

**ABC Municipal Council, XYZ**

**TENDER DOCUMENT**

**Name of Work**

**Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge & Septage treatment plant of capacity \_\_\_ m3/day at ABC Municipal Council, XYZ.**

**The work includes (i) Design, Construction and Commissioning of Fecal Sludge & Septage treatment plant (FSSTP) with all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for One Month and commissioning of the plant (ii) operation & maintenance of the complete works of FSSTP and allied works for a period of 3 years**

**Chief Officer,**

**ABC Municipal Council, XYZ**

Municipal Engineer

Chief Officer

Vice President

President

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## **Section-1 Invitation for Bid**

**SHORT TENDER NOTICE**  
**ABC MUNICIPAL COUNCIL, ABC**  
**E- TENDER NOTICE NO 2016-17: \_\_\_\_\_**

Online (E-Tender) tenders for turnkey project on Design, Construction, Commissioning, trial run and Operation and maintenance of Fecal Sludge & Septage treatment plant of capacity \_\_\_m<sup>3</sup>/day are invited by the Chief Officer, ABC Municipal Council, ABC. Phone No.\_\_\_\_\_ for the following Municipal Council Funded works from bidders having the experience of the following works. The detail information about Tender is available on \_\_\_\_\_

Sr. No	Name of Work	Earnest Money <sup>1</sup>	Time Limit	Cost of Blank tender forms
1	2	3	4	5
1.	<b>A turnkey project on design, construction, commissioning and operation of Fecal Sludge &amp; Septage treatment plant of capacity ___m<sup>3</sup>/day for ABC Municipal Council, ABC</b>	INR xxxxxx (Indian Rupees)	<p><b>Part A: 6months</b> Design, construction and commissioning of Fecal Sludge &amp; Septage treatment plant with all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for One month and commissioning of the plant to the satisfaction of the Engineer.</p> <p><b>Part B: 3 (three) years</b> Post Commissioning operation and maintenance of the Fecal Sludge &amp; Septage treatment plant for a period of 3 (three) years.</p>	INR xxxxx (Indian Rupees)

The detailed tender document is to be scanned and uploaded along with this E-Tender by the Bidder himself or his representative. The Bidder must also submit hard copies of technical documents mentioned in notice inviting tender (“**NIT**”) in a sealed envelope, on or before the date and time of Bid submission end date to the office of Chief Officer, ABC Municipal Council, District\_\_.

<sup>1</sup> Earnest Money is a refundable deposit made to the tenderer to ensure that the bid submitted is not fraudulent (e.g., dummy bid)

**DETAILED TENDER SCHEDULE  
ABC MUNICIPAL COUNCIL, ABC  
E- TENDER NOTICE NO:**

Sr. No.	Activities	Date	Time
1	Publishing Date	dd.mm.yyyy	hr:min
2	Document Sale Start Date	dd.mm.yyyy	hr:min
3	Document Sale End Date	dd.mm.yyyy	hr:min
4	Pre Bid Meeting Date	dd.mm.yyyy	hr:min
5	Bid Submission Start Date	dd.mm.yyyy	hr:min
6	Bid Submission End Date	dd.mm.yyyy	hr:min
7	Technical Bid Opening Date	dd.mm.yyyy	hr:min
8	Financial Bid Opening Date	dd.mm.yyyy	hr:min
9	Award of Tender	After GBM approved	

**Notes:**

1. Any tender application along with the financial bid, submitted without technical documents (as mentioned in the tender document), will be rejected/disqualified. Documents submitted by fax will not be accepted. All copies of the document should be duly attested in original. Experience certificate should be signed by an official at or above the rank of Superintending Engineer.
2. Cost of blank tender document & the necessary earnest money deposit (as given in Detail Tender Notice) will have to be deposited online through E-Payment in State Bank Of India & should be drawn in favour of the Chief Officer, ABC Municipal Council, ABC and copy of the online E-Payment receipt should be submitted in hardcopy in a sealed envelope along with the documents necessary for qualifications of Technical Bid, on or before the Time & Date of Bid Submission given as per given schedule.
3. Bid opening will be done in two stages i.e. Technical and Financial. In 1<sup>st</sup> stage, Technical Bid will be opened at the Office of Chief Officer, ABC Municipal Council. After scrutiny and evaluation of all the technical documents submitted and uploaded by Bidder, only those who qualify the technical bid are entitled to enter for 2<sup>nd</sup> stage i.e. Financial Bid, which will be held as per given schedule.
4. Detailed Tender Notice and Conditions can be seen on the government website:
5. Right to reject any or all tenders or to cancel the tender process at any time without assigning any reason is reserved by the competent authority of ABC Municipal Council, ABC.
6. Blank tender forms will not be issued and accepted by post or courier.
7. The offer of the Bidder will be valid for 120 (one hundred and twenty) days from date of opening of tender.
8. For civil works, the selected bidder / contractor has to be registered contractor with Public works Department, XYZ and in case if the bidder/contractor is not registered then the selected bidder/contractor shall have to register within one month after opening of financial bid and then only tender would be awarded.

