in support of above requirements shall be enclosed in hard copy for verification, certified by the respective employer or his authorized representative, not below the rank of an Executive Engineer or equivalent. Original Certificates of the same shall be produced for verification on demand by employer, failing which, will result in to rejection of tender.
 - E. For the purpose of bid evaluation, the owner/owner's representatives if feel necessary to visit a specific or all such pumping stations as mentioned above by the bidder, the bidder shall make necessary arrangements/approvals for the same. Cost for the same shall be borne by the bidder.
 - F. **Note:** Enhancement factor at 10% per year for last Seven years will be applicable to arrive annual turnover and finalize the magnitude of work done in last seven years.
- (3) Commissioner, Rajkot Municipal Corporation reserves the right to accept / reject any or all e-Tender(s) without assigning any reasons thereof.
- (4) The bidder should not have been Black Listed by Government of India/Government of Gujarat or any State Board / Corporations, since inception of the firm/Company. A Declaration in this regard signed & Stamp with duly Notarized, shall have to be submitted along with the tender documents.

- (5) **Certified copy of Registration certificates/Documents as following must be physically submit with authorized sign & stamp on each page of tech bid document.**
1. Registration certificate in Central/State Government.(Elect Dept.)
 2. Registration as Electrical contractor.
 3. Provident Fund registration certificate.
 4. Professional tax registration certificate.
 5. The Chartered Accountant's audited financial report for last seven years for financial strength of the bidder.
 6. Solvency certificate from any Nationalize or Schedule bank (Except co-operative bank)
 7. Experience certificates regarding this work issued by competent authority
 8. Power of Attorney authorizing the person for signing the Tender and give any clarification asked by department.
 9. The agency should not be Black Listed anywhere in India, for which, agency will have to submit fresh Notarized Affidavit.
- (6) The bidder should provide accurate information on any litigation history or arbitration resulting from contracts completed or under execution by him over the last ten years. This should also include such cases, which are in process / progress. A consistent history of awards against the bidder may result in failure of the bid. In case the bidder has not provided such information and has come to the notice of the authority, the tender will be rejected at what so ever stage and in such case all the losses that will arise out of this issue will be recovered from the tenderer / bidder and he will not have any defense for the same.
- (7) Rajkot Municipal Corporation reserve the right (i) to change, alter or to waive any technical or commercial terms, condition and qualification (ii) to reject all the bids or any bid in part or full without assigning any reason whatsoever (iii) for making changes / relaxation in eligibility criteria at any time in the interest of the public. The bidder shall have no cause of action or claim against the Rajkot Municipal Corporation or its Officers / Employee's successor or assignee for rejection of his tender/bid.
- (8) After opening of Technical Bid, the procedure for the pre-qualification shall be adopted and the Price Bid of only successful qualified bidder shall be opened for final evaluation of the contract. The decision of Municipal Commissioner regarding the pre-qualification shall be final and binding to all the bidders.
- (9) The Tender of those bidder(s) who fail to submit the required documents physically within the stipulated date and time will be treated as non-responsive and their Price Bid will not be opened.
- (10) Joint Venture is not allowed.
- (11) The experience of sub-contractor/back to back work shall not be considered.
- (12) Conditional Tenders will be out rightly rejected.
- (13) Right to accept/reject any or all the e-tender(s) without assigning any reason thereof is hereby reserved.

**Additional City Engineer
Rajkot Municipal Corporation**

Introduction

This work is to be carried out for Supply, Installation, Testing and Commissioning (SITC) of Storm water Pumping Machinery with allied Electro-Mechanical works with 5 Years Operation & Comprehensive Maintenance, and Defect Liability Period for 5 Years at Newly constructed at Raiya Road Amrapali Underbridge Storm water Pumping Station at Rajkot. The details of pumping stations are as per following:

Sr. No	Location of Pumping Station	Estimated Cost of Project, In Rs.		
		Capital Cost	O&M Cost 05 Year	Total Amount
1	Amrapali Underbridge, At Raiya Road, Rajkot	23,72,000/-	12,66,350/-	36,38,350/-

The contractor shall have to carry out the work as per tender specifications and good engineering practices. The defect liability period shall be 5 years and contractor shall have to operate and maintain the above pumping stations for 5 years from the date of issue of completion certificate / successful commissioning.

Major civil works is already executed and bidders shall visit site and study the site conditions prior to bidding. Site visit & fully aware with nature of work confirmation letter by bidder must be submitted with technical bid.

-x-x-x-x-x-

:: INFORMATION TO THE TENDERER ::		
1	Tender validity period	120 (one hundred twenty) calendar days
2	Amount of tender security bond (Earnest Money)	Rs.36,384/-
3	Minimum amount of performance bond price	5 (Five) percent of contract price
4	Time of completion	15 (fifteen) days from notice to proceed (including monsoon period)
5	Period of liability for defects	5 (Five) Years after issuance of the SITC certificate
6	Compensation for delay	0.1 (zero point one) percent of the contract value per each day of delay subject to a maximum up to 10 (ten) percent of the contract value or as decided by the Municipal Commissioner.
7	Last date for downloading of e-Tender document	28.04.2021 up to 18:00 hr
8	Last date for online submission of e-Tender	28.04.2021 up to 18:00 hr
9	Remarks	Municipal Commissioner reserves the right to reduce scope of work and entrust to any other agency without assigning any reason.

TENDER DECLARATION FORM

To
Additional City Engineer
Water Works - Central Zone
Rajkot Municipal Corporation.
Rajkot.

Project : Supply, Installation, Testing and Commissioning (SITC) of Storm water Pumping Machinery with allied Electro- Mechanical works with Operation & Comprehensive Maintenance, and Defect Liability Period for 5 Years for **Amrapali Underbridge.**

Ref.:
.....

Dear Sir,

I/We the undersigned have carefully gone through and clearly understood the Tender documents comprising Notice Inviting Tenders, Articles of Agreement, Scope of work, Definition of terms, Instructions to Tenderer, Conditions of Contract, Special Conditions of contract, Appendices, Specifications, Schedule of quantities and drawings furnished by Rajkot Municipal Corporation, Rajkot. I/We have satisfied myself / ourselves as to the location of site, examined drawings.

I/We do hereby offer to execute and complete the whole of the work within the time specified all in accordance with the specifications, designs, drawings and instructions in writing referred to in the said documents and with such material as are provided for, at the respective rates which I/We have quoted in the schedule of quantities or at such other rates as may be fixed under the provisions of these conditions.

In the event of this tender being accepted, I/We agree to enter into an agreement as and when required and execute the contract according to your Form Agreement or in default whereof I/We bound myself / ourselves to forfeit the "Earnest Money Deposit".

I/We understand that if I/We shall enter into an agreement within ten days from the date of receipt of letter of acceptance, you will forfeit the earnest money paid by me/us and take necessary action as deemed fit.

I/We shall enclose a draft, as an "Earnest Money Deposit, for the sum of Rs. 36,384/- the full value of which is to be absolutely forfeited to the Employer should I/We fail to commence the works specified. Otherwise, the said sum shall be retained by the Employer as on account of such 'Security Deposit' as provided in the aforesaid documents.

I/We agree not to employ Sub-contractors other than those that may be approved in accordance with conditions in the aforesaid documents.

I/We understand that you are not bound to accept the lowest or any tender which you may receive.

I/We shall refer all disputes arising out of or relating to the agreement to the arbitration in accordance with conditions of contract.

I/We am/are bound to execute the job if the work order is issued within ____ days from the date of opening of the tender.

I/We agree to pay the Government Income Tax, Sales Tax (Central and State), Sales Tax on construction, VAT, duties and other taxes prevailing from time to time on such items on which the same are leviable and the rates quoted by me / us are inclusive of the same.

Date: _____

Yours faithfully,

(Signature of Contractor with seal)

Address:

CONTRACTOR.....

**Application Form (1) General
Information**

1.	Name of Applicant	
2.	Nationality of Applicant	
3.	Office Address Telegraphic Address Telephone No. Telex No. Fax No. E-mail Address	
4.	Year and location of establishment	
5.	The Applicant is a) An individual b) A proprietary firm c) A firm in partnership d) A limited company or Corp. (if a firm in partnership)	
6.	Attach the organization chart showing the structure of the organization including the names of the Directors and position of officers.	
7.	Number of years of experience a) As a Prime contractor (Contractor shouldering major responsibility) b) As sub-contractor (Specify main contractor)	
8.	For how many years has your organization been in business of similar work under it's present name? what were your fields when your organization was established?	
9.	Were you ever disqualified / considered ineligible for similar works?	
10	Whether any new fields were added to your organization? If, so, give details.	

11.	Were you ever required to suspend execution for period of more than Six months continuously after you started? If so, give the name of project and reasons thereof.	
12.	Whether you ever left the work awarded to you incomplete?(if so, give name of project and reasons for not completing work?	
13.	In how many of your projects penalties were imposed for delays? (Please give details)	
14.	In which field of electrical / mechanical engineering do you claim specialization and interest?	
15.	Give details of your experience in pumping machinery for manufacture and quality control.	
16.	Give details of equipment, if any.	
17.	Give details of your plans for sub-contracting if any, in terms of percentage	

Signatures of the Tenderer with stamp

Name of Company & Seal:

Name:

Date:

Note: This form must be submitted duly filled-in by the Tenderer during physical verifications of all original documents.

Must be filled by Bidder
Material to be supplied of brand/vendor

Sr No	Description	Brand / Vendor	Remark
01	Submersible Pump Set.		
02	Submersible Pump Set starter Panel		
03	Diesel operated Power Generator set		

INSTRUCTIONS TO TENDERER

IT 1. GENERAL

The contract documents may be secured in accordance with the Notice Inviting e-TENDER for the work called. The work shall include supply of materials necessary for SITC / construction of the work with operation & maintenance.

IT 2. INVITATION TO e-TENDER

The Rajkot Municipal Corporation hereinafter referred as the Corporation will receive e-Tenders for the work of as per the specifications and schedule of prices in the e-Tender document. The e-Tenders shall be opened online as specified in the e-Tender notice in the presence of interested Tenderers or their representatives. The Corporation reserves the right to reject the lowest or any other or all e-Tenders or part of it

which in the opinion of the Corporation does not appear to be in its best interest, and the Tenderer shall have no cause of action or claim against the Corporation or its officers, employees, successors or assignees for rejection of his e-Tender.

IT 3. LANGUAGE OF e-TENDER

e-TENDERS shall be submitted in English, and all information in the e-Tender shall also be in English. Information in any other language shall be accompanied by its translation in English. Failure to comply with this may make the e-Tender liable to rejection.

IT 4. QUALIFICATIONS OF TENDERERS

- A. The Tenderers shall abide by the laws of the Union of India and of Gujarat State and legal jurisdiction of the place where the works are located.
- B. The Tenderer shall furnish a written statement of financial and technical parameters with details and documents along with his e-Tender which contains namely as below:
 - i. The Tenderer's experience in the fields relevant to this contract.
 - ii. The Tenderer's financial capacity/resources and standing over at least 7 (Seven) years.
 - iii. The Tenderer's present commitments (Jobs on hand).
 - iv. The Tenderer's capability and qualifications of himself and his regular staff etc.
 - v. Plants and Machinery available with the Tenderer for the work Tendered.

IT 5. e-Tender DOCUMENTS

The e-Tender documents and drawings shall comprehensively be referred to as e-Tender document. The several sections form in the document are the essential parts of the contract and a requirement occurring in one shall be as binding as though occurring in all, they are to be taken as mutually, explanatory and describe and provide for complete works.

IT 6. EXAMINATION BY TENDERERS

- A. At his own expense and prior to submitting his e-Tender, each Tenderer shall (a) examine the Contract Documents, (b) visit the site and determine local conditions which may affect the work including the prevailing wages and other pertinent cost factors, (c) familiarize, himself with all central, state and local laws, ordinance, rules regulations and codes affecting the material supply including the cost of permits and licenses required for the work and (d) correlate his observations, investigations, and determinations with the requirements of the e-Tender Documents, site & subsoil investigation.

- B. The e-Tender is invited on ___% rate and contractor shall have to quote his price on % bases **above or below in the schedule -B./ Price Schedule**. The works shall have to be completed in all respect as stated in the e-Tender document to the satisfaction of the Corporation.
- C. The following comprises in Contract Documents at a price of **non-refundable Tender Fee Rs.1875/-**

e-Tender Document:

Part-I

1. Notice inviting Tenderers.
2. Information to the Tenderer.
3. e-TENDER declaration form
4. Instructions to the Tenderer.
5. Formats
6. General conditions of contract

Part-II

Technical specifications & BOQ

Part-III

- a. Bid Form (With Price)
- b. Preamble to Price schedule
- c. Price Schedule

- D. Copy of the e-Tender Document should be completed, checked in a responsible manner, digitally signed, and submitted. Tender security Bond shall be submitted in person by the stipulate date, which shall form the part of e-Tender.

The e-Tender is required to complete with all the pages in which entries are required to be made by the Tenderer are contained in the e-Tender documents and the Tenderer shall not take out or add to or amend the text of any of the documents except in so far as may be necessary to comply with any addenda issued pursuant to Clause IT. 16 here of.

IT 7. EARNEST MONEY DEPOSIT:

- A. Each Tenderer must submit a receipt of deposit as Tender guarantee towards **Earnest money** amounting to **Rs.36,384/-** in the form of crossed Demand Draft in favor of "Rajkot Municipal Corporation", from any Nationalized Scheduled bank or Scheduled Bank (except Co-operative Bank) in India acceptable to owner payable at Rajkot. The Tender Bond, shall be valid for a period of not less than one hundred and Eighty (180) days from the date the e-Tenders are opened and shall comply with the requirements for Bond as stipulated in the General conditions of contract. The Tender guarantee bond will be held by the owner as a guarantee that the Tenderer, if awarded the contract, will enter into the contract agreement in good faith and furnish the required bonds. Any e-Tender not accompanied by a Tender guarantee in the form of earnest money deposited for the sum stipulated in the e-Tender Document will be summarily rejected.

- B. The Earnest Money Deposit will be refunded to the unsuccessful Tenderers after an award has been finalized.
- C. The Earnest Money Deposit (Tender Guarantee) will be forfeited in the event, the successful Tenderer fails to accept the contract and fails to submit the "Performance Guarantee Bonds to the Owner as stipulated in this e-Tender documents within ten days. (10) days after receipt of notice of award of contract.
- D. The Earnest Money Deposit of the successful Tenderer shall be returned after the performance guarantee bond, as required, is furnished by the contractor.
- E. No interest shall be paid by the owner on any e-Tender guarantee.

IT8. PREPARATION OF e-TENDER DOCUMENTS

Tenderers are required to note the following while preparing the e-Tender Documents:

- A. e-Tender shall be submitted on the e-TENDER form bound here in English. All statements shall be properly filled in. Numbers shall be stated both in words and in figures where so indicated.
- B. All entries or prices and arithmetic shall be checked before submission of the e-TENDERS. If there is discrepancy between the rates quoted in figures and in words, the rates expressed in words shall be considered as binding.
- C. Each e-Tender shall be accompanied by the prescribed e-Tender security bond and other required documents and drawings. All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be stated below their signature.
- D. Variation to the contract Documents requested by the Tenderer may be affixed and duly signed and stamped. Such variations may be approved or refused by the Corporation is not obliged to give reason for his decisions.

IT 9. SUBMISSION OF e-TENDER DOCUMENTS

Tenderers are requested to submit the e-TENDER Documents on following lines.

- A. Volume containing following documents:
 - I. e-TENDER security bond (Earnest Money) & Tender Fees
 - II. Certificates as registered contractor with Government of Gujarat or appropriate authority.
 - III. Tenderer 's financial capability and standing over at least past five years
 - IV. Current Income Tax clearance certificate. (DELETED)
 - V. Tenderer's experience in the field relevant to this contract.
 - VI. A list of the equipment the Tenderer possesses and that which he proposed to acquire and use for the purpose related to the work.
 - VII. Tenderer should submit All the drawings which they have received along with e- Tenders.
 - VIII.(A) **Tender with Joint venture is not allowed.**

The time limit for receipt of e-Tender shall strictly apply in all cases. The Tenderers should therefore ensure that their e-Tender is received by the competent authority **The Rajkot Municipal Corporation** at the required place before expiry of the time limit. No delay on account of any cause for receipt of e-Tender shall be entertained.

The e-Tender must contain the name address and residence and place of business of the person or persons submitting the e-Tender and must be digitally signed.

e-TENDERS by partnership firm must be furnished with the full names and addresses of all partners and be signed by one of the members of the partnership or by a legally authorized representative holding power of attorney followed by signature and designation of the person of person signing.

e-TENDERS by corporations/companies must be signed with the legal name of the Corporation/Companies by the president/or by the secretary or other person or persons legally authorized to bind the Corporation/Company in the matter.

IT 10 TENDER VALIDITY PERIOD

The validity period of the e-Tender submitted for this work shall be of One hundred & twenty (120) calendar days from the date of opening of the e-Tender

and that the Tenderer shall not be allowed to withdraw or modify the e-Tender offer on his own during the validity period. The Tenderer will not be allowed to withdraw the e-Tender or make any modifications or additions in the terms and conditions on his own e-Tender. If this is done then the owner shall, without prejudice to any other right or remedy, be at liberty to reject the e-Tender and forfeit the earnest money deposit in full.

IT 11 GENERAL PERFORMANCE DATA

Tenderers shall present all the information which sought for in the e-Tender document in form of various schedules if given. e-TENDERS may not be considered if left blank or the schedules are not properly filled in.

IT 12 SIGNING OF e-TENDER DOCUMENTS

If the e-Tender is made by an individual it shall be signed with his full name above his current address. If the e-Tender is made by a proprietary firm, it shall be signed by the proprietor above his name and the name of his firm with his current address.

If the e-Tender is made by a firm in partnership, it shall be signed by all the partners of the firm above their full names and current address, or by a partner holding the power of attorney for the firm, in which case a certified copy of the power of attorney shall accompany the e-TENDER. A certified copy of the partnership deed, current addresses of all the partners of the firm shall also accompany the e-Tender.

If the e-Tender is made by a limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney, shall accompany the e-Tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before the contract is awarded.

If the e-TENDER is made by a group of firms, the sponsoring firm shall submit complete information pertaining to each firms in the group and state along with the bid as to which of the firms shall have the responsibility for e-Tendering and for completion of the contract documents and furnish evidence admissible in law in respect of the authority to such firms on behalf of the group of firms for e-Tendering and for completion of contract documents. The full information and satisfactory evidence pertaining to the participation of each member of the group of firms in the e-Tender shall be furnished along with the e-Tender.

All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be stated below their signatures. All the signatures in the e-Tender document shall be dated.

IT 13 WITHDRAWAL OF TENDERS

If, during the tender validity period, the Tenderer withdraws his Tender, Tender security (Earnest Money) shall be forfeited and Tenderer will be debarred for next three years to quote in R.M.C.

IT 14 INTERPRETATIONS OF e-TENDER DOCUMENTS

Tenderers shall carefully examine the e-TENDER Document and fully inform themselves as to all the conditions and matters which may in any way affect the work or the cost thereof. If a Tenderer finds discrepancies, or omission from the specifications or other documents or should be in doubt as to their meaning, he should at once address query to the **ADDITIONAL CITY ENGINEER (WATER WORKS)**, R.M.C. or mail the queries at mail ID: cbmori@rmc.gov.in on or before the date of pre-bid meeting. Any queries received after the date of pre-bid meeting shall not be entertained. The result of interpretation of the e-TENDER will be issued to all Tenderers as addendum.

IT 15 ERRORS AND DISCREPANCIES IN e-TENDERS

In case of conflict between the figures and words in the rates the rate expressed in words shall prevail and apply in such cases.

IT 16 MODIFICATION OF DOCUMENTS

Modification of specifications and extension of the closing date of the e- Tender, if required will be made by an addendum. Each addendum will be made available online to all Tenderers. These shall form a part of e- Tender. The Tenderer shall not add to or amend the text of any of the documents except in so far as may be necessary to comply with any addendum.

ADDENDA

Addenda form part of the Contract Documents, and full consideration shall be given to all Addenda in the preparation of e-Tender. Tenderers shall verify the number of Addenda issued, if any and acknowledge the receipt of all Addenda in the e-TENDER Failure to so acknowledge may cause the e- Tender to be rejected.

- A. The Owner may issue Addenda to advise Tenderers of changed requirements. Such addenda may modify previously issued Addenda.
- B. No addendum may be issued after the time stated in the notice inviting e-Tenders.

IT 17 TAX AND DUTIES ON MATERIALS

All charge on account of excise duties, Central / State, sales tax, work contract tax and other duties etc. on materials obtained for the works from any source shall be borne by the contractors. (P) or 'C' or 'D' form shall not be supplied by the owner. GST included.

IT 18 EVALUATION OF e-TENDERS

While comparing e-Tenders, the Rajkot Municipal Corporation shall consider factors like price offer is workable with the market price, efficiency and reliability of construction method proposed, compliance with the specifications, relative quality, work done in past with Rajkot Municipal Corporation or other Government Organizations, litigation issues etc. Evaluation criteria specifically mentioned in the specification will also be taken into consideration in the

evaluation of e-Tenders.

IT 19 TIME REQUIRED FOR COMPLETION

The completion period mentioned in this schedule is to be reckoned from the date of notice to proceed. Total completion period is as prescribed in tender document, from the date of issue of notice to proceed and contractor should adhere to this completion time.

IT 20 POLICY FOR TENDER UNDER CONSIDERATION

TENDER shall be termed to be under consideration from the opening of the e-Tender until such time any official announcement or award is made.

While e-Tenders are under consideration, Tenderers and their representative or other interested parties are advised to refrain from contacting by any means any corporations personnel or representatives on matters related to the e-Tenders under study. The Corporation's representatives if necessary will obtain clarification on e-Tenders by requesting such information from any or all the Tenderers, either in writing or through personal contact, as may be necessary. The Tenderer will not be permitted to change the substance of his e-Tender after e-Tenders have been opened. This includes any post Tender price revision. Non-compliance with his provision shall make the Tender liable for rejection.

IT 21 PRICES AND PAYMENTS

The Tenderer must understand clearly that the prices quoted are for the total works or the part of the total works quoted for and include all costs due to materials, labour, equipment, supervision, other services, royalties, taxes etc. and to include all extra to cover the cost. No claim for additional payment beyond the prices quoted will be entertained and the Tenderer will not be entitled subsequently to make any claim on any ground.

IT 22 PAYMENT TERMS

The terms of payment are defined in the General Conditions of Contract and Technical specifications. The Corporation shall not under any circumstances relax these terms of payment and will not consider any alternative payment terms. Tenderers should therefore in their own interest note this provision to avoid rejection of their e-Tenders.

IT 23 AWARD

Award of the contract or the rejection or e-TENDERS will be made during the Tender validity period. A separate Schedule-B (Price Schedule) is given. The contractors are requested to quote their price offer **in % below or above on the given price in the schedule-B only.**

- A. After all contract contingencies are satisfied and the Notice of Award is issued, the successful Tenderer shall execute the Contract Agreement within the time stated and shall furnish the Bond as required herein. The contract Agreement shall be executed, in form stipulated by the Owner.
- B. If the Tenderer receiving the Notice of Award fails or refuses to execute the Contract Agreement within the stated time limit or fails or refuses to furnish the Bond as required herein. The Owner may annul his award and declare the e-Tender security forfeited and will take action as deemed fit.
- C. A corporation, partnership firm or other consortium acting as the Tenderer and receiving the award shall furnish evidence of its existence and evidence that the officer signing the contract agreement and Bonds for the corporation, partnership firm or other consortium acting as the Tenderer is duly authorized to do so.

IT 24 SIGNING OF CONTRACT

The successful Tenderer shall be required to execute the contract agreement within 10 days of receipt of intimation to execute the contract, failing which the Corporation will be entitled annul to the award and forfeit the Earnest Money Deposit. The person to sign the contract document shall be person as detailed in Article IT. 12 (signing of e-Tender documents).

IT 25 DISQUALIFICATION

A e-Tender shall be disqualified and will not be taken for consideration if, (a)

The Tender Security Deposit is not deposited in full and in the manner as specified as per Article IT. 7 i.e. Earnest Money Deposit.

- (b) The e-Tender is in a language other than English or does not contain its English Translation in case of other language adopted for e-Tender preparation.
- (c) The e-Tender documents are not signed by an authorized person (as per Article IT. 12 i.e. signing of e-Tender documents).
- (d) The general performance data for qualification is not submitted fully (as per Article IT 11 i.e. General performance Data).
- (e) Tenderer does not agree to payment terms defined as per Article IT.22 i.e. payment terms.

A. A e-Tender may further be disqualified if,

- (a) Price variation is proposed by the Tenderer on any principle other than those provided in the e-TENDER Documents.
- (b) Completion schedule offered is not consistent with the completion schedule defined and specified in e-Tender document.
- (c) The validity of e-Tender is less than that mentioned in Article IT. 10 i.e. e-Tender validity period.
- (d) Any of the page or pages of e-Tender is/are removed or replaced.
- (e) Any condition which effect the cost.

IT 26 PERFORMANCE GUARANTEE (SECURITY DEPOSIT)

As a contract security the Tenderer to whom the award is made shall furnish a performance guarantee (Security deposit) for the amount of **5%** of the contract price to guarantee the faithful performance, completion and maintenance of the works of the contract in accordance with all conditions and terms specified herein and to the satisfaction of the Engineer-in-charge and ensuring the discharge of all obligations arising from the execution of contract in the forms mentioned below:

- a. By a Demand Draft on the Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.
- b. A fixed deposit receipt of any Nationalized Bank or Schedule Bank except Co-operative Bank duly endorsed in favour of the **Rajkot Municipal Corporation, Rajkot.**

The performance guarantee shall be delivered to the Corporation within ten (10) days of the notice of award and at least three (3) days before the contract agreement is signed unless otherwise specified by the Engineer- in-charge.

On due performance and completion of the contract in all respects, **THE PERFORMANCE GUARANTEE WILL BE RETURNED TO THE CONTRACTOR WITHOUT ANY INTEREST AFTER THE DEFECT LIABILITY PERIOD OF 5 (FIVE) YEARS IS OVER.**

IT 27 STAMP DUTY

The successful Tenderer shall have to enter into an agreement on a non-judicial stamp paper of as per the stamp duty act in force as per the form of the agreement, if security deposit is submitted in the form of fixed deposit receipt then the stamp duty will be levied at 4.9% of the amount of security deposit.

The cost of stamp paper and adhesive stamp shall be born by the contractor. If the security deposit is submitted in the form of bank guarantee or demand draft, the stamp duty will be levied as Rs.300/-

IT 28 BRAND NAMES

Specific reference in the specifications to any material by manufacturer's name, or catalogue shall be construed as establishing a standard or quality and performance and not as limiting competition and the Tenderer in such cases, may at his option freely use any other product, provided that it ensures an equal or higher quality than the standard mentioned and meets Corporation approval.

IT 29 NON TRANSFERABLE

e-TENDER documents are not transferable.

IT 30 COST OF e-TENDERING

The owner will not defray expense incurred by Tenderers in e-Tendering.

IT 31 EFFECT OF e-TENDER

The e-Tender for the work shall remain for a period of 120 calendar days from the date of opening of the e-Tenders for this work and that the Tenderer shall not be allowed to withdraw or modify the offer in his own during the period. If any Tenderer withdraws or makes any modification or additions in the terms and conditions of his own e-Tender, then the Corporation shall, without prejudice to any other right or remedy, be at liberty to reject the e-Tender and forfeit the earnest money in full.

IT 32 CHANGE IN QUANTITY

The Corporation reserves the right to waive any information in any e-Tender and to reject one or all e-Tenders without assigning any reasons for such rejection and also to vary the quantities of items or group as specified in the schedule of prices as may be necessary.

IT 33 NEW EQUIPMENT AND MATERIAL

All materials, equipment and spare parts thereof shall be new, unused and originally coming from manufacturer's plant to the Corporation. The rebuilt or overhauled equipment/materials will not be allowed to be used on works.

IT 34 RIGHTS RESERVED

The owner reserves the right to reject any or all e-Tenders, to waive any informality or irregularity in any e-Tender without assigning any reason. The owner further reserves the right to withhold issuance of the notice to proceed, even after execution of the contract agreement. No payment will be made to the successful Tenderer on account of such withholding. The owner is not obliged to give reasons for any such action.

IT 35 ADDITIONAL RIGHTS RESERVED

The Commissioner, Rajkot Municipal Corporation, reserves right to reduce the scope of work & split the e-Tender in two or more parts without assigning any reason even after the awards of contract.

IT 36 MOBILIZATION ADVANCE

No mobilization advance or advance on material / machinery will be given.

IT 37 CONDITIONAL e-TENDERS

The scope of work is clearly mentioned in the e-Tender documents. The contractor shall have to carry out the work in accordance with the details specifications. No condition will be accepted. The conditional e-Tender will liable to be rejected.

IT 38 1% CESS & REGISTRATION (IF APPLICABLE):

Not Applicable for SITC & O&M of this work.

IT 39 PROFESSIONAL TAX

The bidder shall have to pay the Professional Tax for last / current financial year imposed by Government of Gujarat, and also produced Enrollment Certificate for the same.

Signature of Contractor

ADDITIONAL CITY ENGINEER
Rajkot Municipal Corporation

FORMATS

APPENDIX – A

STATEMENT OF FINANCIAL PARAMETERS

1. Annual turnover for last financial seven years

Financial year	2020-21	2019-20	2018-19	2017-18	2016-17	2015-16	2014-15	Average of last Seven years
Turnover Rs.In Lacs								

2. Working Capital

Working Capital As on date:-31/03/2021	Rs.
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Note: - The bidder shall have to submit the copies of Audited Report of last seven Financial Years. The bidder shall also have to submit the Certificate regarding Turnover and Working Capital from the registered Chartered Accountant

Signature of Contractor

APPENDIX – B

INFORMATION REGARDING FINANCIAL CAPACITY OF THE TENDERER.

Sr. No.	Details	Amount in Lacs	Details to be furnished	Submitted Yes/N	Remarks
1	Earnest Money Deposit				EMD Details as per tender.
2.	Solvency Certificates				Solvency Certificate for all bidder of current financial year from the collector of the district within which here sides or a Banker's Certificate as per tender.
3.	Certificate of Pump Manufacturer / Authorised Dealer of Pump of approved make				Certificate of Pump Manufacturer / Authorized Dealer of Pump of approved make shall be attached. In case of authorization, the Bidder should be Authorized dealer for current year and has to submit back up guarantee from the Pump manufacturer for whole contract period and defect liability period of 5 Years.
4.	Annual average turnover for last Seven Financial Years				Certificates duly signed and stamped from CA shall be attached with this schedule along with the audited balance sheets for the last Five financial years as per tender.
7.	Data sheet to be furnished as mentioned in Technical bid				Blank Data sheet to be filled in format attached in technical specification and shall be attached with this schedule.
8.	A certified copy of power of attorney				

Note: No Deviation with respect to technical guaranteed parameters and commercial terms shall be acceptable.

Signature of the Tenderer with stamp:
Name:

Company's seal:
Date:

APPENDIX – C

Deleted

APPENDIX – D

INFORMATION REGARDING TECHNICAL PARAMETERS BY THE TENDERER.

Sr. No.	Description	Tender Guaranteed Efficiency without negative tolerance for Subm. CF NC Pump Set		Guaranteed Efficiency without negative tolerance	Make Offered
1	Amrapali rail underbridge Pumping station.	Pump-Motor Set overall Efficiency (Min.) (without energy improvement coating)	960 RPM PUMP		
2			1450 RPM PUMP		

Signatures of the Tenderer with stamp
Name:

Company's seal:
Date:

APPENDIX – E

**DETAILS OF THE WORKS OF SIMILAR TYPE AND MAGNITUDE CARRIED OUT BY
THE TENDERER DURING LAST SEVEN YEARS PERIOD**

Sr. No.	Name of Work	Place and State	Tendered Cost	Date of start	Date of Completion		Principal Features
					Prescribed date of completion	Actual date of completion	
1.							
2.							
3.							
4.							

Note: Copy of original certificates duly notarized (original notarized copy) in support of above requirements shall be enclosed in hard copy for verification, certified by the respective employer or his authorized representative, not below the rank of an Executive Engineer or equivalent. Original Certificates of the same shall be produced for verification on demand by employer, failing which, will result in to rejection of tender. If required separate sheet can be used for more details.

Signatures of the Tenderer with stamp

Name:

Company's seal:

Date:

APPENDIX – F
WORKS FOR WHICH BIDS ALREADY SUBMITTED

Sr. No.	Description of work	Place and State	Estimated Value of works Rs. In Lakhs	Stipulated period of completion	Date when decision is expected	Remarks if any

Signature of Contractor

APPENDIX – G
INFORMATION ON BID CAPACITY (WORK FOR WHICH BIDS HAVE BEEN SUBMITTED
AND WORKS WHICH ARE YET TO BE COMPLETED) AS ON THE DATE OF THIS BID (A)
EXISTING COMMITMENTS AND ON-GOING WORKS

Sr. no.	Description of Work	Place and state	Contract No. & Date	Name and Address of the Employer	Value of Contract Rupees in Lakhs	Stipulated period of completion	Value of works remaining to be completed	Anticipated date of completion.

Signature of Contractor

Note: Correct details of work on hand to be furnished. In case of hiding / not showing of the details of work on hand, contractor shall not be considered technically qualified and their price bid will not be opened.
If required separate sheet can be used for more details.

APPENDIX – H

DETAILS OF TECHNICAL PERSONNEL WITH TENDERER WHO ARE PROPOSED FOR THIS CONTRACT.

Sr. No	Description of Category	Name	Qualification	Professional experience and details of works carried out	Since how long in service with tenderer	Remarks
1.						
2.						
3.						
4.						
5.						

Note: The complete bio-data of each personnel with qualification and experience shall be furnished separately along with this schedule.

Signature of the Tenderer with stamp

Company's seal:

Name:

Date:

APPENDIX – I
DETAILS OF THE EQUIPMENT IN POSSESSION OF THE CONTRACTOR AND
THE EQUIPMENT HE PROPOSES TO BRING TO THE SITE FOR THIS WORK

Sr. No.	Type and Description of the Equipment & Capacity	Age and Approximate Value	Numbers the Tenderer has in possession	Numbers he proposes to bring on to site.
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Tenderer hereby confirms that quantity and type of tools he will employ for execution will not be less than those listed and agree to bring more equipment, if so warranted in the opinion of the Engineer.

Signatures of the Tenderer with stamp

Company's seal:

Name:

Date:

APPENDIX – J

On Rs. 100/- Stamp paper with duly Notarized.

Declaration

I _____ do hereby declare that our firm/Company is not blacklisted and no enquires/cases are pending against us by Govt. of India/Govt. of Gujarat or any State Board/Corporations/Urban Authority, since inception of the firm/Company.

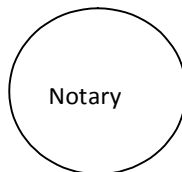
I further undertake that if above declaration is proves to be wrong/incorrect or misleading, our Tender/Contract stands to be cancelled or terminate.

Date:

Place

:

**Signature of
Authorized person
of the
firm/Company**



GENERAL CONDITIONS OF CONTRACT

CONTENT :

GC-01 DEFINITION AND INTERPRETATION
GC-02 LOCATION OF SITE AND ACCESSIBILITY
GC-03 SCOPE OF WORK
GC-04 RULLING LANGUAGE
GC-05 INTERPRETATION OF CONTRACT DOCUMENTS
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GC-11 INSPECTION OF WORK
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GC-20 LIQUIDATE DAMAGES
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GC-92 PAYMENTS OF CLAIMS AND DAMAGES
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GC-95 SAFETY CODE
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GENERAL CONDITIONS OF CONTRACT

GC-01 DEFINITION AND INTERPRETATION

1. In the contract (as here in after defined) the following words and expressions shall, unless repugnant to the subject or context thereof, have the following meanings assigned to them.

1.1 The “**Owner/ Corporation / RMC** shall mean **Rajkot Municipal Corporation** , and shall include its Municipal Commissioner Or other officers authorized by the corporation and also include owners successors and assignees .

1.2 The “**Contractor**” shall mean the person or the persons, firm or company whose tender has been accepted by the owner and includes the contractor’s legal representative, his successors and permitted assigned.

1.2.1 “**Consultant**” shall mean Consulting agency / Officer if any appointed for this work who are the consulting Engineers to Corporation.

1.3 The “**Engineer - In - Charge**” shall mean the concerned Special City Engineer /Additional City Engineer / Executive Engineer to act for and on its behalf for the operation of this contract .

1.5 “**Engineer - In - Charge’s Representative**” shall mean any resident Engineer or Asstt. to the Engineer-in-Charge appointed from time to time by the owner to perform duties set forth in the Tender document whose authority shall be notified in writing to the contract by the Engineer-in - charge.

1.6 “**Tender**”, the offer or proposal of the Bidder submitted in the prescribed form setting forth the prices for the work to be performed, and the details thereof.

1.7 “**Contract Price**” shall mean total money payable to the contractor under contract document.

1.8 “**Addenda**” shall mean the written or graphic notices issued prior to submission of tender which modify or interpret the contract document.

1.9 “**Contract Time**” - The time specified for the completion of work.

1.10 “**Contract**” shall mean agreement between the parties for the execution of works including therein all contract documents.

1.11 “**Contract Document**” shall mean collectively the tender documents, designs, drawings, specifications, agreed variations, if any and such other documents **constituting** the tender and acceptance thereof.

1.12 “**The Sub-Contractor**” shall mean any person , firm or company (other than the Contractor) to whom any part of the work has been entrusted by the Contractor with the written consent of the Engineer-in-charge and the legal representative successors and permitted assignee of such person, firm or company.

1.13 The “**Specifications**” shall mean all directions, the various technical specifications, provisions and requirements attached to the contract which pertain to the method and manner of performing the work, to the quantities and qualities of the work and the materials to be furnished under the contract for the work and any order(s) or instruction(s) there under. It shall also mean the latest

Indian Standard Institute Specification relative to the particular work or part thereof, so far as they are not contrary to the Tender specifications and in absence of any other country applied in Indian as a matter of standard Engineering practice and approved in writing by the Engineer-in-Charge with or without modification.

1.14 The “**Drawings**” shall include maps, plans, tracings, or prints thereof with any modification approved in writing by the **Engineer-in-charge** and such other drawings as may, from time to time, be furnished or approved in writing by the **engineer-in-charge** in connection with the work.

1.15 The “**Work**” shall mean the works to be executed in accordance with the contract or the part thereof as the case may be and shall include extra, additional, altered or substituted works as required for the purpose of the contract. It shall mean the totality of the work by expression or implication envisaged in the contract and shall include all materials, equipments and labour required for or relative or incidental to or in connection with the commencement, performance and completion of any work and / or incorporation in the work.

1.16 The “**Permanent Work**” shall mean works which will be incorporated in and form part of the work to be handed over to the owner by the contractor on completion of the contract.

1.17 The “**Temporary Work**” shall mean all temporary works of every kind required in or about the execution, completion and maintenance of the work.

1.18 “**Site**” shall mean the land and other places, on, under, in or through which the permanent works are to be carried out and any other lands or places provided by the Corporation for the purpose of the contract together with any other places designated in the contract as forming part of the site.

1.19 “**The Construction Equipment**” shall mean all appliances/ equipment of whatever nature required in or for execution, completion or maintenance of works or temporary works (as here in before defined) but does not include materials or other things intended to form or forming part of the permanent work.

1.20 “**Notice in writing or written Notice**” shall mean a notice written, typed or in printed form delivered personally or sent by Registered post to the last known private or business address or Registered Office of the Contractor and shall be deemed to have been received in the ordinary course of post it would have been delivered.

1.21 The “**Alteration / variation order**” shall mean an order given in writing by the Engineer-in-charge to effect additions or deletions from or alterations in the work.

1.22 “**Final Test Certificate**” shall mean the final test certificate issued by the owner within the provisions of the contract.

1.23 The “**Completion Certificate**” shall mean the certificate to be issued by the Engineer-in-Charge when the work has been completed and tested to his satisfaction.

1.24 The “**Final Certificate**” shall mean the final certificate issued by the Engineer-in-Charge after the period of defects liability is over and the work is finally accepted by the owner.

1.25 “**Defects Liability Period**” shall mean the specified period between the issue of completion certificate and the issue of final certificate during which the contractor is responsible for rectifying all defects that may appear in the works.

1.26 **“Approved”** shall mean approved in writing including subsequent confirmation in writing of previous verbal approval and **“Approval”** means approved in writing including as aforesaid.

1.27 **“Letter of Acceptance”** shall mean an intimation by a letter to Bidder that his tender has been accepted in accordance with the provisions contained therein.

1.28 **“Order”** and **“Instruction”** shall respectively mean any written order or instruction given by the Engineer-in-charge within the scope of his powers in terms of the contract.

1.29 **“Running Account Bill”** shall mean a bill for the payment of **“On Account”** money to the contractor during the progress of work on the basis of work done and the supply of non-perishable materials to be incorporated in the work.

1.30 **“Security Deposit”** shall mean the deposit to be held by the owner as security for the due performance of the contractual obligations.

1.31 **“The Appointing Authority”** for the purpose of Arbitration shall be the **The Municipal Commissioner Rajkot Municipal Corporation.**

1.32. **“Retention Money”** shall mean the money retained from R.A. Bills for the due completion of the **“LET WORK”**.

1.33. Unless otherwise specifically stated, the masculine gender shall include the feminine and neuter genders and vice-versa and the singular shall include the plural and vice-versa.

GC.02 LOCATION OF SITE AND ACCESSIBILITY

As may be required under Water Works - West zone or as mentioned in BOQ.

GC.03 SCOPE OF WORK

The scope of work is defined broadly in the General and special conditions of contract and technical specifications. The Contractor shall provide design & Engineering all necessary construction materials, equipment and labour etc. for the execution and maintenance of the work till completion and commissioning. All material that go with the work shall be approved by the Engineer-in-charge prior to procurement and use.

POWER SUPPLY :

The Contractor shall make his own arrangement for Power Supply during erection & installation. If power supply at site is available than contractor may use power for installation & testing work. For running of pumps on duty point Power supply shall be provided by RMC.

LAND FOR CONTRACTOR’S FIELD OFFICE, GODOWN, ETC.

Owner will not be in a position to provide land required for Contractor’s field office, godown, etc. The Contractor shall have to make his own arrangement for the same.

GC.04 RULLING LANGUAGE

The language according to which the contract shall be construed and interpreted shall be English. All entries in the contract documents and all correspondence between the contractor and the **Corporation** or the Engineer-in-charge shall be in English and Gujarati. All dimensions for the materials shall be given in metric units only

GC.05 INTERPRETATION OF CONTRACT DOCUMENTS

1. The provision of the General Conditions of Contract and special conditions of contract shall prevail over those of any other documents of the contract unless specifically provided otherwise, should there be any discrepancy, inconsistency, error or omission in the several documents forming the contract, the matter may be referred to the Engineer-in-charge for his instructions and decision. The Engineer-in-charge's decision in such case shall be final and binding to the contractor.
2. Works shown upon the drawings but not described in the specifications or described in the specifications without showing on the drawings shall be taken as described in the specification and shown on the drawings.
3. The headings and the marginal notes to the clause of these General Conditions of contract or to the specifications or to any other part of tender documents are solely for the purpose of giving a concise indication and not a summary of contents thereof. They shall never be deemed to be part thereof or be used in the interpretation or construction of the contract.
4. Unless otherwise states specifically, in this contract documents the singular shall include the plural and vice-versa wherever the context so requires. Works imparting persons shall include relevant corporations/body of individual/firm of partnership.
5. Notwithstanding the subdivision of the documents into separate sections and volumes every part of each shall be supplementary to and complementary of every other part and shall be read with and into the context so far as it may be practicable to do so.
6. Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the special conditions of contract, then, unless a different intention appears, the provisions of the special conditions of contract shall be deemed to override the provisions of General Condition of Contract to the extent of each repugnancy of variance.
7. The materials, design, and workmen ship shall satisfy the relevant ISS, and codes referred to. If additional requirements are shown in the specifications, the same shall be satisfied over and above ISS and other codes.
8. If the specifications mention that the contractor shall perform certain work or provide certain facilities, it shall mean that the contractor shall do so at his own cost.

9. "CONTRACTOR TO OBTAIN HIS OWN INFORMATION"

The details given in the tender are arrived at after making necessary investigations for framing an estimate. However, when the work is being executed, changes in soil conditions are likely to be met with in view of the formation of soil, strata in Rajkot district.. It is, therefore, desirable that the contractor makes his own investigations or additional investigations as may be required for correctly assessing the cost of different items of work and submit his tender accordingly. Any change in description or quantity of an item shall not vitiate the contract or release the contractor from executing the work comprised in the contract according to the drawings and specification at the tendered rates.

He is deemed to have known the scope, nature and magnitude of the work and the requirements of materials and labor involved and as to whatever work he has to complete in accordance with the contract. The Contractor is expected to visit the site and surroundings to satisfy himself as to the nature of all existing structures, if any, and also as to the nature and the conditions of railways, roads, bridges and culverts, means of transport and communications whether by land, air or water and as to possible interruptions thereto and the access and gross from the site, to have examined and satisfied himself as to the sites for obtaining sand, stones, bricks and other materials, the site for disposal of

surplus materials, the available accommodation and make such inquiries as may be necessary for executing and completing the work, to have local inquiries as to the sub-soil, subsoil water and variation thereof, storms, prevailing winds, climatic conditions and all other similar matters, effecting work. He is expected to be familiar with his liability for payment of Government taxes, customs and excise duty, octroi and other charges etc. in contract with the execution of this contract. The Contractor shall give a certificate for this .

GC.06 CONTRACTOR TO UNDERSTAND HIMSELF FULLY

The contractor by tendering shall be deemed to have satisfied himself, as to all considerations and circumstances affecting the tender price, as to the possibility of executing the works as shown and described in the contract and to have fixed his prices according to his own view on these matters and to have understood that no additional allowances except as otherwise expressly provided, will afterwards be made beyond the contract price. The contractor shall be responsible for any misunderstanding or incorrect information, however, obtained.

GC.07 ERRORS IN SUBMISSIONS

The contractor shall be responsible for any errors or omissions in the particulars supplied by him, whether such particulars have been approved by the Engineer-in-charge or not.

GC.08 SUFFICIENCY OF TENDER

The contractor shall be deemed to have satisfied himself before tendering as to the correctness of the tender rates which rates shall, except as are otherwise provides for, cover all the contractor's liabilities and obligations set forth or implied in the contract for the proper execution of the work for compliance with requirements of Article GC.19 thereof.

GC.09 DISCREPANCIES

The drawings and specifications are to be considered as mutually explanatory of each other, detailed drawings being followed in preference to small scale drawings and figured dimensions in preference to scale and special conditions in preference to General Conditions. The special directions or dimensions given in the specifications shall supersede all else. Should any discrepancies however, appear or should any mis-understanding arise as to the meaning and intent of the said specifications or drawings, or as to the dimensions or the quality of the materials or the due and proper execution of the works, or as to the measurement or quality and valuation of the work executed under this contract or as extra there upon, the same shall be explained by the Engineer-in-charge and his explanation shall subject to the final decision of the Municipal Coporation in case reference be made to it, be binding upon the contractor and the contractor shall execute the work according to such explanation and without addition or to deduction from the contract price and shall also do all such works and things necessary for the proper completion of the works as implied by the drawings and specifications, even though such works and things are no specially shown and described in said specifications. In cases where no particular specifications are given for any article to be used under the contract, the relevant specifications of the Indian Standard Institution shall apply.