9. The successful bidder will have to pay stamp duty as mentioned in Detailed Tender Notice.
10. This tender document is not an agreement and is neither an offer nor invitation to the prospective bidders or any other person. The purpose of this tender document is to provide interested parties with information that may be useful to them in making their bids pursuant to this tender document. This tender document includes statements, which reflect various assumptions and assessments arrived at by the Office of Chief Officer, ABC Municipal Council, District – D in relation to the project. Such assumptions, assessments and statements do not purport to contain all the information that each bidder may require. This tender document may not be appropriate for all persons, and it is not possible for the Office of Chief Officer, ABC Municipal Council, District - D, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this tender document. The assumptions, assessments, statements and information contained in the tender document and any accompanying documents may not be complete, accurate, adequate or correct. Each bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this tender document and obtain independent advice from appropriate sources.
11. ABC council, its employees and advisors make no representation or warranty and shall have no liability (for any cost, damage, loss or expense which may arise from or is incurred or suffered on account of anything contained in this tender document or otherwise, including but not limited to the accuracy, adequacy, correctness, completeness or reliability of the tender document and any assessment, assumption, statement or information contained therein or deemed to be part of this tender document or arising in any way with eligibility of Bidder for participation in the bidding process) towards any applicable or Bidder or a third person, under any law, statute, rule regulation or tort law, principles of restitution or unjust enrichment or otherwise.
12. ABC council also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statement contained in this tender document.
13. Submission of a proposal in response to this notice shall be deemed to have been done after careful study and examination of this document with full understanding of its terms, conditions and implications.

**Chief Officer**  
**ABC Municipal Council,**  
**XYZ**

## **Section-2 Instruction to Bidders**

## Section-2 Instruction to Bidders

### A. General

#### 1. Scope of Work:

- a. The Bidder's scope of work shall include (i) design, construction, testing and commissioning of Fecal Sludge & Septage treatment plant ("**Fecal Sludge & Septage treatment plant**" or "**FSSTP**") of installed capacity of \_\_\_ m<sup>3</sup>/day with all necessary appurtenant structures and allied works etc. including all necessary approvals from various government departments etc. including testing, trial run for 1(one) month of the Plant to the satisfaction of the Engineer; and (ii) operation and maintenance ("**O&M**") after successful commissioning and testing of the complete works ("**Project**") of Fecal Sludge & Septage treatment plant, for a period of 3 (three) years.
- b. ABC Municipal Council ("**ABC**") will make available the land required for the Fecal Sludge & Septage treatment plant and its ancillary works as per the land availability given in tender document. The selected bidder shall adopt the most appropriate and techno economically feasible treatment process technology and shall design the Fecal Sludge & Septage treatment plant ensuring the effluent quality which complies with the prevailing effluent discharge and disposal standards by the appropriate authority as may be applicable as per the law.

#### 2. Eligible Bidders:

The Bidders must meet the following minimum pre-qualification criteria:

##### a. Financial Pre-qualification:

Bidder should have average annual turnover in the last 3 (three) years ending financial year on 2015-16 of not less than INR xxxxxxxx (Indian rupees). For proof of financial status audited balance sheets and annual reports including turnover for previous 3 (three) years is to be enclosed.