GC.10 PERFORMANCE GUARANTEE (SECURITY DEPOSIT)

1. A sum of **5% of the accepted value** of the tender shall be deposited by the Bidder for each Scheme separately (hereinafter called the contractor when tender is accepted) as security deposit with the owner for the faithful performance, completion and maintenance of the works in accordance with the contract documents and to the satisfaction of the Engineer-in-charge and assuring the payment of all obligations arising from the execution of the cotract. This shall be deposited in one of the forms mentioned below :

- a. By a Demand Draft on the Rajkot Branch of any Scheduled 'A' Bank.
- b. A fixed deposit receipt of a Schedule Bank or Government securities duly endorsed in favor of the Rajkot Municipal Coporation ,Rajkot.

c. Bank Guarantee of any Nationalized Bank

2. If the contractor, sub-contractor or their employees shall break, deface or destroy any property belonging to the owner or other agency during the execution of the contract, the same shall be made good by the contractor at his own expense and in default thereof, the Engineer-in-charge may cause the same to be made good by other agencies and recover expense from the contractor (for which the certificate of the Engineer-in-charge shall be final). These expense can be recovered from the security deposit if recovery from other 1sources is not possible. The amount as reduced in security deposit will be made good by deduction from the next R.A. Bill of the Contractor.

GC.11 INSPECTION OF WORK

1. The Engineer-in-Charge shall have full power and authority to inspect the work at any time wherever in progress either on the site or at the contractor's or any other manufacturer's workshop or factories wherever situated and the contractor shall afford to Engineer-in-charge every facility and assistance to carry out such inspection, contractor or his authorised representative shall, at all time during the usual working hours and all times when so notified, remain present to receive orders and instructions.

Orders given to contractor's representative shall be considered to have the same force as if they had been given to the contractor himself. Contractor shall give not less than ten (10) days notice in writing to the Engineer-in-charge before covering up or otherwise placing beyond reach of inspection and measurement any work in order that the same may be inspected and measured. In the event of broach of the above, the same shall be uncovered at contractor's expenses for carrying out such inspection or measurement.

2. No material shall be dispatched from contractor's store on site of work before obtaining approval in writing of the Engineer-in-charge. Contractor shall provide at all times during the progress of work and maintenance period of proper means of access with ladders, gangways, etc. and make necessary arrangement as directed for inspection or measurement of work by Engineer-in-charge.

GC.12 DEFECT LIABILITY

1. Contractor shall guarantee the work for a period of 60 months from the date of issue of completion certificate of SITC. Any damage or defect that may arise or that may remain undiscovered at the time of issue of completion certificate connected in any way with the equipment or materials supplied by him or in the workmanship shall be rectified or replaced by contractor at his own expense as desired by Engineer-in-charge or in default Engineer-in-charge may cause the same to be made good by other agency and deduct expenses of which the certificate of Engineer-in-charge shall be final from any sums that may then or any time thereafter become due to contractor or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof.

2. From the commencement to completion of work contractor shall take full responsibility for the care of the work including all temporary works and in case any damages, occur from any cause whatsoever he shall at his own cost, repair and make good the same so that on completion, work shall be in good order and in conformity, in every respect, with the requirements of contract and as per the instructions of the Engineer-in-charge.

3. If at any time before the work is taken over, the Engineer-in-charge shall -
a) Decide that any work done or materials used by the contractor are defective or not in accordance with the contract or that work or any portion thereof is defective or do not fulfill the requirements of contract (all such materials being herein after called defects in this clause) he shall, as soon as reasonably practicable, give notice to contractor in writing of the said defect specifying particulars of the same then

contractor shall at his own expense and with all speed make good the defects so specified.

b) In case contractor fails to do so, owner may take, at the cost of the contractor, such steps as may in all circumstances be reasonable to make good such defects. The expenditure so incurred by owner will be recovered from the amount due to contractor. The decision of Engineer-in-charge with regard to the amount to be recovered from contractor will be final and binding on the contractor.

GC.13 POWER OF ENGINEER-IN-CHARGE TO GIVE FURTHER INSTRUCTIONS

The Engineer-in-charge shall have the power and authority from time to time and at all times to give further instructions and directions as may appear to him necessary or proper for the guidance of the contractor and the works and efficient execution of the works according to the terms of the specifications, and the contractor shall receive, execute, obey and be bound by the same, according to the true intent and meaning thereof, as fully and effectively as though the same had accompanied or had been mentioned or referred to in the specifications. No work which radically changes the original nature of the contract shall be ordered by the Engineer-in-charge and in the event of any deviation being ordered, which in the opinion of the contractor changes the original nature of the contract, he shall nevertheless carry it out and any disagreement as to the nature of the work and the rate to be paid therefor shall be resolved.

The time of completion of works shall, in the event of any deviations being ordered resulting in additional cost or reduction in cost over the contract sum, be extended or reduced reasonably by the Engineer-in-charge. The Engineer-in-charge's decision in the case shall be final and binding.

GC.14 PROGRAMME

The time allowed for execution of works shall be the essence of the contract. The contract period shall commence from the date of notice of intimation to proceed. The Bidder at the time of submitting his tender shall indicate in the construction schedule his program of execution of work commensurate with the total time specified. The contractor shall provide the Engineer-in-charge a detailed program of time schedule for execution of the works in accordance with the specifications and the completion date. The entire program to be finalized by the contractor, has to conform to the execution period mentioned along with the Bill of quantities in the tender documents. The Engineer in charge upon scrutiny of such submitted program by contractor, shall examine suitability of it to the requirement of contract and suggest modifications, if found necessary.

GC.15 SUBLETTING OF WORK

No part of the contract nor any share of interest thereon shall in any manner or degree be transferred, assigned or sublet by the contractor directly or indirectly to any person, firm or corporation whatsoever except as provided for in the succeeding sub-clause, without the consent in writing of the owner.

GC.16 SUB-CONTRACTS FOR TEMPORARY WORKS, ETC.

The owner may give written consent to sub-contractors for execution of any part of the works at the site, being entered upon the contractor provided each individual contract is submitted to the Engineer in charge before being entered into and is approved by him. List of sub-contractors to be supplied.

Notwithstanding any subletting with such approval as aforesaid and notwithstanding the Engineer-in-charge shall have received of any sub-contractors, the contractor shall be and shall remain solely responsible for the quality and proper and expeditious execution of the works and the performance

of all the conditions of contract in all respects as if such subletting or subcontracting had not taken place and as if such work had been done directly by the contractor.

GC.17 TIME FOR COMPLETION

1. The work covered under this contract shall be commenced from the date the contractor is served with a notice to proceed with the work and shall be completed before the date as mentioned in the time schedule of work. The time is the essence of the contract and unless the same is extended as mentioned in clause G.C. 18 'Extension of Time', the contractor shall pay liquidated damages for the delay.

2. The general time schedule for construction is given in the tender document. Contractor shall prepare a detailed weekly or monthly construction programme in consultation with the Engineer-in-charge soon after the agreement and the work shall be strictly executed accordingly.

The time for construction includes, the time required for testing, rectification, if any, re -testing and completion of the work in all respects to the entire satisfaction of the Engineer-in-charge.

GC.18 EXTENSION OF TIME

Time shall be considered as the essence of the contract. If, however, the failure of the contractor to complete the work as per the stipulated dates referred to above arises from delays on the part of the Corporation in supplying the materials or equipment, it has undertaken to supply under the contract or from delays on the quantity of work to be done under the contract, or force majeure an appropriate extension of time will be given by the Corporation. The contractor shall request for such extension within one month of the cause of such delay and in any case before expiry of the contract period.

GC.19 CONTRACT AGREEMENT

The successful Bidder shall enter into and execute the contract agreement within 10(ten) days of the notice of award, in the form shown in tender documents with such modifications as may be necessary in the opinion of the Corporation. It shall be incumbent on the contractor to pay the stamp duty and the legal charges for the preparation of the contract agreement.

GC.20 LIQUIDATED DAMAGES

If the contractor fails to complete the work or designated part thereof by the stipulated completion date for the work or for that part, he shall pay liquidated damages at half a percent of contract value for each week of delay subject to maximum of 10% of the contract value or as decided by Municipal Commissioner

The contractor shall complete one-sixth quantum of work within one fourth period, four-tenth quantum of work within one-half period and eight-tenth quantum of work within three-fourth period, failing which the contractor shall be liable to pay liquidated damages an amount as specified above or as decided by Municipal Commissioner.

The amount of liquidated damaged shall, however, be subjected to a maximum of 10 percent of the contract value. Delays in excess of one hundred days shall be a cause for termination of the contract and forfeiture of all security for performance.

GC.21 FORFEITURE OF SECURITY DEPOSIT

Whenever any claim against the contractor for the payment of a sum of money out of or under the contract arises, the Corporation shall be entitled to recover such sum by appropriating in part or whole, the security deposit of the contractor. In case the security deposit is insufficient, the balance recoverable shall be deducted from any sum then due or which at any time thereafter may become due to the contractor. The contractor shall pay to the owner on demand any balance remaining due.

GC.22 ACTION OF FORFEITURE OF SECURITY DEPOSIT

In any case in which under any clause or clauses of the contract, the contractor shall have forfeited the whole of his security deposit or have committed a breach of any of the terms contained in this contract, the owner shall have power to adopt any of the following courses as he may deem best suited to his interest.

(a) To rescind the contract (of which rescission notice in writing to the contractor under the hand of the owner shall be conclusive evidence) in which case the security deposit of the contractor shall stand forfeited and be absolutely at the disposal of the security deposit of the contractor shall stand forfeited and be absolutely at the disposal of the owner.

(b) To employ labor and to supply materials to carry out the balance work debiting contractor with the cost of labor employed and the cost of materials supplied for which a certificate of the Engineer-in-charge shall be final and conclusive against the contractor and 10% of costs on above to cover all departmental charges and crediting him with the value of work done at the same rates as if it has been carried out by the contractor under the terms of his contract. The certificate of Engineer-in-charge as to the value of the work done shall be final and conclusive against the contractor.

(c) To measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hand and give it to another contractor to complete, the same. In this case the excess expenditure incurred than what would have been paid to the original contractor, if the whole work had been executed by him, shall be borne and paid by the original contractor and shall be deducted from any money due to him by the owner under the contract or otherwise and for the excess expenditure, the certificate of the Engineer-in-charge shall be final and conclusive.

In the event any of the above courses being adopted by the owner, the contractor shall have no claim for compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any agreements or made any advance on account of or with a view to the execution of the work or the performance of the contract.

In purchase the contractor shall not be entitled to recover or be paid any sum for any work actually performed under this contract unless the Engineer-in-charge will certify in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

In the event of the owner putting in force the powers as stated in a, b, c, above vested in him under the proceeding clause, he may, if he so desires, take possession of all or any tools and plant, materials and stores in or upon the works or the site thereof belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof paying or allowing for the same in account at the contract rates to be certified by the Engineer-in-charge. The Engineer-in-charge may give notice in writing to the contractor or his representative requiring him to remove such tools, plant, materials or stores from the premises within the time specified in the notice and in the event of the contractor failing to comply with any such notice, the Engineer-in-charge may remove them at the Contractor's expenses or sell them by auction or private sale on account of the Contractor and his risks in all respects without any further notice as to the date, time or place of the sale and the certificate of Engineer-in-charge as to the expense of any such removal and the amount of the proceeds and the expenses of any such sale shall be final and conclusive against the contractor:

GC.23 NO COMPENSATION FOR ALTERATION IN OR RESTRICTION IN WORK

If at any time from the commencement of the work, the owner shall for any reasons whatsoever not require the whole work or part thereof as specified in the tender to be carried out, the Engineer-in-charge shall give notice in writing of the fact to the contractor, who shall have no claim to any

payment or compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out. He also shall not have any claim for compensation by reasons of any alterations having been made in original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.

When the contractor is a partnership firm, the prior approval in writing of the owner shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu Undivided Family or business concern, such approval as aforesaid shall, likewise be obtained before contractor enters into an agreement with other parties where under, the reconstituted firm would have the right to carry out the work hereby undertaken by the contractor. In either case if prior approval as aforesaid is not obtained, the contract shall be deemed to have been allotted in contravention of subletting clause hereof and the same action may be taken and the same consequence shall ensure as provided in the subletting clause.

GC.24 IN THE EVENT OF DEATH OF CONTRACTOR

Without prejudice to any of the rights or remedies under the contract, if the contractor dies, the owner shall have the option of terminating the contract without compensation to the contractor.

GC.25 MEMBERS OF THE OWNER NOT INDIVIDUALLY LIABLE

No official or employee of the owner shall in any way be personally bound or liable for the acts or obligation of the owner under the contract, or answerable for any default or omission in the observance or performance of any of the acts, matters or things which are herein contained.

GC.26 OWNER NOT BOUND BY PERSONAL REPRESENTATIONS

The contractor shall not be entitled to any increase on the schedule of rates or any other rights or claims whatsoever by reason of representation, promise or guarantees given or alleged to have been given to him by any person.

GC.27 CONTRACTOR'S OFFICE AT SITE

The contractor shall provide and maintain an office at the site for the accommodation of his agent and staff and such office shall remain open at all reasonable hours to receive information, notices or other communications.

GC.28 CONTRACTOR'S SUBORDINATE STAFF AND THEIR CONDUCT

1. The contractor on award of the work shall name and depute a qualified Engineer, having experience of carrying out work of similar nature, whom equipment, materials, if any, shall be issued and instructions for work given. The contractor shall also provide to the satisfaction of Engineer-in-charge sufficient and qualified staff, competent sub-agents, foreman and loading hands including those specially qualified by previous experience to supervise the type of works comprised in the contract in such manner as will ensure work of the best quality and expeditious working. If, in the opinion of the Engineer-in-charge, additional properly qualified supervision staff is considered necessary, it shall be employed by the contractor without additional charge on account thereof. The contractor shall ensure to the satisfaction of the Engineer-in-charge that sub-contractors, if any, shall provide competent and efficient supervision over the work entrusted to them.

2. If and whenever any of the contractor's or sub-contractor's agents, sub-agents, assistants, foreman or other employees shall, in the opinion of Engineer-in-charge, be guilty of any misconduct or be incompetent or insufficiently qualified or negligent in the performance of their duties or that in the opinion of the owner or Engineer-in-charge, it is undesirable for administrative or any other reason for person or persons to be employed in the works, the contractor if so directed by the Engineer-in-charge, shall at once remove such person or persons from employment thereon. Any persons or persons so removed shall not again be re-employed in connection with the works without the written permission of the Engineer-in-charge. Any person, so removed from the works shall be immediately

replaced at the expense of the contractor by a qualified and competent substitute. Should the contractor be required to repatriate any person removed from the works he shall do so after approval of Engineer-in-charge and shall bear all costs in connection therewith.

3. The contractor shall be responsible for the proper behavior of all the staff, foreman, workmen and others and shall exercise proper control over them and in particular and without prejudice to the said generality, the contractor shall be bound to prohibit and prevent any employee from trespassing or acting in any way detrimental or prejudicial to the interest of the community or of the properties or occupiers of land and properties in the neighborhood and in the event of such employees so trespassing, the contractor shall be responsible therefore and relieve the owner of all consequent claims, actions for damages or injury or any other grounds whatsoever. The decision of the Engineer-in-charge upon any matter arising under this claims shall be final.

4. If and when required by the owner, the contractor's personnel entering upon the owner's premises shall be properly identified by badges of a type acceptable to the owner which must be worn at all times on owner's premises.

GC.29 TERMINATION OF SUBCONTRACT BY OWNER

If any subcontractor engaged upon the works at the site execute any work which in the opinion of Engineer-in-charge is not in accordance with the contract documents, the owner may by written notice to the contractor request him to terminate such subcontract and the contractor upon the receipt of such notice shall terminate such sub-contracts and the latter shall forthwith leave the works failing which the owner shall have the right to remove such subcontractors from the site.

No action taken by the owner under the above clause shall relieve the contractor of his liabilities under the contract or give rise to any right to compensation, extension of time or otherwise.

GC.30 POWER OF ENTRY

If the contractor shall not commence the work in the manner previously described in the contract documents or if he shall at any time, in the opinion of Engineer-in-charge.

- 1) Fail to carry out works in conformity with the contract documents, or
- 2) Fail to carry out the works in accordance with the time schedule or
- 3) Substantially suspend work or the works for a period of seven days without authority from Engineer-in charge or
- 4) Fail to carry out and execute the work to the satisfaction of the Engineer-in-charge, or
- 5) Fail to supply sufficient or suitable construction plant, temporary works, labour, materials or things or
- 6) Commit breach of any other provisions of the contract on his part to be performed or observed or persists in any of the above mentioned breaches of the contract for seven days after notice in writing shall have been given to the contractor by the Engineer-in-charge requiring such breach to be remedied or
- 7) Abandon the work or
- 8) During the continuance of the contract becomes bankrupt, make any arrangement or compromise with his creditors, or permit any execution to be levied or go into liquidation whether compulsory or voluntary not being merely a voluntary liquidation for the purpose of amalgamation or reconstruction then in any such case.

The owner shall have the power to enter upon the works and take possession thereof and of the materials, temporary works, constructional plant and stores therein and to revoke the contractor's license to use the same and to complete the works by his agents, other contractor or workmen, to relate the same upon any terms to such other person, firm or corporation as the owner in his absolute

discretion may think proper to employ, and for the purpose aforesaid to use or authorize the use of any materials, temporary works, constructional plant, and stores as aforesaid with making payment or allowance to the contractor for the said materials other than such as may be certified in writing by the Engineer-in-charge to be reasonable and without making any payment or allowance to the contractor for the use of said temporary works, constructional plant and stock or being liable for any loss or damage thereto. If the owner shall be reason of his taking possession of the works or of the work being got completed by other contractor incurred excess expenditure be deducted from any money which may be due for the work done by the contractor under the contract and not paid for. Any deficiency shall forthwith be made good and paid to the owner by the contractor and the owner shall have power to sell in such manner and for such price as he may think fit all or any of the constructional plant, materials etc. consist constructed by or belonging to and to recoup and retain the said deficiency or any part thereof out of the proceeds of the sale.

GC.31 CONTRACTOR'S RESPONSIBILITY WITH THE OTHER CONTRACTOR AND AGENCIES

Without repugnance to any other condition, it shall be the responsibility of the contractor executing the work, to work in close co-operation and co-ordination with other contractors or their authorized representatives and the contractor will put a joint scheme with the concurrence of other contractors or their authorized representatives showing the arrangements for carrying his portion of the work to the Engineer-in-charge and get the approval. The Engineer-in-charge before approving the joint scheme will call the parties concerned and modify the scheme if required. No claim will be entertained on account of the above. The contractor shall conform in all respects with the provisions of any statutory regulations, ordinances or by laws of any local or duly constituted authorities or public bodies which may be applicable from time to time to works or any temporary works,. The contractors shall keep the owner indemnified against all penalties and liabilities of every kind arising out of non-adherence to such statutes, ordinance, laws, rules, regulations etc.

GC.32 OTHER AGENCIES AT SITE

The contractor shall have to execute the work in such place and condition where other agencies will also be engaged for other works, such as site grading, filling and leveling, electrical and mechanical engineering works, etc. No claim shall be entertained for works being executed in the above circumstances.

GC.33 NOTICES

Any notice under this contract may be served on the contractor or his duly authorized representative at the job site or may be served by registered post direct to the official address of the contractor. Proof of issue of any such notice could be conclusive of the contractor having been duly informed of all contents therein.

GC.34 RIGHTS OF VARIOUS INTERESTS

The owner reserves the right to distribute the work between more than one contractor. Contractor shall co-operate and afford reasonable opportunity to other contractors for access to the works, for the carriage and storage of materials and execution of their works. Whenever the work being done by department of the owner or by other contractor employed by the owner is contingent upon work covered by this contract, the respective rights of the various interests shall be determined by the Engineer-in-charge to secure the completion of various portions of the work in general harmony.

GC.35 PRICE ADJUSTMENTS

No adjustment in price shall be allowed for this work / this tender.

GC.36 TERMS OF PAYMENT

The payment of bill shall be made progressively according to the rules and practices followed by the Corporation. The progressive payment unless otherwise provided in the contract agreement or

subsequently agreed to by the parties shall be made generally monthly on submission of a bill by the contractor in prescribed form of an amount according to the value of the work performed less the price of materials supplied by owner, aggregate of previous progressive payments and as required by clause GC-37 (Retention of money) herein. All such progressive payments shall be regarded as payments by way of advance against final payment.

Payment for the work done by the contractor will be based on the payment schedule at various stages of the work, in accordance with the conditions at clause GC-81.

GC.37 RETENTION MONEY

- 1) pursuant to clause GC-36 (terms of payment) on at money due to the contractor for work done, the Corporation will hold as retention money five (5) percent of the value of work. The retention money will not normally be due for payment until the completion of the entire work & till such period the work has been finally accepted by the Corporation and a completion certificate issued by the Corporation in pursuant to clause-79 (completion certificate).
- 2) Performance Test: As prescribed in the technical specifications, percentage amount of value of work be withheld against performance test of the pumps . The said amount shall be released on giving the satisfactory performance test.

GC.38. PAYMENTS DUE FROM THE CONTRACTOR

All costs, damages or expenses, for which under the contract, contractor is liable to the Corporation, may be deducted by the Corporation from any money due or becoming due to the contractor under the contract or from any other contract with the Corporation or may be recovered by action at law or otherwise from the contractor.

GC.39. CONTINGENT FEE

i) The contractor warrants that he has not employed a person to solicit or secure the contract upon any agreement for a commission, percentage, brokerage contingent fee. Breach of this warranty shall give the Corporation the right to cancel the contract or to take any drastic measure as the Corporation may deem fit. The warranty does not apply to commissions payable by the contractor to establish commercial or selling agent for the purpose of securing business.

ii) No officer, employer or agent of the Corporation shall be admitted to any share or part of this contract or to any benefit that may rise there from.

GC.40 BREACH OF CONTRACT BY CONTRACTOR

If the contractor fails to perform the work under the contract with due diligence or shall refuse or neglect to comply with instructions given to him in writing by the Engineer-in-charge in accordance with the contract, or shall contravene the provisions of the contract, the Corporation may give notice in writing to the contractor to make good such failure, neglect, or contravention. Should the contractor fail to comply with such written notice within 28 (Twenty eight) days of receipt, it shall be lawful for the Corporation .without prejudice to any other rights the Corporation may have under the contract, to terminate the contract for all or part of the works, and make any other arrangements it shall deem necessary to complete the work outstanding under the contract at the time of termination. In this event the performance Bond shall immediately become due and payable to the Board. The value of the work done on the date of termination and not paid for shall be kept as deposit for adjustment of excess expenditure incurred in getting the remaining work completed and the Corporation shall have free use of any works which the contractor may have at the site at the time of termination of the contract.

GC.41 DEFAULT OF CONTRACTOR

i) The Corporation upon written notice of default to the contractor terminate the contract circumstances detailed here under :

- a) If in the opinion of the Corporation, the contractor fails to make completion of works within the time specified in the completion schedule or within the period for which extension has been granted by the Board to the contractor.
 - b) If in the opinion of the Corporation , the contractor fails to comply with any of the other provisions of this contract.
- ii) In the event, the Corporation terminates the contract in whole or in part as provided in Article GC. 50 (termination of the contract) the Corporation reserve the right to purchase upon such terms and in such manner as it may be deem appropriate, plant similar to one which is not supplied by the contractor and the contractor will be liable to the Corporation for any additional costs for such similar plant and/or for liquidated damages for delay until such time as may be required for the final completion of works.
- iii) If this contract is terminated as provided in this paragraph GC.30 (Power of Entry) (1) the Corporation in addition to any other rights provided in this clause, may require the contractor to transfer title and deliver to the Corporation
- (a) Any completed works.
 - (b) Such partially completed information and contract rights as the contractor has specifically produced or acquired for the performance of the contract so terminated.
- iv) In the event, the Corporation does not terminate the contract as provided in the paragraph GC.50 (termination of contract) the contractor shall continue performance of the contract, in which case he shall be liable to the Corporation for liquidated damages for delay until the works are completed and accepted.

GC.42 BANKRUPTCY

If the contractor shall become bankrupt or insolvent or has a receiving order made against him, or compound with his creditors, or being the Corporation commence to be wound up not being a member voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefit of his creditors or any of them, the Corporation shall be at liberty to either (a) terminate the contract forthwith by giving notice in writing to the contractor or to the receiver or liquidate or to any person or organization in whom the contract may become vested and to act in the manner provided in Article GC.41 (Default of Contractor) as though the last mentioned notice had been the notice referred to in such article or (b) to give such receiver, liquidator or other persons in whom the contract may become vested the option of carrying out the contract subject to his providing a satisfactory guarantee for the due and faithful, performance of the contract upto an amount to be agreed. In the event that the Corporation terminates the contract in accordance with this article, the performance bond shall immediately become due and payable on demand to Corporation.

GC.43 OWNERSHIP

Works hand over pursuant to the contract shall become the property of the Corporation from whichever is the earlier of the following times, namely :

- (a) When the works are completed pursuant to the contract.
- (b) When the contractor has been paid any sum to which he may become entitled in respect thereof pursuant to clause GC.36 (terms of payment).

GC.44 DECLARATION AGAINST WAIVER

The condemnation by the Corporation of any breach or breaches by the contractor or an authorized sub-contractor of any of the stipulations and conditions contained in the contract, shall in no way prejudice or affect or be construed as a waiver of the Corporation's rights, powers and remedies under the contract in respect of any breach or breaches.

GC.45 LAWS GOVERNING THE CONTRACT

This contract shall be construed according to and subject to the laws of India and the State of Gujarat and under the jurisdiction of the courts of Gujarat at Rajkot,

GC.46 OVERPAYMENT AND UNDERPAYMENT

Whenever any claim for the payment of a sum to the Corporation arises out of or under this contract against the contractor the same may be deducted by the Board from any sum then due or which at any time thereafter may become due to the contractor under this contract and failing that under any other contract with the Board or from any sum due to the contractor with the Corporation (which may be available with the Corporation), or from his retention money or he shall pay the claim on demand. The Corporation reserves the right to carry out post payment audit and technical examinations of the final bill including all supporting vouchers, abstracts etc. The Corporation further reserves the right to enforce recovery of any payment when detected, notwithstanding the fact that the amount of the final bill may be included by one of the parties as an item of dispute before an Arbitrator appointed under Article GC.49 (arbitration) of this contract and notwithstanding the fact that the amount of the final bill figures in the arbitration award. If as a result of such audit and technical examinations any over payment is discovered in respect of any work done by the contractor or alleged to have been done by him under the contract, it shall be recovered by the Corporation from the contractor as prescribed above. If any under payment is discovered by the Corporation, the amount due to the contractor under this contract, may be adjusted against any amount then due or which may at any time thereafter become due before payment is made to the contractor.

GC.47 SETTLEMENT OF DISPUTES

Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Engineer-in-charge subject to a written appeal by the contractor to the Engineer-in-charge and those decisions shall be final and binding on the parties hereto. Any disputes or differences including those considered as such by only one of the parties arising out of or in connection with this contract shall be to the extent possible settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled as provided in Article GC-48 (Disputes or differences to be referred to) and Article No. GC.49 (Arbitration).

GC. 48 DISPUTES OF DIFFERENCES TO BE REFERRED TO

If at any time, any question, disputes or differences of any kind whatsoever, shall arise between the Engineer-in-charge and the contractor upon or in relation to or in connection with this contract either party may forthwith give to the other, notice in writing of the existence of such question, dispute or difference as to any decision, opinion, instruction, direction, certificate or evaluation of the Engineer-in-charge. The question, dispute or difference shall be settled by the Municipal Commissioner Rajkot Municipal Corporation, who shall state his decision in writing and give notice of same to the Engineer-in-charge and to the contractor. Such decision shall be final and binding upon both parties. The contract and work on contract if not already breached or abandoned shall proceed .

GC - 49 ARBITRATION

In case of any dispute arising during the course of execution the matter should be referred to municipal commissioner who will be sole arbitrator whose decision will be final and binding to the contractor.

GC. 50 TERMINATION OF THE CONTRACT

i) If the contractor finds it impracticable to continue operation owing to force majeure reasons or for any reasons beyond his control and/or the Corporation find it impossible to continue operation, then prompt notification in writing shall be given by the party affected to the other.

ii) If the delay or difficulties so caused cannot be expected to cease or become unavoidable or if operations cannot be resumed within two (2) months then either party shall have the right to terminate the contract upon ten (10) days written notice to the other. In the event of such termination of the contract, payment to the contractor will be made as follows :

- a) The contractor shall be paid for all works approved by the Engineer-in-charge and for any other legitimate expenses due to him.
- b) If the Corporation terminates the contract owing to Force Majeure or due to any cause beyond its control, the contractor shall additionally be paid for any work done during the said two (2) months period including any financial commitment made for the proper performance of the contract and which are not reasonably defrayed by payments under (a) above,
- c) The Corporation shall also release all bonds and guarantees at its disposal except in cases where the total amount of payment made to the contractor exceeds the final amount due to him in which case the contractor shall refund the excess amount within thirty (30) days after the termination and the Board thereafter shall release all bonds and guarantees. Should the contractor fail to refund the amounts received in excess within the said period such amounts shall be deducted from the bonds or guarantees provided.

iii) On termination of the contract for any cause the contractor shall see the orderly suspension and termination of operations, with due consideration to the interests of the Corporation with respect to completion, safeguarding or storing of materials procured for the performance of the contract and the salvage and resale thereof.

GC.51 SPECIAL RISKS

If during the contract, there shall be an out break of war (whether war is declared or not), major epidemic, earthquake or similar occurrence in any part of the world beyond the control of either party to the contract which financially or otherwise materially affects the execution of the contract, the contractor shall unless and until, the contract is terminated under the provisions of this article use his best endeavors to complete the execution of the contract, provided always that the Corporation shall be entitled at any time after the onset of such special risks, to terminate the contract by giving written notice to the contractor and upon such notice being given this contract shall terminate but without prejudice to the rights of either party in respect of any antecedent breach thereof.

The contractor shall not be liable for payment of compensation for delay or for failure to perform the contract for reasons of Force Majeure such as acts of public enemy, acts of Government, fires, floods, cyclones, epidemics, quarantine restrictions, lockouts, strikes, freight embargos and provided that the contractor shall within Ten (10) days from the beginning of such delay notify the Engineer-in-charge in writing, of the cause of delay, the Corporation shall verify the facts and grant such extension as the facts justify.

GC.52 CHANGE IN CONSTITUTION

Where the contractor is a partnership firm, the prior approval in writing of the owner shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of contract.

GC.53 SUB-CONTRACTUAL RELATIONS

All work performed for the contract by a sub-contractor shall be pursuant to an appropriate agreement between the contractor and the sub-contractor which shall contain provision to:

- a. Protect and preserve the rights of the Corporation and the Engineer in charge with respect to the works to be performed under the sub-contract so that the sub-contracting party will not prejudice such rights.
- b. Require that such work be performed in accordance with the requirements of contract documents.
- c. Require under such contract to which the contractor is a party, the submission to the contractor of application for payment and claims for additional costs, extension of time,

- damages for delay or otherwise with respect to the sub-contracted portions of the work in sufficient time, that the contractor may apply for payment and comply in accordance with the contract documents for like claims by the contractor upon the Corporation.
- d. Waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance except such rights as they may have to the proceeds of such insurance held by the Corporation as trustee and,
 - e. Obligate each sub-contractor specifically to consent to the provisions of this Article.

GC.54 PATENTS AND ROYALTIES

- 1) Contractor, if licensed under any patent covering equipment, machinery, materials or composition of matter to be used or supplied or methods and process to be practiced or employed in the performance of this contract agrees to pay all royalties and license fees which may be due with respect thereto. If any equipment, machinery, materials, composition, matters, to be used or supplied or methods practiced or employed in the performance of this contract, is covered by a patent under which contractor is not licensed, then the contractor before supplying/using the equipment, machinery, materials, compositions, methods of process shall obtain such license and pay such royalties and license fees as may be necessary for performance of this contract. In the event contractor fails to pay such royalty or to obtain any such license, any suit for infringement of such patents which is brought against the contractor or the owner as a result of such failure will be defended by the contractor at his own expenses and the contractor will pay any damages and costs awarded in such suit. The contractor shall promptly notify the owner if the contractor has acquired knowledge of any plant under which a suit for infringement could be reasonably brought because of the use by the owner of any equipment machinery, materials, process methods to be supplied in hereunder, Contractor agrees to and does hereby grant to owner together with the right to extend the same to any of the subsidiaries of the owner an irrevocable royalty free license to use in any country, any invention made by the contractor or his employees in or as a result of the performance of work under contract.
- 2) With respect to any subcontract entered into by contractor pursuant to the provisions of the relevant clause hereof, the contractor shall obtain from the sub-contractor an understanding to provide the owner with the same patent protection that contracts is required to provide under the provisions of the clause.
- 3) The owner shall indemnify and save harmless the contractor from any loss on account of claims against contractor for the contributory infringement of patent rights arising out of and based upon the claim that the use by the Corporation of the process included in the design prepared by the owner and used in the operation of the plant infringes on any patent rights.

GC.55 LIEN

If, at any time, there should be evidence of any lien or claim for which owner might have become liable and which is chargeable to the contractor, the owner shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify the owner against such lien or claim or if such lien or claim be valid the owner may pay and discharge the same and deduct the amount as paid from any money which may be due or become due and payable to the contractor. If any lien or claims remaining unsettled after all payments are made, the contractor shall refund or pay to the owner all money that the latter may be compelled to pay in discharging such lien or claim including all costs and reasonable expenses.

GC.56 EXECUTION OF WORK

The whole work shall be carried out in strict conformity with the provisions of the contract documents, detailed drawings, specifications and the instructions of the Engineer-in-charge from time to time. The contractor shall ensure that the whole work is executed in the most substantial, and proper manner with best workmanship using materials of best quality in strict accordance with the specifications to the entire satisfaction of the Engineer-in-charge.

GC.57 WORK IN MONSOON

When the work continues in monsoon, the contractor shall maintain minimum labor force required for the work and plan and execute the construction and erection work according to the prescribed schedule. No extra rate will be considered for such work in monsoon. During monsoon and entire construction period the contractor shall keep the site free from water at his own cost.

GC.58 WORK ON SUNDAYS AND HOLIDAYS

No work except curing shall be carried out on Sundays and Holidays. However, if the exigencies of the work need continuation of work on Sundays and Holidays, written permission of the Engineer in-charge shall be obtained in advance.

GC.59 GENERAL CONDITIONS FOR CONSTRUCTION WORK

Working hours shall be eight every day. The over time work in two shifts could be carried with the written permission of the Engineer-in-charge but no compensation shall be paid for the same. The rate quoted shall include this. The Contractor shall plan his work in such a way that his laborers do not remain idle. The owner will not be responsible for idle labor of the contractor. The contractor shall submit to the owner progress report every week. The details and Performa of the report will be as per mutual agreement.

GC.60 DRAWINGS TO BE SUPPLIED BY THE OWNER

The drawings attached with the tender documents shall be for general guidance of the Contractor to enable him to visualize the type of work contemplated and scope of work involved. Details working drawings according to which the work is to be done shall be furnished from time to time as the work progresses. The contractor shall study the drawings thoroughly in connection with details and bring to the notice of the Engineer-in-charge discrepancy if any, before actually carrying out the work.

GC.61 DRAWINGS TO BE SUPPLIED BY THE CONTRACTOR

Where drawings, data are to be furnished by the contractor they shall be as enumerated in special conditions of contract and shall be furnished within the specified time. Where approval of drawings has been specified it shall be the contractor’s responsibility to have these drawings got approved before any work is taken up with regard to the same. Any changes becoming necessary in those drawings during the execution of the work shall have to be carried out by the contractor at no extra cost. All final drawings shall bear the certification stamp as indicated below duly signed by both the contractor and Engineer-in-charge.

“Certified true for

.....Project

Agreement No.

Signed

Contractor.

Engineer-in-charge.

Drawings will be approved within three (3) weeks of the receipt of the same by the Engineer-in-charge.

GC.62 SETTING OUT WORK

The Contractor shall set out the work on the site handed over by the Engineer-in-charge and shall be responsible for the correctness of the same. The work shall be carried out to the entire satisfaction of Engineer-in-charge. The approval thereof or partaking by Engineer-in-charge in setting out work shall not relieve contractor of any of his responsibilities. The contractor shall provide at his own cost all necessary level posts, pegs, bamboos, flags, ranging rods, strings and other materials and laborers required for proper setting out of the work. The contractor shall provide fix and be responsible for the maintenance of all stakes, templates, level markets, profiles and similar other things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequences for such removal or disturbance. The contractor shall also be responsible for the maintenance of all existing survey marks, boundary marks, distance marks and center line marks either existing or face lines and cross lines shall be marked by small masonry pillars. Each pillar shall have distance mark at the center for setting up the theodolite. The work shall not be started unless the setting out is choked and approved by Engineer-in-charge in writing but such approval shall not relieve the contractor of his responsibilities about the correctness of setting out. The contractor shall provide all materials, labor and other facilities necessary for checking at his own cost. Pillars boring geodetic marks on site shall be protected by the contractor. On completion of the work the contractor shall submit the geodetic documents according to which the work has been carried out.

GC.63 RESPONSIBILITIES OF CONTRACTOR FOR CORRECTNESS OF WORK

The contractor shall be entirely and exclusively responsible for the correctness of every part of the work and shall rectify completely any errors therein at his own cost when so instructed by Engineer-in-charge. If any error has crept in the work due to non-observance of this clause, the contractor will be responsible for the error and bear the cost of corrective work.

1. Material to be supplied by the contractor :

Contractor shall procure and provide all the material required for the execution and maintenance of work including M.S. rods, all tools, tackles, construction plant and equipment except, the materials to be supplied by the owner detailed in the contract documents. Owner, shall make recommendations for procurement of materials to the respective authorities if desired by the contractor but assumes no responsibility of any nature. Owner shall insist for procurement of materials with ISI marks supplied by reputed firms of the DGS & D list.

2. If however, the Engineer-in-charge feels that the work is likely to be delayed due to contractor's inability to procure materials, the Engineer-in-charge shall have the right to procure materials from the market and the contractor will accept these materials at the rates decided by Engineer-in-charge.

GC.64 MATERIALS TO BE SUPPLIED BY THE OWNER

1. If the contract provided certain materials or stores to be supplied by the owner, such materials and stores transported by the contractor at his cost from owner's stores or Railway Station. The cost from contractor for the value of materials supplied by the owner will be recovered from the R.A. bill on the basis of actual consumption of materials in the work covered and for which R.A. bill has been prepared. After completion of the work the contractor has to account for the full quantity of materials supplied to him.

The value of store materials supplied by the owner to the contractor shall be charged at rates shown in the contract documents and in case any other material not listed in the schedule of materials is supplied by the owner, the same shall be charged at cost price including carting and other expenses incurred in procuring the same. All materials so supplied shall remain the property of the owner and shall not be removed from the site on any account. Any material remaining unused at the time of completion of work or termination of contract shall be returned to owner's store or any other place as directed by the Engineer-in-charge in perfectly good condition at contractor's cost. When materials are supplied free of cost for use in work and surplus and unaccounted balances thereof are not

returned to the owner, recovery in respect of such balance will be effected at double the applicable issue rate of the material or the market rates whichever is higher.

G.65 CONDITIONS OF ISSUE OF MATERIALS BY THE OWNER

- (a) The materials specified to be issued by the owner to the contractor shall be issued by the owner at his store and all expenses for its carting to site shall be borne by the contractor and will be issued during working hours and as per rules of owner from time to time.
- (b) Contractor shall bear all expenses for storage and safe custody at site of materials issued to him before use in work.
- (c) Material shall be issued by the owner in standard/non-standard sizes as obtained from manufacturer.
- (d) Contractor shall construct suitable go downs at site for storing the materials to protect the same from damage due to rain, dampness, fire, theft etc.
- (e) The contractor should take the delivery of the materials issued by the owner after satisfying himself that they are in good conditions. Once the materials are issued, it will be the responsibility of the contractor to keep them in good condition and in safe custody. If the materials get damaged or if they are stolen, it shall be the responsibility of the contractor to replace them at his cost according to the instructions of the Engineer-in-charge.
- (f) For delay in supply or for non-supply of materials to be supplied by the owner, on account of natural calamities, act of enemies, other difficulties beyond the control of the owner, the owner carries no responsibilities. In no case the contractor shall be entitled to claim any compensation for loss suffered by him on this account.
- (g) None of the materials issued to the contractor, shall be used by the contractor for manufacturing items which can be obtained from the manufacturer's. The materials issued by the owner shall be used for the work only and no other purpose.
- (h) Contractor shall be required to execute indemnity bond in the prescribed form for the safe custody and account of materials issued by the owner.
- (i) Contractor shall furnish sufficiently in advance a statement of his requirements of quantities of materials to be supplied by the owner and the time when the same will be required for the work, so as to enable Engineer-in-charge to make arrangements to procure and supply the materials.
- (j) A daily account of materials issued by the owner shall be maintained by the contractor showing receipt, consumption and balance on hand in the form laid down by Engineer-in-charge with all connected paper and shall be always available for inspection in the site office.
- (k) Contractor shall see that only the required quantities of materials are got issued and no more. The contractor shall be responsible to return the surplus materials at owner's store at his own cost.

GC.66 MATERIALS PROCURED WITH ASSISTANCE OF THE OWNER

Notwithstanding anything contained to the contrary in any of the clauses of this contract, where any materials for the execution of the contract are procured with the assistance of the owner either by issue from owner's stock or purchase made under orders or permits or licenses issued materials as trustees for owner, and use such materials not dispose them off without the permission of owner and unserviceable materials that may be left with him after completion of the contract or at its termination for any reason whatsoever on his being paid or credited such price as Engineer-in-charge shall determine having due regard to the conditions of the materials. The price allowed to contractor shall not exceed the amount charged to him excluding the storage charges if any. The decision of Engineer-in-charge shall be final and conclusive in such matters. In the event of breach of the aforesaid condition, the contractor shall in terms of license or permits and/or for criminal breach of trust be liable to compensate owner at double the rate or any higher rates. In the event of these

materials at that time having higher rate or not being available in the market then any other rate to be determined by the Engineer-in-charge at his decision shall be final and conclusive.

GC.67 MATERIALS OBTAINED FROM DISMANTLING

If the contractor, in the course of execution of work, is called upon to dismantle any part of work for reasons other than on account of bad or imperfect work, the materials obtained from dismantling will be the property of the owner and will be disposed of as per instructions of Engineer-in-charge in the best interest of the owner.

GC.68 ARTICLE OF VALUE OF TREASURE FOUND DURING CONSTRUCTION

All gold, silver and other minerals of any description and all precious stones, coins, treasures, relics, antiquities and other similar things which shall be found in, under or upon site shall be the property of the owner and the contractor shall properly preserve the same to the satisfaction of the Engineer-in-charge and shall hand over the same to the owner.

GC.69 DISCREPANCIES BETWEEN INSTRUCTIONS

If there is any discrepancy between the various stipulations of the contract documents or instructions to the contractor or his authorized representative or if any doubt arises as to the meaning of such stipulation or instructions, the contractor shall immediately refer in writing to the Engineer-in-charge whose decision shall be final and conclusive and no claim for losses caused by such discrepancy shall in any event be admissible.

GC.70 ALTERATIONS IN SPECIFICATIONS AND DESIGNS AND EXTRA WORK

A.) The Consultant /Engineer-in-Charge shall have power to make any alterations in, omission from, addition to, substitutions for, the schedule of rates, the original specifications, Drawings, designs, and instructions that may appear to him to be necessary or advisable during the progress of work and the contractor shall be bound to carry out such altered/extra/new items of work in accordance with any instructions which may be given to him in writing signed by Engineer-in-Charge and such alteration omissions, additions or substitutions, shall not invalidate contract and any altered, additional or substituted work shall be carried out by the contractor on the same conditions of contract. The time for completion may be extended by the consultant as may be considered just and reasonable by him. The rates for such additional, altered or substitute work shall be worked out as under :-

- a) If the rates for additional, altered or substitutes work are specified in the contract for work, the contractor is bound to carry out such work at the same rates as specified in the contract.
- b) If the rates for additional, altered or substituted work are not specifically provided in the contracts for the work, the rates will be derived from the rates of similar items of work in the contract work. The opinion of Engineer-in-Charge as to whether the rates can be reasonably so derived the items of contract will be final and binding the contractors;
- c) If the rates of altered, additional or substitute work cannot be determined as specified in (a) or (b) above, the rate shall be paid as per S.O.R. of RMC/GWSSB/R&B Dept.
- d) If the rates of altered, additional or substitute work cannot be determined as specified in a) or b) or c) above, the contractor shall within seven days of the receipt of order to carry out the work inform the Consultant/Engineer-in-Charge of the rate which he intends to charge for such work supported by rate analysis and the Consultant/Engineer-in-Charge will determine the rate on the basis of prevailing market rates of materials, labour cost at schedule of labour plus 15% there on as contractor's supervision overheads and profit. The opinion of Consultant/ Engineer-in-Charge as to the market rates of materials and the quantity of labour involved per unit of measurement will be final and binding on contractor.

B)But under no circumstances, the contractor suspend work or the plea of non settlement of items falling under this clause.

GC. 71 ACTION WHEN NO SPECIFICATIONS IS ISSUED

In case of any class of work for which no specification is supplied by the owner in the tender documents, such work shall be carried out in accordance with relevant la-test ISS and if ISS do not cover the same, the work shall be carried out as per general technical specification for building work; and if not covered in then it is to be with standard Engineering practice subject to the approval of Engineer-in-charge.

GC.72 ABNORMAL RATES

Contractor is expected to quote rate for each item after careful analysis of cost involved for the performance of the completed item considering all specifications and conditions of contract.

GC.73 ASSISTANCE TO ENGINEER-IN-CHARGE

Contractor shall make available to Engineer-in-charge free of cost all necessary instruments and assistance in checking of any work made by the contractor setting out for taking measurement of work etc.

GC.74 TESTS FOR QUALITY OF WORK

1. The contractor shall be required to give satisfactory hydraulic test as well as any other tests required for quality assurance. He shall have to rectify the defects, if any free of cost. The necessary water, power, labour, etc required for the hydraulic test or any other tests shall also be arranged by the contractor at his own cost.

2. All workmanship shall be of the best kind described in the contract documents and in accordance with the instructions of Engineer-in-charge and shall be subjected from time to time to such tests at contractor cost as the Engineer-in-charge may direct at the place of manufacture of fabrication or on the site or at any such place. Contractor shall provide assistance, instruments, labour, and materials as are normally required for examining, measuring and testing of any work or workmanship as may be selected and required by Engineer-in-charge.

3. All tests necessary in connection with the execution of work as decided by Engineer-in-charge shall be carried out at an approved laboratory at contractor's cost.

4. Contractor shall furnish the Engineer-in-charge for approval when requested or if required by the specification, adequate samples of all materials and finished goods to be used in work sufficiently in advance to permit tests and examination thereof. All materials furnished and finished goods applied in work shall be exactly as per the approved samples.

GC.75 ACTION AND COMPENSATION IN CASE OF BAD WORKMANSHIP

If it shall appear to the Engineer-in-charge that any work has been executed with materials of inferior description, or quality or are unsound or with unsound, imperfect or unskilled workmanship or other wise not in accordance with the contract, the contractor shall, on demand in writing from Engineer-in-charge or his authorized representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work, so specified. In the event of failure to do so within a period to be specified by the Engineer-in-charge in his aforesaid demand, contractor shall be liable to pay compensation at the rate of half a percent of the estimated cost of work for every work limited to a maximum of ten (10%) percent of the value of work while his failure to do so continues and in the case of any such failure the Engineer-in-charge may on expiry of the notice period rectify and remove and re execute the work or remove and replace with others at the risk and cost of the contractor. The decision of the Engineer-in-charge as to any question arising under this clause shall be final and conclusive.

GC.76 SUSPENSION WORK

Contractor shall, if ordered in writing by Engineer-in-charge or his representative temporarily suspended the work or any part thereof for such time (not exceeding one month) as ordered and shall not after receiving such written notice proceed with the work until he shall have received a written order to proceed therewith. The contractor shall not be entitled to claim compensation for any loss or damage sustained by him by reason of temporary suspension of work as aforesaid. An extension of time for completion of work will be granted to the contractor corresponding to the delay caused by such suspension of work if he applies for the same provided the suspension was not consequent upon any default or failure on the part of the contractor.

GC.77 OWNER MAY DO PART OF THE WORK

When the contractor fails to comply with any instructions given in accordance with the provisions of this contract, the owner has the right to carry out such parts of work as the owner may designate whether by purchasing materials and engaging labor or by the agency of another contractor. In such case the owner shall deduct from the amount which otherwise might become due to contractor, the cost of such work and materials with ten (10) percent added to cover all departmental charges and should the total amount thereof exceed the amount due to contract, contractor shall pay the difference to owner.

GC.78 POSSESSION PRIOR TO COMPLETION

The Engineer-in-charge shall have the right to take possession of or to use any completed or partly completed work or part of work. Such possession or use shall not be deemed to be an acceptance of any work completed in accordance with the contract. If such prior possession or use by Engineer-in-charge delays the process of work, equitable adjustment in the time of completion will be made and the contract shall be deemed to be modified accordingly.

GC.79 COMPLETION CERTIFICATE

As soon as the work has been completed in accordance with contract (except in minor respects that do not effect their use for the purpose for which they are intended and except for maintenance thereof) as per general conditions of contract the Engineer-in-charge shall issue a certificate (hereinafter called completion certificate) in which shall certify the date on which work has been completed and has passed the said tests and owner shall be deemed to have taken over work on the date so certified. If work has been divided in various groups in contract, owner shall be entitled to take over any group or groups before the other or others and there upon the Engineer-in-charge will issue a completion certificate which will, however, be for such group or groups so taken over only.

In order that contractor could get a completion certificate, he shall make good, with all speed any defect arising from the defective materials supplied by contractor or workmanship or any act or omission of contractor that may have been discovered or developed after the work or groups of works has been taken over. The period allowed for carrying out such work will be normally, one month. If any defect be not remedied within the time, specified, owner may proceed to do work at contractor's risk and expenses and deduct from the final bill such amount as may be decided by owner. If by reason of any default on the part of the contractor, a completion certificate has not been issued in respect of every portion of work within one month after the date fixed by contract for completion of work, owner shall be at liberty to use work or any portion thereof in respect of which a completion certificate has been issued, provided that work or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completion of that work or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completion of that work for the issue of completion certificate.

GC.80 SCHEDULE OF RATES

1]. The rates quoted by the contractor shall remain firm till the completion of the work and shall not be subject to escalation. Schedule of rates shall be deemed to include and cover all costs, expenses

and liabilities of every description and all risks of every kind to be taken in executing, completing and handing over the work to owner by contractor. The contractor shall be deemed to have known the nature, scope magnitude and the extent of work and materials required though contract documents may not fully and precisely furnish them. He shall make such provision in the schedule of rates as he may consider necessary to cover the cost of such items of work and materials as may be reasonable and necessary to complete work. The opinion of Engineer-in-charge as to the item of work which are necessary and reasonable for completion of work shall be final and binding on contractor although the same may be not shown on drawings or described specifically in contract documents.

2]. The schedule of rates shall be deemed to include and cover the cost of all constructional plant, temporary work, materials, labor and all other matters in connection with each item in schedule of rates and the execution of work or any portion thereof finished complete in every respect and maintained as shown or described in the contract document or as may be ordered in writing during the continuance of the contract.

3]. The schedule of rates shall be deemed to include and cover the cost of all royalties and fees for the articles and processes, protected by letters patent or otherwise incorporated in or used in connection with work, also all royalties, rents and other payments in connection with obtaining materials of whatsoever kind for work and shall include an indemnity to owner which contractor hereby gives against all actions, proceedings, claims, damages, costs and expenses arising from the incorporation in or use on the works of any such

articles, processes or materials. Octroi or other municipal or local board charges if levied on material, equipment or machineries to be brought to site for use on work shall be borne by the contractor.

4]. No exemption or reduction of custom duties, excise duties, sales tax or any other taxes or charges of the central or state Government or of any local body whatsoever will be granted or obtained and all such expenses shall be deemed to have been included in and covered by schedule of rates. Contractor shall also obtain and pay for all permits or other privileges necessary to complete the work.

5]. The schedule of rates shall be deemed to include and cover risks on account of delay and interference with contractor's conduct of work which may occur from any cause including orders of owner in the exercise of his powers and on account of extension of time granted due to various reasons.

6]. For work under unit rate basis no alteration will be allowed in the schedule of rates by reasons of work or any part of them being modified, altered, extended, diminished or omitted.

GC.81 PROCEDURE FOR MEASUREMENT OF WORK IN PROGRESS

1) All measurements shall be in metric systems. All the works in progress will be jointly measured by the representative of engineer-in-charge and contractor's authorized person. Such measurements will be got recorded in the measurement book by the engineer-in-charge or his authorized representative and signed by the contractor or his agent in token of acceptance. If the contractor or his authorized agent fails to be present when ever required by engineer-in-charge for taking measurements for any reasons whatsoever, the measurement will be taken by the Engineer-in-charge or his authorized representative notwithstanding the absence of contractor and these measurements will be deemed to be correct and binding to the contractor.

2) Contractor will submit a bill in approved Performa in quadruplicate to the Engineer-in-charge of the work giving abstract and detailed measurements of various items executed during a month as mutually agreed. The Engineer-in-charge shall verify the bill and the claim, as far as admissible, adjusted if possible, within 10 days of presentation of the bills.

GC.82 RUNNING ACCOUNT PAYMENTS TO BE REGARDED AS ADVANCES

1. All running account payments shall be regarded as payments by way of advance against the final payment only and not as payment for work actually done and completed and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or rejected or to be considered as an admission of the due performance of contract or any part thereof.
2. Five (5) percent of the gross R.A. bill amount shall be retained from each bill as retention amount and the same will be paid with the final bill.

GC.83. NOTICE FOR CLAIM FOR ADDITIONAL PAYMENT

If the contractor considers that he is entitled to extra payment or compensation or any claim whatsoever in respect of work, he shall forthwith give notice in writing to the Engineer-in-charge about his extra payment and/or compensation. Such notice shall be given to the Engineer-in-charge within ten **(10 days)** from the happen of any event upon which contractor basis such claims & such notice shall contain full particulars of the nature of such claim with full details and amount claimed. Failure on the part of the contractor to put forward any claim with the necessary particulars as above, within the time above specified shall be an absolute waiver thereof. No omission by owner to reject any such claim and no delay in dealing therewith shall be waiver by owner or any rights in respect thereof.

GC.84 PAYMENT OF CONTRACTOR'S BILL

1. The price to be paid by the owner to contractor for the work to be done and for the performance of all the obligations undertaken by the contractor under contract shall be based on the contract price and payment to be made accordingly for the work actually executed and approved by the Engineer-in-charge.
2. No payment shall be made for work costing less than Rs. 50,000/- till the work is completed and a certificate of completion given. But in case of work estimated to cost more than Rs. 50,000/-. Contractor on submitting the bill thereof will be entitled to receive a monthly payment proportionate to the part thereof, approved and passed by Engineer-in-charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against contractor. This payment shall be made after necessary deductions as stipulated elsewhere in the contract documents for materials, security-deposit etc. The payment shall be released to the contractor within fifteen (15) days of submission of the bill duly pre-occupied on proper revenue stamp. Payment due to contractor shall be made by the owner by crossed account payee cheque in Indian Currency forwarding the same to the registered office of the contractor. Owner shall not be responsible if the cheque is mislaid or misappropriated by unauthorized persons.

GC.85 FINAL BILL

The final bill shall be submitted by contractor within one (1) month of the date of completion of work and handing over the plant/work, otherwise the Engineer-in-charge's certificate of the measurement and of total amount payable for work shall be final and binding on all parties.

GC.86 RECEIPT FOR PAYMENT

Receipt for payment made on account of work when executed by a firm must be signed by a person holding power of attorney in this respect on behalf of contractor except when described in the tender as a limited company in which case the receipt must be signed in the name of the company by one of its principal officers or by some other person having authority to give effectual receipt for the company.

GC.87 COMPLETION CERTIFICATE

1. When the contractor fulfils his obligation as per terms of contract he shall be eligible to apply for completion certificate. Contractor may apply for separate completion certificate in respect of each

such portion of work by submitting the completion documents along with such application for completion certificate.

The Engineer-in-charge shall normally issue to contractor the completion certificate within one (1) month after receiving an application thereof from contractor after verifying, from the completion documents and satisfying himself that work has been completed in accordance with and as set out in the construction and erection drawings and the contract documents. Contractor after obtaining the completion certificate is eligible to present the final bill for work executed by him under the terms of contract.

2. Within One month of completion of work in all respects contractor shall be furnished with a certificate by the Engineer-in-charge of such completion but no certificate shall be given nor shall work be deemed to have been executed until all (i) scaffolding, surplus materials and rubbish is cleared off site completely, (ii) until work shall have been measured by the Engineer-in-charge whose measurement shall be binding and conclusive and (iii) until all the temporary works, labor and staff colonies etc. constructed are removed and the work site cleaned to the satisfaction of the Engineer-in-charge. If contractor shall fail to comply with the requirements as aforesaid or before date fixed for the completion of work, the Engineer-in-charge may at the expense of contractor remove such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit.

3. The following documents will form the completion documents :

- a. Technical documents according to which the work has been carried out.
- b. Three sets of construction drawings showing therein the modifications and corrections made during the course of execution signed by the Engineer-in-charge.
- c. Completion certificate for 'Embedded' or 'Covered' up work.
- d. Certificate of final levels as set out for various works.
- e. Certificate of test performed for various work.
- f. Material appropriation statement for the materials issued by owner for work and list of surplus materials returned to owner's store duly supported by necessary documents.
- g. Operation and maintenance manual (If necessary).

4. Upon expiry of the period of defect liability and subject to Engineer-in-charge being satisfied that work has been duly maintained by contractor during the defects liability period as fixed originally or as extended subsequently and that contractor has in all respects made up any subsidence and performed all his obligations under contract, the Engineer-in-charge shall (without prejudice to the rights of owner in any way) give final certificate to that effect. The contractor shall not be considered to have fulfilled the whole of his obligation until final certificate shall have been given by the Engineer-in-charge.

5. Final certificate only evidence of completion :

Except the final certificate no other certificate of payment against a certificate or on general account shall be taken to be an admission by owner of the due performance of contract or any part thereof or of occupancy or validity or any claim by the contractor.

GC.88 TAXES, DUTIES, VAT ETC.

1. Contractor agrees to and does hereby accept full and exclusive liability for the payment of any and all taxes including sale tax, duties, VAT, etc now or herein after imposed, increased or modified from time to time in respect of work and materials and all contributions and taxes for unemployment, compensation, insurance and old age pension or annuities now or hereinafter imposed by the Central or State Government authorities with respect to or covered by the wages, salaries or other compensation paid to the persons employed by contractor.

If the contractor is not liable to sale tax assessment, a certificate to that effect from the competent authority shall be produced without which final payment to the contractor shall not be made. No. IP, 'C' and 'D' from shall be supplied by the owner, and the contractor shall be required to pay full sales tax as applicable.

2. Contractor shall be responsible for compliance with all obligations and restrictions imposed by the labor law or any other law affecting employer-employee relationship.

3. Contractor further agrees to comply and to secure the compliance of all subcontractors with applicable central state, municipal and local laws and regulations and requirement. Contractor also agrees to defend, indemnify and hold harmless the owner from any liability or penalty which may be imposed by central, state or local authority by reasons of any violation by contractor or subcontractor of such laws, regulations or requirements and also from all claims, suits or proceedings that may be brought against owner arising under, growing out of or by reasons or work provided for by this contract by third parties or by central or state government authority or any administrative sub-division thereof.

The GST on work contract will be born by contractor.

GC.89 INSURANCE

Contractor shall at his own expenses carry and maintain with reputable Insurance Companies to the satisfaction of owner as follows :-

1. Contractor agrees to and uses hereby accept full and exclusive liability for compliance with all obligations impose by the Employee's State Insurance Act 1948, and Contractor further agrees to defend, indemnify and hold owner hardness from any liability or penalty which may be imposed by the central or state government or local authority by reasons of any assorted violation by Contractor or sub-Contractor or the Employees, State Insurance Act 1948 and also from all claims, suits or proceedings that may be brought against owner arising under, growing out of or by reasons of the work provided for by this contract whether brought by employees of contractor, by third parties or by Central or State Government authority or any administrative sub division thereof.

Contractor agrees to fill in with the Employees State Insurance Corporation, the declaration form and all forms which may be required in respect of contractor's or sub-contractor's employees who are employed in this work shall be covered by ESI from time to time under the agreement. The Contractor shall deduct and secure the agreement of the sub contractor to deduct the employees contribution as per the first schedule of the Employees State Insurance Act from wages. Contractor shall remit and secure the agreement of sub-contractor to remit to the State Bank of Indian Employees State Insurance Corporation Accounts, the employees contribution as required by the act. Contractor agrees to maintain all cards and records as required under the Act in respect of employees and payments and contractor shall secure the agreements of the sub contractors to maintain in such records, any expenses incurred for the contributions, making contributions or maintaining records shall be to contractors or sub-contractors own account. Owner shall retain such sum as may be necessary from the contract value until contractor shall furnish satisfactory proof that all contribution as required by the Employees State Insurance Act 1948 have been paid.

2. Work mans compensation and employees liability insurance : Insurance shall be effected for all contractors employees engaged in the performance of this contract. If any part of work is sublet, contractor shall require the sub contractor to provide workman's compensation and employer's liability insurance which may be required by owner.

Other Insurance required under law of regulations or by owner Contractor shall also carry and maintain any and all other insurance which may be required under any law or regulation from time to time. He shall also carry and maintain any other insurance which may be required by owner.

GC.90 DAMAGE TO PROPERTY

1. Contractor shall be responsible for making good to the satisfaction of owner any loss of and any damage to all structures and properties belonging to owner or being executed or procured or being procured by owner or of other agencies within the premises of all work of owner, if such loss or damage is due to fault and/or the negligence of willful act or omission of contractor, his employees, agent, representatives or subcontractors.

2. Contractor shall indemnify and keep owner harmless of all claims for damage to properties other than property arising under by reasons of this agreement, such claims result from the fault and/or negligence or willful act or omission of contractor, his employees, agents, representative or sub contractors.

GC.91 CONTRACTOR TO INDEMNIFY OWNER

1. The contractor shall indemnify and keep indemnified the owner and every member, officer and employee of owner from and against all actions, claims, demands and liabilities whatsoever under the in respect of the breach of any of the above clauses and/or against any claim, action or demand by any workman/employee of the contractor or any sub contractor under any laws rules or regulations having force of laws, including but not limited to claims against the owner under the workman compensation Act 1923, the employees' Provident Funds Act 1952 and/or the contract Labor (Abolition and Regulations) Act 1970.

2. PAYMENTS OF CLAIMS AND DAMAGES : If owner has to pay any money in respect of such claims or demands aforesaid, the amount so paid and the cost incurred by the owner shall be charged to and paid by contractor without any dispute notwithstanding the same may have been paid without the consent or authority of the contractor.

3. In every case in which by virtue of any provision applicable in the workman's Compensation Act 1923 or any other Act, owner be obliged to pay compensation to workmen employed by contractor the amount of compensation so paid, and without prejudice to the rights of owner under sec. (12) sub section (2) of the said Act, owner shall be at liberty to recover such amount from any surplus due to or to become due to the contractor or from the security deposit. Owner will not be bound to contest any claim made under section (12) subsection (2) of the said act except on written request of contractor and giving full security for all costs consequent upon the contesting of such claim.

The contractor shall protect adjoining sites against structural, decorative and other damages that could be cased to adjoining premises by the execution of these works and made goods at his cost, any such damage, so caused.

GC.93 IMPLEMENTATION OF APPRENTICE ACT 1954

Contractor shall comply with the provisions of the apprentice Act 1954 and the orders issued there under from time to time. If he fails to do so, it will be a breach of contract.

GC.94 HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

Contractor shall comply with all the rules and regulations of the local sanitary authorities or as framed by owner from time to time for the protection of health and provide sanitary arrangements of all labor directly or indirectly employed on the work of this contract.

GC.95 SAFETY CODE

GENERAL :

Contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions and shall comply with owner's rules as set forth herein.

1. First Aid and Industrial Injuries :

1.1 Contractor shall maintain first aid facilities for its employees and those of his sub-contractors.

1.2 Contractor shall make outside arrangements for ambulance service and for the treatment of industrial injuries. Name of those providing these services shall be furnished to Engineer-in-charge, prior to start of construction, and their telephone numbers shall be prominently posted in contractor's field office.

1.3 All injuries shall be reported promptly to Engineer-in-charge and a copy of Contractor's report covering each personal injury requiring the attention of a physician shall be furnished to owner.

2. General Rules :

2.1 Carrying and striking, matches, lighters inside the project area and smoking within the job site is strictly prohibited. Violators of smoking rules shall be discharged immediately. Within the operation area, no hot work shall be permitted, without valid gas, safety, fire permits. The contractor shall also be held liable and responsible for all lapses of his sub-contractors/employees in this regard.

3. Contractor's Barricades :

3.1 Contractor shall erect and maintain barricades without any extra cost, required in connection with his operation to guard or protect during the entire phase of the operation of this contract for,

- (a) Excavation
- (b) Hoisting areas
- (c) Areas adjudged hazardous by Contractor's OR Owner's inspectors.
- (d) Owner's existing property liable to be damaged by Contractor's operations, in the opinion of Engineer-in-charge/site Engineer.
- (e) Rail road unloading sports.

3.2 Contractor's employees and those of his subcontractors shall become acquainted with owner's barricading practices and shall respect the provisions thereof.

3.3 Barricades and hazardous areas adjacent to but not located in normal routes of travel shall be marked by red lantern at night.

4. Scaffolding :

4.1 Suitable scaffolding shall be provided for workman for all works that cannot safely be done from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handholds shall be provided on the ladder and the same shall be given an inclination not steeper than 1 in 4 (1 horizontal and 4 vertical).

4.2 Scaffolding or staging, more than 3.6 M (12') above the ground or floor, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise fixed at least 1.0M (3') high above the floor or platform or scaffolding or staging and extending along the entire length of the outside ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

4.3 Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or inadequately and if the height of the platform or the gangway of the stairway is more than 3.6 M (12') above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in 4.2 above.

4.4 Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1.0 M (3'.0")

4.5 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9.0M (30') in length while the width between the side rails in rung ladder shall in no case be less than 30 Cms(12 inches) for ladder upto and including 3.0M (10'); in longer ladders this width would be increased at least 6MM(1/4") for each additional 30 cm (1.0) of length. Uniform step spacing shall not exceed 30 cms. (12") Adequate precaution shall be taken to prevent danger from electrical equipment. No materials on any of the side of work shall be so stacked or placed as to cause danger or inconvenience to any person or public. The contractor shall also provide all necessary fencing and lights to protect the workers and staff from accidents, and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precautions and to pay damages and costs which may be awarded in any such suit or action or proceedings to any such person, or which, may be with the consent of the contractor be paid to compromise any claim by any such person.

5. Excavation :

5.1 All trenches 1.2M (4') or more in depth, shall at all time be supplied with at least one ladder.

5.2 Ladder shall be extended from bottom of the trench to at least 3" above the surface of the ground. The side of the trench which are 1.5M (5') or more in depth shall be stopped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 1.5M (5') of the trench or half of the trench depth whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or under cutting be done.

6. Demolition :

6.1 Before any demolition work is commenced and also during the progress of the work all roads and open area adjacent to the work site shall either be closed or suitably protected.

6.2 No electric cable or apparatus which is liable to be a source of danger shall remain electricity charged.

6.3 All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion of flooding. No floor, or other part of the building shall be so over loaded with debris or materials as to render it unsafe.

7.0 Safety equipment :

7.1 All necessary personal safety equipment as considered necessary by the Engineer-in-charge should be made available for the use of persons employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

7.2 Workers employed on mixing asphalt materials, cement and lime mortars shall be provided with protective footwear and protective gloves.

8.0 Risky Places :

8.1 When the work is done near any place where there is a risk of drowning, all necessary safety equipment shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

9.0 Hoisting equipment :

9.1 Use of hoisting machines and tackles including their attachments, and storage and supports shall conform to the following standards or conditions.

9.1.1 These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good condition and in good working order.

9.1.2 Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.

9.1.3 Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding.

9.1.4 In case of every hoisting machine and of every chain ring hook, shackle, swivel and pulley block used in hoisting or lowering or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

9.1.5 In case of departmental machine, the safe work load shall be notified by the Engineer-in-charge, As regards contractors machine, the contractor shall, notify, the safe working load of the machine to the Engineer-in-charge. Whenever the contractor brings any machinery to site of work he should get it verified by the Engineer-in-charge concerned.

10.0 Electrical Equipment :

10.1 Motors, gears, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards, hoisting appliance should be provided with such means when will reduce to the minimum the risk of accidental descent of the load, adequate precautions shall be taken to reduce to the minimum the risk of any part or a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel such as gloves, and boots as may be necessary shall be provided. The workers shall not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

11.0 Maintenance of safety devices :

11.1 All scaffolds, ladders and other safety devices as mentioned or described herein shall be maintained in sound condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near place of work.

12.0 Display of Safety instructions :

12.1 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at the work spot. The persons responsible for compliance of the safety code shall be named therein by the contractor.

13.0 Enforcement of safety regulations :

13.1 To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangement made by the contractor shall be open to inspection by the welfare officer, Engineer-in-charge or safety Engineer of the owner or their representatives.

14.0 No exemption :

14.1 Notwithstanding the above clauses 1.0 to 13.0 there is nothing to exempt the contractor from the operations of any other act or rules in force in the Republic of India.

14.2 In addition to the above, the contractor shall abide by the safety code provisions as per C.P.W.D. safety code framed from time to time.

GC. 96 ACCIDENTS

It shall be the contractor's responsibility to protect against accidents on the works. He shall indemnify the owner against any claim for damage or for injury to person or property resulting from, and in the course of work and also under the provision of the workman's compensation Act. On the occurrence of an accident arising out of the works which results in death or which is so serious as to be likely to result in death, the contractor shall within twenty four hours of such accident, report in writing to the Engineer-in-charge, the facts stating clearly and in sufficient details the circumstances of such accident and the subsequent action. All other accidents on the works involving injuries to person or damage to property other than that of the contractor shall be promptly reported to the Engineer-in-charge, stating clearly and in sufficient details the facts and circumstances of the accidents and the action taken. In all cases the contractor shall indemnify the owner against all loss or damage resulting directly or indirectly from the contractor's failure to report in the manner aforesaid. This includes penalties or fines, if any, payable by the owner as a consequence of failure to give notice under the Workman's Compensation Act or failure to conform to the provisions of the said act in regard to such accidents.

In the event of an accident in respect of which compensation may become payable under the workman's compensation Act VIII of 1923 including all modification thereof, the Engineer-in-charge may retain out of money due and payable to the contractor such sum or sums of money as may in the opinion of the Engineer-in-charge be sufficient to meet such liability. On receipt of award from the labor commissioner in regard to quantum of compensation, the difference in amount will be adjusted.

Sign & Stamp Of Contractor

SCOPE OF WORK

The scope of Mechanical, Electrical & Instrumentation equipment work shall include but not limited to the following for SITC work of Pumping Machinery with allied Electro-Mechanical works with Operation & Comprehensive Maintenance, and defect liability period of 5 Years of Pumping Stations as mentioned in this tender:

A Mechanical Works:

A.1 Scope for SITC of Mechanical work shall include:

A.1.1 Submersible Centrifugal Non-Clog Pump-Motor Sets with all required accessories like automatic coupling device, guide pipes, chain, cables, foundation bolts & nuts etc. with all required accessories and hardware complete as per BOQ.

B Electrical Works:

B.1 The Scope for SITC of **Electrical work** shall include:

B.1.1 Incoming LT cable from Power Supply Company Metering Panel / switch to the LT panel Incomer through Switch Fuse Unit and with all required accessories and hardware as per BOQ.

B.1.2 Main LT Panel including Star-delta Starters for sewage pumps as applicable, with all required accessories and hardware as per BOQ.

B.1.3 Cable Tray & Cabling System etc. and with all required accessories and hardware and as per BOQ.

B.1.4 DG Set and with all required accessories, hardware and Foundation concrete otta , Shed etc, as per BOQ.

B.1.5 Safety Equipment / Accessories as per statutory norms / requirements and with all required accessories and hardware and as per BOQ.

B.1.6 Supports / Structural Steel works as required and with all required accessories and hardware and as per BOQ.

B.1.7 Misc. work and any other as required to complete the work.

C.1 OPERATION & MAINTENANCE

The bidder has to operate and run the pumping station along with Operation & Comprehensive Maintenance with defect liability period of 5 Years and maintain the same for five years (sixty months) with all spares, tools, consumables, lubricants, man power, etc. after completion of successful execution, installation and commissioning of works.

Only electric power and Diesel for operation of DG Set during O&M period shall be provided by Client free of cost.

The O&M Period shall commence after commissioning of PS & issue of completion certificate. The spares and tools as per BOQ shall be handed over to client within one month from the date of testing and commissioning of PS / project.

This storm water pumping station will operate for six months (180 Days) during monsoon period i.e from 1st June To 30th November every year for 05 years under this tender contract & for this scheduled manpower will be provided by bidder & operate the pumping station. If beyond these six months pumping station required to be operate than contractor is bound to operate this pumping station for such suggested period of time & for this extended operation time period only manpower payment shall be made on pro rata bases. During non operating period custody of pumping station shall remains with contractor & necessary arrangement shall be on the part of contractor without any extra cost.

D.2 ADDITIONAL SCOPE:

In addition to the above, following services are also included in the scope of the Contractor:

- D.2.1 Alignment, Drilling and grouting / Concrating of equipment
- D.2.2 Drilling holes, zary work on walls/ slabs for pipes and cables (if necessary).
- D.2.3 Clamping and supporting of all pipes, Cable tray, etc.
- D.2.4 Final painting of piping works, structural steel, etc. at site after installation,
- D.2.5 Drawings, Operation and Instruction/maintenance Manuals of each equipment- 2 set,
- D.2.6 Excavation, bedding and refilling as per requirement,
- D.2.7 Making good of the damage done to electro-mechanical installations and Civil work & Civil repairing work of the PS pump house during execution of all Electro-Mechanical Work.
- D.2.8 All structural steel shall be provided with two coats of primer and epoxy paint each in black or other shade as instructed by engineer-in-charge.
- D.2.9 Any other work as specified in various BOQ, tender specifications and other as required to complete the work in all respects and satisfactory operation of the same.
- D 2.10 For installation of machinery, required dewatering in any manner shall be in the scope of contractor.
- D2.11 Required lighting point internal wiring & light fixtures etc as per BOQ.
- D2.12 All material used for this work shall be as per approved current vendor list of GWSSB.

Signature of Contractor

ADDITIONALCITY ENGINEER
Rajkot Municipal Corporation

PART A - TECHNICAL SPECIFICATION

01.FOR SEWAGE ZERO SUCTION SUBMERSIBLE PUMP SET

Scope:

This specification covers the Design, manufacture, & supply, testing, performance guarantee and apply of zero suction sewage type submersible pumps. The construction of pump shall be of pump below, motor above and suction inlet at bottom, so that water can be pumped from the lowest level. The mixed flow type impellers shall be made of CI steel materials, capable to handle raw water having turbidity up to 20,000 P.P.M. and maximum particle size of 10 mm the motor shall be totally enclosed. Submersible water or squirrel cage, Induction type, water cooled, and protected against continuation from surrounding water by effective scaling using high quality mechanical seal. The motor should be designed for 415 + 10% and (-) 15% Volts, Three Phase, 50 cycles.

The zero suction, Sewage type Submersible Pumps should be of sturdy construction. The duty point of pump should be located at the optimum efficiency point of the pump rating curve and there should not be drop fall in efficiency in the range of +10% and - 25% Head variation:

The pumps as specified bore-in-shall generally comply with the requirement of all applicable codes, regulations and safety codes in the locality where the pumps sets shall be Installed. The pumps shall generally comply following standards.

- A. Relevant I S codes Submersible pump sets for raw water.
- B. I.S. 9283 - 1979 Motors for submersible pump sets.
- C. ASYM - E - 165 Standard Methods for Liquid Penetrant Inspection.
- D. Hydraulic Institute Standards (U. S. A.)

The submerged sewage pump shall be mono-block vertical type with jacket cooled motor. It shall be suitable for pumping of raw & filtered chlorinated water for Drinking purpose. The synchronous speed shall not exceed 1450rpm/ 960rpm at 50Hz supply.

The pumps shall be suitable for single as well as parallel efficient operation at any point in between the maximum system resistances. Pump shall run smooth without undue noise and vibration. Pump shall be suitable for starting with discharge valve open and or/Closed and shall be capable of withstanding the accidental rotation in reverse direction.

Impellers shall be of multi-vane and semi open non clog centrifugal type design. Maintenance free antifriction permanently greases filled ball bearings shall be provided and this shall take care of all the axial and radial forces at any point of operation. The weights of the revolving parts of the pumps including the unbalanced hydraulic

thrusts of the impellers shall be carried by thrust bearings provided in each pump assembly.

3.0 SPECIFIC REQUIREMENT:

- 3.1 The contractor shall make his own assessment of the friction losses (Based on C - 100 under all conditions of operation and suitable head shall be selected. Data given in the data sheets is indicative.
- 3.2 Detail of pumps and Motors such as discharge, efficiency Head, B.H.P., R.P.M. etc. shall be worked out and filled up by the contractor in the enclosed data sheets.
- 3.3 Pumps shall have a continuous rising head characteristic from the operating point towards shut-off without any zero of instability. Pumps with dropping curves shall not be acceptable.
- 3.4 Pumps of each category shall be identical in all respects and shall be suitable for paralld operation and from the same manufacturer. The contractor shall furnish curves for paralld operation and pumps shall be selected for paralld operation. The contractor shall also furnished torque speed curves of the pumps.
- 3.5 The minimum percentage of margin over the input power required at pump design point should be provided as mentioned here under. Motor HP. shall be suitable to cover complete operating ranges.

<u>Motor K.W.</u>	<u>% of Pump Design Point.</u>
960 RPM – 360 m3/hr at 10 m Head 15 KW	125%
1450 RPM – 100 m3/hr at 10 m Head 5.6 KW	125%

The power rating of motor thus selected should be higher than mean power consumption on any point of the Ch. curve.

- 3.6 Material of construction of pumps shall be as per data sheets enclosed.
- 3.7 Pumps Sets along with its drive shall run smooth without under noise and vibration. Noise level shall be limited to 76 db and vibration to 50 microns after installation.
- 3.8 All rotating parts shall be statically and dynamically balanced.
- 3.9 Pump shall be make of as per GWSSB approved Current vendor list for Similar type of Pumps.
- 3.10 Before placing the order for pumps approval to be obtained from RMC.
- 3.11 The motor drive shall be totally enclosed Sq. cage induction submersible motor confirming to relevant I.S.S.
- 3.12 **GENERAL REQUIREMENTS:**
- 3.13 The calculation for system resistance is to be furnished along with offer. The HQ characteristic of pump to be super imposed on system resistance

curved and to be enclosed. with bid. The pump model shall be the one from the existing regular production range of the manufacturer.

4.14 At least 5 units of the pump model shall be operation at different job sites.

4.15 The pump sets are to be recommended in the prescribed size of Intake well only. There will not be any changes in the size of pump house. The layout of the pump sets shall suit to that shown in the respective pump house drawing.

4. CONSTRUCTION FEATURES:

Construction Features shall be generally as specified hereunder :

4.1 SUCTION HOUSING AND DISCHARGE OUTLET :

The housing and discharge outlets should be of ERW conforming to its relevant LS. and free from blow hole slage inclusions and other determined defects. Housing and casing should be hydraulically tested up to 1.5 times shut-off pressure.

4.2 Pump Casing

Pump Casing shall be of CI as per IS 210 Gr FG 260. & preferable with 1.5 to 2% NICK The internal surfaces shall be free of rough spots. The casing shall have centre line discharge.

4.3 IMPELLERS:

Impeller / Impellers should be of mixed flow design, ensuring required performance free of oavification . It shall be dynamic balanced. Impeller shall be made raw water having turbidity up to 20,000 P.P.M. and maximum particle size of 10 mm. The material of impeller shall be of **S.S. ASTM A743 CF8M**, semi open non clog type.

4.4 Pump Shaft.

The pump shaft shall be of steel (SS-410) as per manufacturer's standard. The shaft shall be of one piece construction.

4.3 SHAFT SLEEVE :

The single piece shaft shall be designed for 0.05 nun maximum deflection at stuffing box face under worst condition of shut-off head renewable shaft sleeves shall be provided. It shall have surface finishing of 0.75 Microns. The material of shaft sleeve shall be of SS AISI 431.

4.4 MECHANICAL SEAL:

The effective sealing shall be provided by high equality mechanical seal of appropriate design to prevent sandy and muddy water entrance into the motor. Suitably designed Axial thrust bearing should be provided.

The sliding materials of Rotating and stationary parts of Mech. Seal shall be suitably designed to suits the application either made of metal carbide

i.e. silencer carbide / Tungsten carbide, as per the manufactures own design.

2.3.4 Pump Bearings

Pump bearings shall be of the antifriction type. The bearings shall be able to take normal thrust loads due to unbalanced hydraulic loads on the impellers plus the weight of all rotating parts of the pumps. Pump bearings shall be designed with a minimum life of 40,000 hours. The bearings shall be grease lubricated for life, and shall be maintenance free. Fasteners shall be of SS as per AISI 304.

2.3.9 Fasteners.

All pump fasteners shall be in Stainless steel.

2.5 Electrical Specifications.

2.5.1 Submerged Motor.

The submerged motor shall be dry, squirrel cage type, suitable for three phase supply, continuous duty, with class 'F' insulation. Winding of the motor shall be impregnated by resin. Motor shall have integral cable entry port and cable entry shall be properly sealed.

The motor should incorporate aluminum die cast stator & rotors or copper bar to ensure better starting torque characteristics.

The enclosure for motor shall be IP-68. Each phase of the motors shall be provided with thermic switches or bimetallic electromechanical temperature detectors. The motor shall operate satisfactorily at all operating levels in wet well. Cooling jackets should be provided, if required.

2.5.2 Submerged Motor Cable.

Each pump shall be provided with 20 Mtrs. long submerged cables both for power and control cables, which shall be terminated in the pump starter panel or in the weather-proof junction box, if pump starter panel is situated beyond the length of the submerged cable.

2.5.3 Pump Starter Panel. : Must be provided by Bidder.

TESTS :

INSPECTION AND TESTING AT MANUFACTURER'S WORKS :

Inspection and testing at manufacturer's works before dispatch in the presence of RMC representative shall be carried out as specified below:

All required arrangement for the inspection & testing at Manufacturer's site should be manage by bidder.

All instruments and equipments required for such tests shall be provided by the vendor and the instruments shall be calibrated and certified by an approved independent testing authority. The testing data of the instruments shall not be

more than one month prior to the inspection. All the tests shall be carried out as per the relevant IS code. Before description of the tests to be carried out is as follows.

HYDROSTATIC TESTS:

All the pressure containing parts shall be tested with water at 1-1/2 times the maximum discharge pressure on the head characteristic curve or twice the rated pressure whichever is higher.

Unless otherwise stated in data sheet, the hydrostatic test shall be conducted for a minimum duration of 30 minutes.

MECHANICAL BALANCING:

STATIC BALANCING:

Major rotating components of the pumps like impeller, shaft etc. shall be individually statically balanced.

5.2.2 DYNAMIC BALANCING :

In addition to static balancing impeller and pump rotating assembly shall be dynamic balanced at rated speed of rotation.

5.3 PERFORMANCE TESTING:

Each pump shall be tested for its full operating range in accordance with the IS standard. Site conditions shall be stimulated as near as possible.

Test shall be carried out with minimum NPSH as available at site for rated discharge and maximum discharge. Each pump shall be tested at its rated speed with its own motor for its entire working range. Test shall preferably be conducted with actual drive capacity motor. During pump testing, readings to the extent possible, shall be taken to correspond to the net effective range specified in the data sheet and over its full working ranges from its closed valve condition to full valve open condition, Head, flow and overall efficiency characteristic curves shall be drawn. The curves produced shall be used to determine the capability of pump sets to meet the guaranteed performance at site.

- 5.4 Pumps shall be offered for visual inspection to the purchaser before dispatch. Components of pump and assembly shall not be painted before inspection.

5.5 MATERIAL TEST CERTIFICATE:

Material test certificates for the various pumps components shall be furnished for purchaser's approval.

2.5.1 Pumps.

Each assembled pump shall be shop tested by the manufacturer to determine the following characteristics within the operating range as specified.

Head capacity curve,

Brake horse power curve,

Efficiency curve,

Total power consumed,

Vibration, (bare pump on no load),

Balancing (impeller only).

All the tests shall be conducted in accordance with the relevant I.S. / manufacturer's testing standards.

Each pump performance test shall be documented by obtaining concurrent readings showing motor voltage and amperage, pump suction Head and pump discharge Head. Such readings shall be documented for at least 5 pumping conditions. One test shall be at the shut off Head.

2.5.2 Test Certificates.

In addition to the above tests/test certificates, manufacturer will also conduct and furnish test certificates for the following:

Hydrostatic test on casing,

Routine test certificates on motor including H.V .test and Meager test.

Material test certificates for major components certifying the grades of the materials used.

2.7 Codes & Standards Applicable

The design, manufacture and performance of the submerged sump pumps as specified in this specification shall comply with the requirements of the latest editions of applicable Codes and Standards, in particular the following :

IS : 8034 - Specification for submerged pump sets

IS : 210 - Specification for gray iron castings

IS ; 318 - Specification for leaded tin bronze ingots and castings

IS : 1570 - Schedule for wrought steels for general engineering

(Part-V) purposes : stainless and heat resisting steels

IS : 5120 - Technical requirements for rotodynamic special

purpose pumps

IS : 9137 - Code for acceptance tests for centrifugal mixed flow
and axial pumps - Class C

IS : 9283 - Specification for motors for submerged pump sets IS :
10572 - Methods of sampling for pumps.

Drawings, Data, Curves & manuals

The Bidder shall submit the following along with his formal proposal besides the different information plate required as indicated elsewhere in this specification.

Drawings

Outline drawings showing the principal dimensions, weight and location of the suction and discharge connections of the pumps offered.

Typical cross-section drawing showing various components of the pumps offered, materials of construction etc.

Pump foundation details along with all design loads, direction and points of application.

Drawing showing the lubrication system and sealing arrangement.

Data & Curves

Anticipated performance curves showing the following characteristics:

Capacity vs. head

Capacity vs. power

Capacity vs. efficiency

Capacity vs. NPSH required.

Speed vs. torque curve of the pump corresponding to recommended mode of pump starting superimposed on speed vs. torque curves of the drive unit corresponding to 80%, 90%, 100% of the rated voltage (applicable only in the cases of pumps with drive motor power rating of 100 KW and above).

Completely filled-in Technical Particulars (ANNEX – DATA SHEET) enclosed With this specification.

A comprehensive write-up or brochure on the details of manufacturing and testing facilities in the shop of the manufacturer.

Complete descriptive and illustrated and literature on the pump and accessories offered.

Any other data/information related to the erection and operation of the pump.

The successful Bidder shall furnish the following drawings/data for Purchaser/Engineer's approval after award of the Contract.

All data furnished during bidding stage including details furnished in above shall be treated as final and binding on the contraction. If, however, any change is essential during detail design stage for any improvement in the system, such changes shall be carried out only after containing Purchaser's/approval.

Final versions of all the drawings, as mentioned above.

Test reports, performance curves and other particulars as required by the applicable clauses of this specification.

Instruction Manuals

The Instruction Manuals shall present the following basic categories of information in a comprehensive manner prepared for use by operating and/or maintenance personnel:

Instruction for Erection.

Instruction for pre-commissioning check-up, operation, abnormal conditions, maintenance and repair.

Write-up on Controls and Interlocks provided.

Recommended inspection points and periods of inspection.

Schedule of preventive maintenance.

Ordering information for all replaceable parts.

Recommendation for type of lubricants, lubricating points, frequency of lubrication and lubricant changing schedule.

The information shall be organized in a logical and orderly sequence. A general description of the equipment including significant technical characteristics shall be included to familiarize operating and maintenance personnel with the equipment.

Necessary drawings and/or other illustrations shall be included or copies of appropriate final drawings shall be bound in the manual. Test, adjustment and calibration information, as appropriate, shall be included and shall be identified to the specific equipment. Safety and other warning notices and installation, maintenance and operating cautions shall be emphasized.

A parts list shall be included showing part nomenclature, manufacturer's part number and/or other information necessary for accurate identification and ordering of replacement parts.

Instruction Manuals shall be securely bound in durable folder.

If a standard manual is furnished covering more than the specific equipment purchased, the applicable model (or other identification) number, parts number and other information for the specific equipment purchased shall be clearly identified. Sectional drawing to suitable scale and characteristic curves for the particular equipment supplied must be included in the instruction Manual.

The Instruction Manual shall include the list of spare parts that have been procured along with the equipment. It shall also include list of all special tools and tackle furnished with complete drawings and instruction for use of such tool and tackle.

The Instruction Manual with need approval of Engineer in the same fashion as that for drawings.

2.8 Scope of supply and erection for Allied works .

Scope of supply will include but not restricted to-

Pump, motor with 30Mtrs. Long water proof submerged cable with Weatherproof junction box to terminate the above submerged cable and same cables to be extended up to MCC control panel & MCC room on a suitable size cable tray on outside the MCC room as well as above the sump slab suitable to (open to sky) atmosphere.

6.0 SPARE PARTS :

The contractor shall supply list of spares for commissioning and first 3-Months continuous operation and maintenance shall described in the schedule of spare parts and accessories and tools.

6.1 All spare parts shall be new, unused and strictly inter-chargeable with the parts for which they are intended to be replaced and shall be suitable packed after applying grease to prevent rusting whenever applicable for long storage under climatic conditions prevailing at the site.

7.0 TOOLS AND TACKLES:

7.1 A complete set of necessary special tools and test equipment shall be recommended by the contractor (you have not to supply but suggest only) or erection dismantling or for maintenance work to be carried out on any part of the pump sets during the life of pump set.

8.0 PROTECTION PACKING FOR TRANSPORTATION:

- 8.1 Prior to dispatch from manufacturers works all equipment shall be adequately protected by painting or by other approved means for whole period of transit, storage and erection, against corrosion and incidental damage, including the effects of vertn in, sunlight, rain high temperature, and humid atmospheres. The equipments shall be packed to withstand rough handling in transit and all package shall be suitable for storage including possible delay in transit.
10. SATISFACTORY WORKING REPORT OF SIMILAR PUMPS SHOULD BE ENCLOSED ALONG WITH THE OFFERS

11.0 BID EVALUATION & cost loading

Bid shall be evaluated on the following basis.

- 11.1 For every KW of differential energy consumed, pumps will be cost loaded. The factor for loading shall be Rs.5,000/- KW difference on each pump for the period of five years.
- 11.2 Bid shall be evaluate on percentage basis of total net bidding cost quoted by bidder.
- 11.3 All required documentary evidence & certificates must be physicaly attach with technical bid as mentioned in prequalifying criteria. Bidder are advised to contact concern officer if they have any doubt.

12.1 Each pump shall be provided with a name plate indicating the following minimum details.

- a) Design capacity
- b) Total head
- c) Speed
- d) Model number
- e)Manufacturer's serial number
- f) Weight of equipment
- g)Purchaser's tag number
- h) Impeller diameter
- i) Motor rating

& all other data which are necessary for information.

Part - B - Technical schedules

GENERAL SPECIFICATION FOR SUPPLY ERECTION, TESTING AND COMMISSIONING

Instruction will be given for installation of each pump looking to the position of water level in the sump.

1.0 SCOPE

This specification covers receiving, loading, un-loading, storing, erection, & testing and commissioning of all below mentioned mechanical / electrical equipment for satisfactory running of the pumping station at Railway Under Bridge on kalawad road, Near Mahila college.

1.1 Any other items not specified but required for completion of the plant. I/

2.0 RECEIVING AND STORING THE MECHANICAL EQUIPMENT

2.1

Contractor shall examine all the equipments received at site for any physical damage and to see that all the accessories as indicated in drawing or purchase order have been received at site. After visual inspection, contractor shall make report and submit the same to corporation. It is the responsibility of contractor to take necessary action on the same.

2.2 After delivery of the equipment, contractor shall see that all the equipments are properly stored and maintained as per manufacturer's instruction manual.

ERECTION OF EQUIPMENTS

General Requirements

- (a) All labor including supervision personnel and all consumable materials, tools and tackles as may be required and the necessary instruments for efficient and expeditious erection of the equipment and materials shall be arranged by contractor including necessary repairs and rectification work if any.
- (b) Cleaning and overhauling of equipment at site before erection in accordance with instruction of engineer-in-charge and manufacturer's recommendation shall be done by contractor.
- (c) Fabrication work incidental to erection like scaffolding, supports transportation etc. shall be done by contractor and after completion of job he will remove the same.
- (d) Keeping the site clean during the day to day working shall be contractor's responsibility.

- (e) The equipment shall be placed on respective foundation or support leveled and aligned with precision instruments, checked for proper clearance between moving and stationary parts wherever applicable. Grouting chipping and dressing of foundation is to be done by the contractor as required.

3.2 Erection of Pumping sets

- 3.2.1 Contractor shall arrange to inspect the foundations prepared for erection of pumps. Foundations shall be according to the supplier's drawing. Any modification/rectifications necessary for proper erection of pump sets shall be carried out by contractor.
- 3.2.2 Erection shall be carried out in presence of corporation representative as per the instruction given by Engineer-in-charge or as per manufacturer's manual. The contractor shall be responsible for setting up and erecting the pump sets to the line and level required.
- 3.2.3 Contractor shall depute sufficient number skilled and unskilled labor for expeditious erection of pump sets. All labor shall be conversant with the erection work.
- 3.2.4 Civil work related to mechanical and electrical work shall be carried out by other agency. All related civil work shall be executed as per the detailed/drawing furnished by the contractor. Contractor shall satisfy himself that the work executed by other agencies are exactly as per his requirements.
- 3.2.5 Pump and motor shall be oriented and leveled to the desired level by means of tapered metal wedge and packing pieces as per relevant piping drawing. The wedge and packing pieces shall be provided atleast 25mm clearance for grouting. After correct alignment and leveling the grout shall be poured. After setting grout, the foundation bolts shall be pulled up heard and the alignment and level should be rechecked.
- 3.2.6 Alignment shall be checked with dial indicator both axial and redial. The alignment will be rechecked after discharge piping have been connected with pump. Discharge piping' shall not transmit any load or strains on pumps. Alignment will be witnessed by Engineer-in-charge.
- 3.2.7 The approval of Engineer-in-charge shall in no way receive the contractor of his obligation under the contract. Contractor shall carry out rectification of installation work later found to be improperly carried out.
- 3.2.8 The central line of delivery & central line of header main cross each other at same level and all the two pumps to be join with one header main.

3.2.9 Pressure gauge shall be mounted with isolation and drain valve. 1/2" GI pipe shall be used for impulse.

3.2.10 Final connection for electrical cable & instruments cable shall be done by contractor.

4.0 TESTING AND COMMISSIONING

4.1 Hydraulic test

On completion of erection work, pumping system shall be hydraulic tested. Test pressure shall be 1.5 time maximum pressure or twice the design pressure which ever is higher to prove the soundness of joint and system. The duration of test shall be not less than 30 minutes.

4.2 All valves shall be operated throughout 100% of the travel and these should function without any trouble whatsoever.

4.3 All pumps shall be run with the water from shut off condition to valve wide open condition. Head developed will be checked from discharge pressure gauge reading, capacity may be checked from flow indicator where available otherwise from the volume of fluid handled and duration of test.

4.4 There should not be any undue vibration, leakage through gland, temperature rise, noise, flow pulsation etc.

4.5 Prior to commissioning the contractor shall check all items of electrical and shall draw out the electrical motor insulation as stipulated in the electrical specification. Any errors of manufacturing defect of any instrument shall be brought to the notice of Engineer-in-charge.

4.6 Contractor shall obtain written permission from the Engineer- in-charge for starting the pump set.

4.7 During commissioning and guarantee test run, it shall be the responsibility of the contractor to arrange required unskilled and skilled staff to operate and maintain the plant. Contractor shall arrange for all required commissioning spares and material to keep the plant running of 24 hours.

4.8 During this period, it shall be the responsibility of contractor to train the owner's operating staff to operate the plant efficiently.

4.9 Contractor shall demonstrate the operation of plant at design flow and pressure. All items of plant shall be in approved working condition.

5.0 GUARANTEE TEST RUN

5.1 The guarantee test run shall be for at least seven consecutive days. However, it can be reduced if necessary at the discretion of Engineer-in-charge.

5.2 The test shall be carried out during which guaranteed duties must be performed continuously by each pumping units for a minimum period of 12 hours, or as the Engineer-in-charge may determine.

5.3 The contractor shall provide all necessary instruments and gauge required for the test. All instruments shall be calibrated prior to their use. Contractor shall furnish necessary certificates of approved testing authority to this effect.

5.4 If test shows any deterioration in the performance of the plant of any item or the plant from the specified duties, the contractor shall rectify the same at no extra cost to corporation.

5.5 Handing over

On satisfaction of guarantee test run in respect of complete plant. The pumps shall be deemed to have handed over to the purchaser. Necessary certificates to this effect will be issued to the contractor as per provision of condition of contract. No certificate shall be issued for individual item of part of the plant.

GENERAL DATA SHEET FOR ZERO SUCTION SEWAGE TYPE SUBMERSIBLE PUMP

For Duty Point : 10 mtr Head / 100 M³/Hr & (5.6 K.W Approx)

Sr.	Description		
1.	Capacity of each Pump	:	100 M ³ /Hr
2.	Total Head from all causes	:	10mtr
3.	Pumps required		2 nos.
4.	Number of pumps running in parallel		None.
5.	Total duration of operation		Continuous
6.	Liquid to be pumped	:	Rain - Raw water direct from sump.
7.	Sp. gravity of liquid	:	1.05
8.	Place of Installation	:	Sump
9.	Type of pump required	:	Vertical Submerged zero suction type centrifugal pump sets with water cooled jacketed motor.
10.	Speed of the pump	:	< or =1450 RPM
11.	Size of Suction and Delivery	Suction	: Not required
		Delivery	: As per OEM Standard
12.	Type of Drive	:	<p>The submerged motor shall be dry, squirrel cage type, suitable for three phase supply, continuous duty, with class `F' insulation. Winding of the motor shall be impregnated by resin. Motor shall have integral cable entry port and cable entry shall be properly sealed.</p> <p>The pump motor should incorporate aluminum die cast stator & rotors or copper bar to ensure better starting torque characteristics. The enclosure for motor shall be IP-68. Each phase of the motors shall be provided with thermic switches or bimetallic electromechanical temperature detectors. The motor shall operate satisfactorily at all operating levels in wet well. Cooling jackets should be provided.</p>

13.	Pump Construction	<p>: Pump Casing</p> <p>Pump Casing shall be of CI as per IS 210 Gr FG 260. The internal surfaces shall be free of rough spots. The casing shall have centre line discharge. It shall have a suction strainer.</p> <p>Impellers</p> <p>Impellers shall be S.S. ASTM A743 CF8M. Impellers shall be multi vane open CF type.</p> <p>Pump Shaft.</p> <p>The pump shaft shall be hard chrome plated steel or alloy steel (SS-410) as per manufacturer's standard. The shaft shall be of one piece construction.</p> <p>Mechanical seals</p> <p>Wherever applicable, double Mechanical seal shall be provided to prevent pumped liquid entering into the motor winding. The seals shall be situated in oil chamber to ensure proper lubrication.</p> <p>The face combination of lower mechanical seal shall be Silicon Carbide Vs Silicon Carbide and upper mechanical seal shall be Carbon Vs Chrome Steel.</p> <p>Protective Coating.</p> <p>The pumps shall be anti corrosive epoxy painted.</p>						
14.	Type of Lubrication	<table border="1"> <tr> <td data-bbox="746 1417 1023 1487">Pump</td> <td data-bbox="1023 1417 1066 1487">:</td> <td data-bbox="1066 1417 1401 1487">Self water Lubricated</td> </tr> <tr> <td data-bbox="746 1487 1023 1556">Motor</td> <td data-bbox="1023 1487 1066 1556">:</td> <td data-bbox="1066 1487 1401 1556">Grease Lubricated</td> </tr> </table>	Pump	:	Self water Lubricated	Motor	:	Grease Lubricated
Pump	:	Self water Lubricated						
Motor	:	Grease Lubricated						
16.	Ceiling efficiency	<p>: 66% without negative tolerance (Energy improvement coating not to be considered) No Advantage shall be given if efficiency is quoted more than ceiling efficiency.</p>						
17.	Power Loading (Rs. Per excess KW per pump set)	<p>: Rs.5,000.00 / KW</p> <p>(Excess power consumed by motor at duty point)</p>						
18.	Material of construction	<table border="1"> <tr> <td data-bbox="746 1888 1023 1957">Casing</td> <td data-bbox="1023 1888 1066 1957">:</td> <td data-bbox="1066 1888 1401 1957">1.5 to 2 % Ni CI</td> </tr> <tr> <td data-bbox="746 1957 1023 2027">Pump shaft</td> <td data-bbox="1023 1957 1066 2027">:</td> <td data-bbox="1066 1957 1401 2027">S.S. 410</td> </tr> </table>	Casing	:	1.5 to 2 % Ni CI	Pump shaft	:	S.S. 410
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Pump shaft	:	S.S. 410						

		Impeller	:	S.S. ASTM A743 CF8M
		Wearing rings	:	Bronze (Zinc Free)
		Shaft sleeves	:	SS AISI 431.
		Gland	:	CI
		Other parts	:	CI
		Suction strainer	:	SS
19	Method of Motor starting	<p>Star / Delta, with required protections</p> <p>Starter panel must be provided by bidder.</p> <p>Starter Accessories must be of Siemens, ABB, L&T, Schnider.</p>		
20	Power cable	<p>As per OEM standard</p> <p>20 mtr long, PVC insulated three core flat submersible cable</p>		
21	Max size limit of pump set in Diameter	As per OEM standard		
22	Pump with stand	As per OEM standard		

GENERAL DATA SHEET FOR ZERO SUCTION SEWAGE TYPE SUBMERSIBLE PUMP

For Duty Point : 10 mtr Head / 360 M³/Hr & (15 K.W Approx)

Sr.	Description			
1.	Capacity of each Pump	:	360 M ³ /Hr	
2.	Total Head from all causes	:	10mtr	
3.	Pumps required		4 nos.	
4.	Number of pumps running in parallel		None.	
5.	Total duration of operation		Continuous	
6.	Liquid to be pumped	:	Rain - Raw water direct from sump.	
7.	Sp. gravity of liquid	:	1.05	

8.	Place of Installation	:	Sump						
9.	Type of pump required	:	Vertical Submerged zero suction type centrifugal pump sets with water cooled jacketed motor.						
10.	Speed of the pump	:	< or =960 RPM						
11.	Size of Suction and Delivery	:	<table border="1"> <tr> <td>Suction</td> <td>:</td> <td>Not required</td> </tr> <tr> <td>Delivery</td> <td>:</td> <td>As per OEM Standard</td> </tr> </table>	Suction	:	Not required	Delivery	:	As per OEM Standard
		Suction	:	Not required					
Delivery	:	As per OEM Standard							
12.	Type of Drive	:	<p>The submerged motor shall be dry, squirrel cage type, suitable for three phase supply, continuous duty, with class `F' insulation. Winding of the motor shall be impregnated by resin. Motor shall have integral cable entry port and cable entry shall be properly sealed.</p> <p>The pump motor should incorporate aluminum die cast stator & rotors or copper bar to ensure better starting torque characteristics. The enclosure for motor shall be IP-68. Each phase of the motors shall be provided with thermic switches or bimetallic electromechanical temperature detectors. The motor shall operate satisfactorily at all operating levels in wet well. Cooling jackets should be provided.</p>						
13.	Pump Construction	:	<p>Pump Casing</p> <p>Pump Casing shall be of CI as per IS 210 Gr FG 260. The internal surfaces shall be free of rough spots. The casing shall have centre line discharge. It shall have a suction strainer.</p> <p>Impellers</p> <p>Impellers shall be S.S. ASTM A743 CF8M. Impellers shall be multi vane open CF type.</p> <p>Pump Shaft.</p> <p>The pump shaft shall be hard chrome plated steel or alloy steel (SS-410) as per manufacturer's standard. The shaft shall be of one piece construction.</p>						

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18.	Material of construction	<table border="1"> <tr> <td>: Casing</td> <td>:</td> <td>1.5 to 2 % Ni CI</td> </tr> <tr> <td>Pump shaft</td> <td>:</td> <td>S.S. 410</td> </tr> <tr> <td>Impeller</td> <td>:</td> <td>S.S. ASTM A743 CF8M</td> </tr> <tr> <td>Wearing rings</td> <td>:</td> <td>Bronze (Zinc Free)</td> </tr> <tr> <td>Shaft sleeves</td> <td>:</td> <td>SS AISI 431.</td> </tr> <tr> <td>Gland</td> <td>:</td> <td>CI</td> </tr> <tr> <td>Other parts</td> <td>:</td> <td>CI</td> </tr> </table>	: Casing	:	1.5 to 2 % Ni CI	Pump shaft	:	S.S. 410	Impeller	:	S.S. ASTM A743 CF8M	Wearing rings	:	Bronze (Zinc Free)	Shaft sleeves	:	SS AISI 431.	Gland	:	CI	Other parts	:	CI
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20	Power cable	As per OEM standard																					

		20 mtr long, PVC insulated three core flat submersible cable
21	Max size limit of pump set in Diameter	As per OEM standard
22	Pump with stand	As per OEM standard

GENERAL DATA SHEET FOR ZERO SUCTION SEWAGE TYPE SUBMERSIBLE PUMP

For Duty Point : 10 mtr Head / 100 M³/Hr & (5.6 K.W Approx)

To be filled By Bidder

Sr.	Description (Brand Name & Model No) :		
1.	Capacity of each Pump	:	
2.	Total Head from all causes	:	
3.	Pumps required		
4.	Number of pumps running in parallel		
5.	Total duration of operation		
6.	Liquid to be pumped	:	
7.	Sp. gravity of liquid	:	
8.	Place of Installation	:	
9.	Type of pump required	:	
10.	Speed of the pump	:	
11.	Size of Suction and Delivery	:	
12.	Type of Drive	:	
13.	Pump Construction	:	
14.	Type of Lubrication	:	
16.	Ceiling efficiency	:	
17.	Power Loading (Rs. Per excess KW per pump set)	:	
18.	Material of construction	:	

19	Method of Motor starting			
20	Power cable			
21	Max size limit of pump set in Diameter			
22	Pump with stand			

GENERAL DATA SHEET FOR ZERO SUCTION SEWAGE TYPE SUBMERSIBLE PUMP

For Duty Point : 10 mtr Head / 360 M³/Hr & (15 K.W Approx)

To be filled By Bidder

Sr.	Description (Brand Name & Model No) :			
1.	Capacity of each Pump	:		
2.	Total Head from all causes	:		
3.	Pumps required			
4.	Number of pumps running in parallel			
5.	Total duration of operation			
6.	Liquid to be pumped	:		
7.	Sp. gravity of liquid	:		
8.	Place of Installation	:		
9.	Type of pump required	:		
10.	Speed of the pump	:		
11.	Size of Suction and Delivery	:		

		:			
12.	Type of Drive	:			
13.	Pump Construction	:			
14.	Type of Lubrication	:			
16.	Ceiling efficiency	:			
17.	Power Loading (Rs. Per excess KW per pump set)	:			
18.	Material of construction	:			
19	Method of Motor starting				
20	Power cable				
21	Max size limit of pump set in Diameter				
22	Pump with stand				

02. DIESEL GENERATORSET(ALONGWITHAMF/ AMFCUM SYNCHRONISING PANEL. AS APPLICABLE)

Supply, Installation, Testing and Commissioning of D.G. Set as per BOQ KVA rating at 0.8 PF

415 V \pm 1% and 50 \pm 1% Hz or better, 3 Phase, 4 Wire Diesel Generating Set complete with AMF or AMF cum synchronizing control panel, as applicable, and necessary controls and safety devices in panel confirming to relevant IS specification. The set must be continuous operating with a speed regulation of \pm 1% or better. Diesel engine shall be conforming to relevant ISS/BSS/ISO with latest amendments and as per latest CPCB norms.

DG set rating shall be for prime rating power (PRP) in accordance with ISO 3046.

DG Set shall meet all latest statutory / pollution control regulation requirement and applicable safety codes.

GENERATING SET:

- The generating set shall comprise diesel engine of adequate capacity directly coupled to an alternator mounted on a common base frame and with floor mounted AMF cum Synchronizing control panel as per details given below.
- DG set is required to function at places situated at an altitude up to 1000 M, ambient temperature up to 50°C and relative humidity up to 95%.
- D.G. set should be able to start by push button starting.
- The entire DG Set shall be with 2 year comprehensive warranty by manufacturer on the entire DG Set including Battery and Rubber Parts
- The controller of DG panel shall be with RS-485 port (Modbus protocol) for remote data monitoring and logging.

A. ENGINE:

- Diesel Engine shall have constant speed, water cooled, suitable for generating set application 1500 RPM, powered by multi cylinder, turbo charged after cooled, cold starting, heavy duty type rated in accordance with ISO 3046 / IS with latest amendments
- Engine should be preferably from the engine manufacturers who maintain quality – assurance to international standard of ISO 9001.
- The noise level should not be more than 75db at 1m. distance and engine exhaust smoke emission level shall comply latest emission norms of MOEF, GOI.
- Diesel Engine below 140 kVA rating shall have mechanical governing system and 140 kVA and above rating shall be with Electronic governing system.
- The engine should have automatic belt tensioning arrangement for battery charging alternator system.
- The engine should have facility for the indication of oil level in oil sump during running of the engine.
- The engine water circular pump should be directly driven by engine gear system. V-belt driven system will not be adopted / accepted.
- The engine should have equipped with the following accessories:
 1. Fly wheel to suit flexible coupling with guard
 2. Dry type air cleaner
 3. Corrosion inhibitor liquid

4. Fan blower type with guard
5. Radiator with guard
6. Water pump, centrifugal type, engine mounted
7. Fuel pump PT type, Fuel filter
8. Governor – Mechanical / Electronic type to meet test requirements as per ISO 8528
9. Fuel injection equipment
10. Exhaust silencer, Hospital Grade type with spark arrestor. Height of exhaust pipe above DG room height shall be as per pollution control regulation and supported with M S angle iron supports and stay wires. The exhaust pipe to be wrapped with asbestos rope till the end point.
11. Electric starting equipment comprising starting motor on 12/24 V DC supply.
12. Lub oil cooler, Lub oil pump, Lub oil filter
13. Turbo charger
14. Solid state potentiometer for increase or decrease of speed which can be wired with remote operation. (For DG with synchronizing only, not applicable for solo application)
15. Any other as required.

B. INSTRUMENT PANEL (Power Control Unit):

Micro-processor based power control unit for monitoring metering, protection and control system of D.G Set.

Engine	Alternator	Engine	Alternator	Operator
Metering	Metering	Protection	Protection	Interface
Speed of Engine in RPM	3 Phase voltage (phase to phase & phase to neutral)	Low lube oil pressure	Under Voltage	Manual stop/start
Lube oil pressure	3 Phase current	High water temperature	Over Voltage	Remote start / stop
Coolant temperature	Frequency	High / Low DC voltage	Under/Over frequency	---
Running hours	kVA	Weak Battery	Loss of sensing	---
---	---	Over-speed	Field overload	---

C.

ALTERNATOR:

Alternator shall be brushless, self-excited, Digital automatic voltage regulator, class 'H'

insulation, double bearing AC generator in accordance with IS:4722 with latest amendments with screen protected drip proof enclosure and damper winding on pole faces.

D. BATTERY:

Set of starting batteries consisting of required nos. of 12/24 V, and of required AH capacity

VRLA SMF (Valve regulated lead acid, sealed maintenance free) batteries connected in series with first charge of electrolyte with leads, lugs and terminals etc. duly installed on MS frame near the Engine.

E. BASE FRAME:

The Engine and Alternator should be assembled on a sturdy fabricated, adequately machined

base frame, made out of high quality MS channels. The base frame should be provided with lifting facilities and drilled foundation holes suitable for installation in concrete foundation with anti-vibration mounting. DG set is to be supplied with anti-vibration mountings pad suitable for the D.G. Set load.

F. FUEL TANK:

- Day fuel tank of adequate litres capacity with inlet and outlet pipe connections, filling cap, drain plug, level indicator and floor mounting pedestal along with hand operated fuel transfer pump and suitable hose.
- The fuel tank shall be inbuilt part of the Genset. The fuel tank shall be suitable for minimum. Fuel filling point shall be outer side of canopy with locking facility. 8 hours of operation of DG Set on full load.

G. AMF OR AMF CUM SYNCHRONISING CONTROL PANEL:

- Panel shall be fabricated from 14/16 SWG CRCA sheet and having CPRI test certificate for short circuit test..
- Current density of aluminum bus bar shall be max. 0.8 Amp / Sq.

Mm.

- Panel shall undergo anticorrosive treatment by 7 tank process and paint with 2 coats of base primer and then powder coated on outside and inside of panel.
- Panel shall be suitable for auto start/auto changeover functions.
- Panel shall be floor mounting, dust and vermin proof and consisting of the following accessories.
 - a) 4 pole ACB/ MCCB of 50 KA breaking capacity for alternator with overload and short circuit protection (for current rating <630A MCCB shall be provided and for current rating 630A & Above ACB shall be provided)
 - b) 0 – 500 Volts Digital Voltmeter with Selector switch
 - c) Digital Ammeter of suitable range with selector switch
 - d) Current transformers for metering and protection
 - e) Digital frequency meter
 - f) Trivector Meter of with provision of indicating Maximum demand in KVA
 - g) Earth fault relay
 - h) Power factor meter.
 - i) Battery Charger consisting of:
 - Transformer & rectifier with surge protection network
 - D C Voltmeter
 - D C Ammeter
 - Selector switch for Trickle, off & boost and current adjustment
 - j) Electronic AMF / AMF Cum Synchronizing Logic – (Nb2 Or Equivalent) to cover the following functions as a minimum:
 - Mains supply failure monitor
 - Supply failure timer
 - Restoration timer
 - 3 impulse Automatic engine Start / Stop attempts
 - Failure to start indication
 - Off / Manual / Auto / test Selectors
 - Power On / Off Switch
 - Synchronizing relay with load sharing arrangement with arrangement to change over MASTER (for AMF cum Synchronizing Panel)

Sr. No.	Condition	Indication	Trip Annunciation
1	Mains on	Yes	---
2	Generator on	Yes	---
3	Load on Mains	Yes	---
4	Load on generator	Yes	---
5	Low Lub Oil Pressure	Yes	Yes
6	High water temperature	Yes	Yes
7	Set fails to start (with alarm)	Yes	Yes

SPECIAL NOTES:

- Up to 70 kVA rating the engine can be Air cooled type and above 70 kVA rating engine shall be water cooled type.
- 70 kVA and above rating, the engine shall have turbo charged aspiration.
- Above 180 kVA rating reverse power relay shall be provided in the control panel.
- Above 500 kVA, the engine shall have turbo charger with after cooling.
- Above 1010 kVA rating, differential relay protection with necessary CTs and auxiliary relay shall be provided.
- The diesel engine generator set shall be with acoustic enclosure up to 1000 kVA.
- The diesel engine can be naturally aspirated, turbocharged type or turbocharged with after cooler arrangement type as per respective manufacturer's standards.
- The panel shall have microprocessor controller for AMF cum synchronizing function + alternator protections. Even if the engine has its own controller having AMF or AMF cum synchronizing features as inbuilt part, this controller should be used for taking care of alternator protections.

H. ACCEPTANCE TEST

Following tests shall be carried out for DG set by the vendor to the entire satisfaction of the purchaser at manufacturer's works

a) PHASE-I TEST :

- Insulation resistance test sectional and overall.
- Continuity test – sectional and overall.
- All instruments and relays shall be tested under normal operating conditions.
- High voltage test on power wiring of AMF cum Synchronizing panel and alternator.
- Visual examination to ensure that the DG set and accessories are provided and the finish and general appearance of the work are as per specification.
- Power frequency voltage test on AMF cum Synchronizing panel.
- Routine test for alternator as per IS 4722.
- Over speed test (1.1 times the rated speed for 2 min.)
- Transient response test for sudden application and rejection of loads of 25%, 50%, 75% & 100% of rated capacity.
- Wave form test (type test results are acceptable)
- Vibration, Noise level test.
- Dimensions and alignment.
- A no load test for a period of ½ hour continuously to see that the engine, alternator and other accessories are functioning normal.

b) PHASE – II TEST :

- On successful completion of the phase I tests a full load test will be carried out for 4 hours continuously by loading artificially.

- The overall efficiency of the DG Set at ¼ load, ½ load and full load shall be worked out.
- All necessary arrangements for testing under artificial load conditions such as cables, electrodes, load and consumable like diesel, lubricating oil etc. shall be provided by the vendor.

I. SPECIFIC REQUIREMENT

- Auto synchronizing panel shall be with Auto load sharing & load management facility.
- The vendor should be in possession of type and routine test certificate as per IS, issued by CPRI or any other testing laboratories and ISO 9001 certificate.
- On receipt of purchase order the vendor shall submit the following drawings for approval before manufacturing:
 - a) General arrangement drawing.
 - b) Foundation drawing.
 - c) Termination details of cable.
 - d) Power and Control wiring drawing of AMF / AMF cum Synchronizing control panel of DG Set.
 - e) Fabrication drawing of AMF / AMF cum Synchronizing control panel.
- The scope of work shall include all transportation of the DG sets and its accessories to the site of work with utmost care in handling. All loading and unloading arrangements with necessary plants / equipment and tools shall be the part of the scope and all required man power shall also be provided by the vendor for unloading / shifting of the DG set to the DG room and installing in position as required. Supply & laying of power and control cable between DG set & control panel is including in the scope of work.
- The vendor shall be responsible for all the safe custody of the DG sets and its accessories from the time of supply of DG sets, at site till installation, testing and commissioning and handling over the same to Client on satisfactory completion of work.
- The vendor shall co-ordinate with other agencies during the course of the installation testing and commissioning of the DG set and shall provide all supervision if any required to guide for safe commissioning of the DG Set.
- The installation work shall be started and completed immediately once the readiness of site is intimated to the vendor without any further delay.
- All minor civil works like opening in wall for exhaust pipe & fuel pipe etc. required for installation of DG sets shall be included in the scope of the vendor.
- The work of installation, testing and commissioning of DG set shall be done by qualified competent Engineer / Supervisors and all instructions shall be strictly followed for the completion of work with good workmanship as required and as per the IE rules and regulation of statutory body and other mandatory requirements.
- The vendor has to supply the following items free of cost on commissioning of the DG set.
 - Technical literature, control and power circuit diagram, manufacturer's manual of engine, alternator, Panel, etc. in number of sets as specified
 - List of essential spares,
 - one set of essential maintenance tools like grease gun, tool kit with Ratchet spanner set, torque wrenches, allen keys etc.
- The routine test of engine and alternator shall be arranged at manufacturer's premises by the supplier. Prior intimation shall be given regarding the readiness of engine and alternator for conducting the routine test as per relevant IS standards
- Load testing of the entire installation or load as available (min. 40% of DG rating preferred) at site, shall be carried out at site, on commissioning of the DG set.
- Vendor shall be responsible for obtaining necessary statutory approval for installation & operation of D.G set (Electrical Inspector, Central / Local Pollution Control Board, etc.).

TECHNICAL DATA SHEET FOR DIESEL GENERATOR SET		
NO.	PARTICULAR	DESCRIPTION
1	Rating	As per tender / BOQ
2	Qty.	As per tender / BOQ
3	RPM	1500
4	Voltage	415 V TPN at 45°C ambient, 0.8 P.F.(lag)
5	Voltage regulation	± 1% of rated voltage for any loads between no load to full load.
6	Voltage deep (sudden load application 0.0% to 100% at P.F. 0.8)	-5%, recovery time – 0.25 sec.
7	Frequency	50 Hz.
8	Prime mover	Diesel Engine
9	Service	Prime mover for generating set
10	Diesel Engine conforming	ISO 3046
11	Air Intake System	Air intake manifold Dry type air cleaner Vacuum indicator
12	Exhaust System	Turbo Charger Exhaust manifold Residential two nos. silencer
13	Lubricating System	Engine mounted lube oil pump Lubricating oil filter
14	Fuel System	PT fuel pump with electronic governor. Replaceable fuel filter
15	Starting System	24 V DC Electric Starter 24 VDC battery charging alternator
16	AMF or AMF cum Synchronizing Panel with required breaker & control	Yes, as specified in Tender / SOQ
17	D.G. Set Controller	Microprocessor based
18	Control Required	Off / Manual / Auto Control Switch Emergency Stop Manual Run / Stop Control Switch Panel Lamp / Lamp Test Control Switch Adjustment for time delay start / stop & Alternator voltage / Frequency.
19	Metering	
A	For Engine	Starting Battery Voltage Lube Oil Pressure Engine Coolant Temperature
B	Electrical Parameter	Current, Voltage, Frequency, kW, kWh, PF, kVA
20	Protection / Warning	
A	Engine Protection	Over Speed Shutdown

		Low Lube Oil Pressure Warning / Shut down. Low Coolant Level Warning / Shut down Low Coolant Temperature Warning Low & High Battery Voltage Warning. Dead Battery Shutdown Over Crank Shutdown Fail to Crank Shutdown
B	Alternator	Over Current Warning Shutdown Short Circuit Shutdown High / Low Voltage Shutdown Under/Over Frequency Shutdown/Warning Reverse Power (kVA &kVAr) Shutdown
21	Alternator Make	As per approved vendor list
A	Alternator Confirm to	BS : 2613 / IS : 4722
B	Enclosure	IP – 23
C	Insulation	Class ‘H’ with Temperature rise limited to Class ‘H’
22	Engine Speed Governing Control	To Provide Isochronous engine speed within \pm 0.25% for only steady state load from no load to full load.
23	Flywheel with housing	Yes
24	Vibration damper	Yes
25	Acoustic Hood	Yes
26	Coupling	Yes
27	Fuel tank	14 SWG Sheet metal with drain valve, Air vent, Inlet & Outlet Connection.
28	Fuel tank Capacity	As per tender specs. (max.990 ltr.)
29	Fuel tank installation	Floor mounting – outside the acoustic enclosure
30	Engine testing At shop At site	Yes
31	Standard Tool kits	Provided
32	Documents (Two sets each) Operation & Maintenance manual Parts catalogue / list Test Certificate of Diesel Engine Test Certificate of Alternator Test Certificate of D.G. Set	Yes

To filled By bidder

TECHNICAL DATA SHEET FOR DIESEL GENERATOR SET		
NO.	PARTICULAR	DESCRIPTION
1	Rating	
2	Qty.	
3	RPM	
4	Voltage	
5	Voltage regulation	
6	Voltage deep (sudden load application 0.0% to 100% at P.F. 0.8)	
7	Frequency	
8	Prime mover	
9	Service	
10	Diesel Engine conforming	
11	Air Intake System	
12	Exhaust System	
13	Lubricating System	
14	Fuel System	
15	Starting System	
16	AMF or AMF cum Synchronizing Panel with required breaker & control	
17	D.G. Set Controller	
18	Control Required	
19	Metering	
A	For Engine	
B	Electrical Parameter	

20	Protection / Warning	
A	Engine Protection	
B	Alternator	
21	Alternator Make	
A	Alternator Confirm to	
B	Enclosure	
C	Insulation	
22	Engine Speed Governing Control	
23	Flywheel with housing	
24	Vibration damper	
25	Acoustic Hood	
26	Coupling	
27	Fuel tank	
28	Fuel tank Capacity	
29	Fuel tank installation	
30	Engine testing At shop At site	
31	Standard Tool kits	
32	Documents (Two sets each) Operation & Maintenance manual Parts catalogue / list Test Certificate of Diesel Engine Test Certificate of Alternator Test Certificate of D.G. Set	

03. SPECIFICATIONS FOR OPERATION & MAINTENANCE WORK

1.0 ADMINISTRATIVE PROVISIONS

The following additional clauses shall apply only during the Five year of Operation and Maintenance period for entire system of sewage pumping station

1.1 DEFINITIONS

1.1.1 In this Agreement, the following words and expressions shall have the meanings hereby assigned to them, except where the context otherwise requires:

1. **“Contract”** shall mean the agreement between the Client and the Contractor along with all documents incorporated therein by reference and all documents incorporated by these Conditions of Contract.
2. **“Contractor’s Equipment”** shall mean all equipment, instruments, tools, machinery and other appliances and things of whatsoever nature required for the fulfillment of the Contract or of the Contractor’s Obligations, but not including those items which are intended to form, or which form part of the Facility.
3. **“Contractor's Obligations”** shall mean the obligation to execute the Project in its entirety and shall, without limitation, include the Contractor’s Operation and Maintenance.
4. **“Taking Over Certificate”** shall mean the certificate to be issued when the whole of the Works or any sections or parts of the Permanent works have been substantially completed and satisfactorily passed the tests on completion in accordance with the provisions of the Contract.
5. **“Date of Taking Over”** shall mean the date of issue of the “Taking Over Certificate” under the construction phase.
6. **“Defects Liability Period”** shall mean the Defects Liability Period of 5 (Five) year for all works commencing on and from Date of Taking Over during which the Contractor shall undertake the responsibilities, and have the liability for the facility (including Civil Works, mechanical and electrical installations including all allied works at sewage pumping station(s)).
7. **“Facility”** shall mean the entire system to be designed and constructed in accordance with the provisions hereof, including the buildings, structures ,ramps, pits, pipes, fencing, lighting, testing and analysis equipment, tools, mechanical, electrical as well as safety equipment, Sewage pumping machinery, supplies, instruments and inventory incorporated therein, as well as all open areas within the site, and including any additions, modifications, alterations, replacement and repairs as may be made thereto from time to time.
8. **“Authority”** shall mean any municipal corporation, authority or body exercising executive, legislative, judicial, regulatory or administrative functions, including, without limitation, any government / semi-government authority, agency, department, board, commission or instrumentality of Indian or any political subdivision thereof, court, tribunal, arbitrator or self-regulatory organisation.

9. **“Law”** shall mean and include all the provisions of all Indian statutes, regulations, ordinances, codes, official or other standards, administrative or other rules, zoning and other plans and restrictions, building and other permits, judgements awards and decrees of, or agreements with any Governmental, semi-Governmental or quasi-Governmental Authority, municipal corporation etc. as currently in effect or as may be in effect from time to time and /or as may be amended or supplemented from time to time.
10. **“Maintenance Standard”** shall mean the requirements for maintaining, repairing, and renewing the Facility :
 - a) As set forth in the O & M Manual;
 - b) Required pursuant to applicable Law;
 - c) As may be necessary for keeping the facility in a satisfactory condition such that the Facility will continuously, comply with the Operation Standard; and
 - d) As may be necessary to ensure that the Facility shall continuously be in an optimum condition and state in relation with the lifetime of the Facility.
11. **“ O & M Manual”** shall mean the final Manual for the Operation and Maintenance of the Facility to be prepared by the Contractor in accordance with the Bid Documents.
12. **“Operation and Maintenance Obligations”** shall mean the obligation of the Contractor pursuant to the Agreement to operate and maintain the Facility on and from the Date of Taking Over until the date of completion of this Agreement.
13. **“Operation and Maintenance Period”** shall mean the period starting on the Date of Taking Over and continuing for the term of the Agreement.
14. **“Operation and Maintenance Price”** shall mean the amount payable by the Client to the Contractor, for the fulfillment of the Contractor’s Operation and Maintenance Obligations.
15. **“Operation Standard”** shall mean :
 - a) The Performance Guarantees;
 - b) All applicable Laws;
 - c) All of the requirements, policies and procedures set forth in the O & M Manual d) All other operational requirements set forth in this Agreement.
16. **“Performance Guarantees”** shall mean the List of Guarantees offered/provided by the Contractor in its Bidder Submission pursuant of the Bid Documents.
17. **“Site”** shall mean that specific area specified in the Bid Documents and shall include any other places as may be specifically designated by the Client from time to time as forming part of the Site.

1.2 OBJECT OF CONTRACT

1.2.1 RISKS AND OBLIGATION OF THE CONTRACTOR

- 1.2.1.1 For the duration of COMPREHENSIVE O & M period, Contractor shall render and make available to the Client the following services:-
 - a) During testing & commissioning work, required Sewage and power will be the scope

of Contractor.

- b) Drawl of sewage from the inlet chamber of sewage pumping station and passing through screens and collected into wet well and from the wet well to sewage pumping and then transfer of sewage up to proposed point of location to join the sewage into large size sewer through rising main.
- c) Control and Operation of Sewage pumping Station with supply of all necessary spares, tools, consumables, lubricants, etc.
- d) Routine Maintenance of all Buildings, mechanical & electrical installations and equipment and areas; at the site of sewage pumping station
- e) Management of the sewage pumping station in administrative and financial operations connected to Sewage pumping management;
- f) Training of O & M staff of the Client.

1.2.1.2 The Contractor shall take full responsibility for the care of the Facility and materials and Sewage pumping from the date of issue of the Taking-Over Certificate for the whole of the Works, until the date of completion of the Operation and Maintenance period, when the responsibility for the care shall pass to the Client.

1.2.1.3 If any loss or damage happens to the Facility, or any part thereof, or materials or Sewage pumping for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in Sub-Clause 1.2, the Contractor shall, at his own cost, rectify such loss or damage so that the Facility conform in every respect with the provisions of the Contract to the satisfaction of the Client. The Contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligation.

1.2.1.4 In the case of a combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Client.

1.2.2 RISKS AND OBLIGATION OF THE CLIENT

1.2.2.1 For the duration of COMPREHENSIVE O & M Contract, Client will supply power only.

1.2.2.2 Provide free access to the site and the Sewage pumping and all its components free of charge.

1.2.2.3 Make payments to the Contractor according to the terms of this Contract as specified hereinafter.

1.2.2.4 If the Client shall carry out work on the Site with his own workmen he shall, in respect of such work :

a) Have full regard to the safety of all entitled to be upon the Site, and

b) Keep the Site in an orderly state appropriate to the avoidance of danger to such persons.

1.2.2.5 If the Client shall employ other contractors in the Site, he shall require them to have the same regard for and avoidance of danger.

1.3 COMMENCEMENT AND DURATION OF COMPREHENSIVE O & M CONTRACT.

1.3.1 The O&M Period shall commence upon issuing of Taking Over Certificate under the construction phase of the project and shall continue for a period of **Five (5) year, including defect liability period** as mentioned in the Conditions of Contract.

In event of any electrical and mechanical fault, the contractor has to attend the same immediately.

1.4 LIABILITY

1.4.1 The Contractor will not under any circumstances be liable for costs or loss of profit that the Client may incur as a result of the unavailability of the Sewage pumping on account of force major.

1.5 INSURANCE

1.5.1 The Contractor shall, without limiting his or the Client's obligations and responsibilities insure:

a) The Works, together with materials and Sewage pumping for incorporation therein, to the full replacement cost (term "cost" in this context shall include profit).

b) The Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

1.5.2 The insurance detailed above shall be in the joint names of the Contractor and the Client at the Contractor's cost and shall cover the Client and the Contractor against all loss or damage from whatsoever cause arising, other than as provided from the start of the operation and maintenance until the date of completion of operation and maintenance in respect of the Facility or any Section or part thereof as the case may be.

1.5.3 Any amounts not insured or not recovered from the insurers shall be borne by the Contractor in accordance with their responsibilities.

1.5.4 The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the

Client against all losses and claims in respect of

:

a) Death of or injury to any person,

or,

b) Loss of or damage to any property (other than the Works),

Which may arise out of in consequent of the Operation and Maintenance of the Facility and the remedying of any defects therein, and against all claims proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, subject to the exceptions defined above.

1.5.5 The "exceptions" referred to are:

- a) The permanent use or occupation of land by the Works, or any part thereof.
- b) The right of the Client to execute the Works, or any part thereof, on, over, under, in or through any land,
- c) Damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the contract, and
- d) Death of or injury to persons or loss of or damage to property resulting from any act or neglect if the Client, his agents, servants, or other contractors, not being employed by the Contractor or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereof or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury or damage as may be just and equitable having regard to the extent of the responsibility of the Client, his servants or agents or other contractors for the injury or damage.

- 1.5.6 The Client shall indemnify the Contractor against all claims, proceedings, damages; costs, charges, and expenses in respect of the matters referred to in the exceptions defined above.
- 1.5.7 The Contractor shall, without limiting his or the Client's obligations and responsibilities as above, issue in the joint names of the Contractor and the Client, against liabilities for death of or injury to any person or loss of or damage to any property (other than the Facility) arising out of the Operation and Maintenance of the project other than the exceptions defined.
- 1.5.8 The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Client as separate insurers.
- 1.5.9 The Client shall not liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Subcontractor, other than death or injury resulting from any act or default of the Client, his agents or servants. The Contractor shall indemnify and keep indemnified the Client against all such damages and compensation, other than those for which the Client is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.
- 1.5.10 The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Facility. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under this Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the Client is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Client, when required, such policy of insurance and receipt for the payment of the current premium.
- 1.5.11 In the event that the Contractor or the Client fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each will indemnify the other against all losses and claims arising from such failure according to the Contract Conditions.

1.6 STAFF

- 1.6.1 All Contractor's staff employed at the Sewage pumping at any time during the period covered by the present Contract will be provided by him. The Client is not liable for staff in any way and cannot be held responsible in the event of litigation of any sort between the Contractor and members of Sewage pumping staff or their representatives.
- 1.6.2 All decisions related to staff numbers and qualifications should be approved by the Client.
- 1.6.3 The Contractor undertakes to comply with applicable legislation and the code of labour law on matters of health, hygiene and safety, and shall assume responsibility for works required in the event of any change in applicable regulations.
- 1.6.4 The Contractor shall provide the following staff for the operation & maintenance :

(1) Pump Operator(skilled) - 1 no. per shift

During COMPREHENSIVE O & M period of 24 hours a day & 7 days a week, minimum one persons must be present on sewage pumping station.

1.7 PENALTY

Failing the execution of the operation, maintenance, servicing & comprehensive repairing work as per the tender document, the penalty will be applicable as per the mention in the tender. If the penalty occurs three times in the month, then the contract shall be liable to terminate, security deposit shall be forfeited and party shall be black listed in the RMC.

- 1.7.1 Due to negligence, forget ness, irresponsibility of contractor's staff, Pump sets and Machinery remains in non usable condition / idle for more than Two day due to fault condition / breakdown, then in such a case penalty as mention below shall be recoverable from contractor's O & M bill. If such incidents occur three or more times in one month, then RMC can terminate the O & M Service and Comprehensive repairing work contract.

Idleness up to 7 days : Rs. 400/- per day per pump

Idleness for 8 days & above : Rs. 700/- per day per pump

- 1.7.2 Spare pumps shall also be kept ready for operation. If spare pump is not ready for operation for work more than five days RMC will deduct Rs.500/-per day per pump as penalty from their bill.
- 1.7.4 If fault occurs in any electrical machineries that should be rectified or faulty parts should be replaced within 16 hours. Otherwise penalty of Rs.5000/- Per day will be deducted from the contractor's bill.
- 1.7.5 (a) If the Contractor does not recruit / deploy the 'Personnel' identified as per the schedule or remain absent then penalty / Liquidated Damages will be deducted as follows:

For Pump Operator : Rs.700/- per person per day.

(b) Force majeure means an event beyond the control of the contractor and not involving the

contractor's fault or negligence and not force able. Such events may include but are not restricted to, acts of the contractor either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.8 TERMINATION

1.8.1 Termination by the Client

The relevant clause of the General Conditions of Contract shall be applicable in this case.

1.8.2 Termination by the Contractor

The relevant clause of the General Conditions of Contract shall be applicable in this case.

1.9 FORCE MAJEURE

The relevant clause of the General Conditions of Contract shall be applicable in this case.

1.10 CONTRACT INTERPRETATION AND DIPUTES SETTLEMENT

1.10.1 The relevant clause for Amicable Settlement of Disputes of the General Conditions of Contract (Part I) shall apply.

1.11 ASSIGNMENT

1.11.1 The Contractor will not be entitled to sub-contract any part of his obligation to any third party without prior approval of the Client.

1.12 COMPLETION OF THE CONTRACT

1.12.1 On the date of Contract Completion or if the Contract is terminated, all the installations, works and equipment placed under the Contractor's responsibility shall be handed over to the Client, at no cost, in good working order, except for normal wear and tear. The Client may perform any inspections, tests or expert appraisals he shall consider necessary with a view to checking that the property is in good working order.

1.12.2 At the end of O&M period, the Contractor shall be entitled to receive an Operation and Maintenance Completion Certificate within twenty-one (21) days, of the completion of the Contract.

1.12.3 The delivery of such Completion Certificate will relieve the Contractor from his responsibility as regard to the Operation and Maintenance and confirm that the Contractor has fulfilled all of his obligations under the contract.

2.0 : TECHNICAL PROVISIONS

2.1 NOT USED

2.2 MAINTENANCE

- 2.2.1 The Contractor shall be responsible for routine as well as corrective (preventive) maintenance of hydraulic, mechanical, electrical equipment as well as miscellaneous equipment and instruments as described in Conditions of Contract for O&M.
- 2.2.2 The Contractor shall be responsible for carrying out regular servicing and lubrication of machines, complying with maintenance instructions as defined in the Operation and Maintenance manual, and ensuring that electromechanical equipment and motors operate correctly at all times.
- 2.2.3 The Contractor shall ensure that measurement systems operate correctly at all times.
- 2.2.4 The Contractor is responsible for the maintenance of the landscaped areas inside the client's Sewage pumping fences.
- 2.2.5 The Contractor shall be responsible for maintenance of inlet and screen chambers as well as wet and dry well, pumping machineries as well as mechanical & electrical installations / equipments.
- 2.2.6 During non operating period of six month i.e 1st December To 31st May every year during contract period of 05 year, Custody of pumping station shall remains with contractor & necessary arrangement shall be on the part of contractor without any extra cost.

Performance Standards

The Contractor will operate and maintain in a state of continuous operational readiness all Sewage pumping and systems to meet the incoming flow. It shall remain the Contractor's responsibility to ensure that sewage pumping systems are at all times able to operate to the maximum capacity of the installed duty Sewage pumping.

All Sewage pumping installation shall be operated within their designed limits. The Contractor shall operate the Sewage pumping strictly within these operating ranges and shall manage the operation of the sewage pumping to achieve optimum performance as far as possible.

2.3 CONSUMABLES AND UTILITIES SERVICES - SPARE PARTS - STORES

2.3.1 CONSUMABLES AND UTILITIES SERVICES

- 2.3.1.1 Unless stipulated otherwise elsewhere in the document, for the duration of the COMPREHENSIVE O & M period, the Contractor will be responsible for the supply and control of lubricants, spare parts, tools and consumable materials excluding electrical power, necessary for the continuous operation of the works.
- 2.3.1.2 The Contractor will manage the consumables and utilities services to ensure their most economic consumption and to minimize wastage.
- 2.3.1.3 Power required for COMPREHENSIVE O & M for 5 (Five) years will be supplied free of cost by the client from Power Supply Company. If any other energy required for COMPREHENSIVE O & M will have to be borne by contractor.

2.4 SPARE PARTS AND STORES

- 2.4.1 The store's inventory, the issuing and recording of spare parts will be the responsibility of the Contractor.
- 2.4.2 The Contractor is also responsible for providing required spare parts, tools and any other material required during year of operation and maintenance period by **free of cost**, and also bare the cost of storing and safeguarding also.
- 2.4.3 The Contractor will make all necessary arrangements to ensure the continuous supply of spare parts and material for the works as would ensure uninterrupted operation and shall be supplied free of cost.
- 2.4.4 Spare parts shall be supplied by the Contractor and the same will be used during Five year operation and maintenance period free of cost. Any spare parts not used during the O&M period shall be handed over to the Client at no cost.
- 2.4.5 The quality of spare parts, lubricants etc. required for COMPREHENSIVE O & M activities will be checked frequently by the Engineer-in-charge or his representative and the quality / brand of each will be approved. The material without approval shall not be allowed to be used and such material shall be immediately removed from the site in presence of the Client with a letter, addressed to the Engineer-in-charge as a confirmation.

2.5 MISCELLANEOUS EQUIPMENT

2.5.1 OFFICE

All the furniture and administrative office equipment etc. required shall be furnished by the Contractor. Costs of operating Administrative office and supplies shall be borne by the Contractor.

The Contractor shall take out subscriptions for standard telephone lines. Running cost for the telephone will be borne by the Contractor.

2.5.2 PUMPING STATION COMPLEX

Cost of operation and maintenance and housekeeping of sewage pumping station complex including domestic water supply and drainage, roads, gardens, electrical installations, etc. will be borne by the contractor.

2.6 INSPECTION

2.6.1 GENERAL PROVISIONS

- 2.6.1.1 The Client shall check the operation of the pumping or designate an organization of his choice to carry out inspections regularly. The Client or the organization appointed by him shall check that the Contractor is performing the tasks for which he is responsible with due diligence. The Contractor shall at his cost provide all the assistance the Client requires to complete these inspections.
- 2.6.1.2 Before any inspection, the Employer shall give prior written notice of one day to the Contractor, indicating the name(s) of the person(s) empowered to carry out such inspection in the name of the Client.

2.6.2 MEASUREMENT AND ANALYSIS

The Client has the right to perform any analysis or inspection he deems necessary. Before any inspection, the Client shall give a prior written notice of one day to the Contractor and shall cover the costs of such action.

2.7 PUMPING STATION COMPLEX VISITS

2.7.1 At the end of each month, or at the initiative of the Client, a visit shall be organized so that both parties can check the condition of the installations at the Sewage pumping complexes.

2.7.2 A report shall be drawn up to record the opinions of both parties. The Client reserves the right to call in equipment manufacturers or specialized technicians for these visits.

2.7.3 These visits shall provide an opportunity for examining maintenance programs and operating procedures and improvements requiring additional investments.

2.8 DOCUMENTS TO BE PROVIDED BY THE CONTRACTOR

2.8.1 OPERATION LOG BOOK

2.8.1.1 The Contractor shall keep a permanent record of Sewage pumping station operation (logbook). This log book shall be kept at the site and shall be presented on request to agents approved by the Client.

2.8.1.2 On a daily basis, the following information shall be recorded in the log book :

a) Reading from the different meters, indicators and recorders (including but not limited to consumption of energy, volume of sewage lifted, operating times of the different electro-mechanical & instrumentation equipments), voltage etc. as required.

b) Report of visits by persons other than those of the Client and the Contractor to the Facility.

2.8.1.3 The Contractor shall also indicate any significant modifications to the set-up characteristics of the installation, shut-downs, anomalies or incidents that have occurred with respect to operation.

ADDITIONAL CITY ENGINEER
Rajkot Municipal Corporation