##### b. Technical Pre-qualification:

- i) The Bidder should have been in the business of designing/ construction of sewage/Fecal Sludge & Septage treatment plant for at least 3 (three) years.
- ii) Bidders should have designed, constructed and commissioned at least 1 (one) work of sewage/Fecal Sludge & Septage treatment plants, which is in operational condition, and achieved the desired effluent standard before the date of notice inviting this tender in any location in India.
- iii) Bidders should have successful experience in operating and maintaining a sewage/Fecal Sludge & Septage treatment plant of 30 m<sup>3</sup> per day or more for 1 year in the last 5 years
- iv) The Bidders should adhere to the technical specifications provided in the tender documents and submit the technical design for proposed Plant. If the Bidder fails to submit a design for proposed Plant or the design submitted is not found suitable in evaluation, the bid will be rejected.



- v) Joint venture with technology provider and contractor firm will be allowed.  
Note: For the purpose of this clause, “**Similar Projects**” is defined as the works of construction of Sewage Treatment Plant/Fecal Sludge & Septage treatment plant/Common Effluent Treatment Plants (including package unit) with biological treatment process in the Government / Semi-Government/private sector with documentary proof. For this purpose testimonials etc., from clients for whom the applicant had executed similar type of works will have to be submitted by the tenderer and where necessary reference will be made to previous clients.
- vi) Experience in the private sector shall be considered. Information regarding Bidders experience shall cover the works carried out by the applicant in his own name only and not as a sub-contractor.

## **B. Content of Bidding Document**

### **3. Sections of Bidding Document**

The nature of the services, the Site and the Plant that is to be designed, built, operated and maintained by the Bidder, the procedures that are to be followed during the bidding process and the contract terms and technical requirements are prescribed in the Bidding Documents. The “**Bidding Documents**” consist of:

#### **1. Volume- I**

Section-1 Invitation for Bid

Section-2 Instruction to Bidders

Section-3 Qualification criteria and Bid Evaluation Framework

Section-4 Bidding Forms

Section-5 Conditions of Contract

Section-6 Scope of Work

Section-7 Price Bid and Terms of Payment

Section-8 Technical Specifications

### **4. Issue of Blank Tender Form**

- a. Blank tender documents will not be sold by this office. Interested Bidders have to download tender documents from the website\_\_\_\_\_. Blank tender form will not be sent by post.
- b. The blank tender document can be downloaded from dd/mm/yyyy onwards to dd/mm/yyyy till 18:00 hrs IST.

### **5. Clarification of Bidding Documents**

- a. A prospective Bidder requiring any clarification on the Bidding Documents may notify the ABC in writing by mail, courier, fax or hand delivery at the ABC office address. Any clarification must be submitted within 15 days of the tender opening date.
- b. For the pre-bid meeting, clarifications should be submitted at least 3 days in advance to be addressed during the course of the meeting
- c. The ABC will respond to the queries of the Bidders (if required) in form of corrigendum and will be uploaded on the website\_\_\_\_\_.

**6. Site Visit**

- a. Each Bidder is advised to visit and inspect the Site of the proposed Fecal Sludge & Septage treatment plant and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into the Contract. The costs of visiting the Site and obtaining such information shall be at the Bidder's own expense.

**7. Pre-Bid meeting**

- a. A pre-Bid meeting is open to all prospective bidders and will be held at such date, time and venue as given in detailed schedule at the office of the Chief Officer, ABC Municipal Council, ABC. The prospective bidders will have an opportunity to obtain clarifications regarding the work and the tender conditions.

- 8. Right to modify the tender documents:** ABC reserves the right to revise or to amend the Contract documents prior to the date of submission of tender or the receipt of the tender or to extend the date said above. Such revisions, amendments or extension if any shall be communicated to all concerned in the form of corrigendum published at the website \_\_\_\_\_ or by notice in the press as may be considered suitably and shall be binding on all bidders. To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the ABC may, if required, extend the deadline for submission of bids.

## C. Preparation of BIDS

- 9. Cost of Bidding:** The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the ABC shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 10. Language of Bid:** The Bid prepared by the Bidder, all correspondence and documents related to the Bid exchanged by the Bidder and ABC and the bidding process shall be in English.
- 11. Documents Comprising the Bid**
- a. The date and time for online submission of bids (Technical and Financial) shall strictly apply in all cases, unless specified otherwise by the ABC. The Bidders should ensure that their Bid is prepared online before the expiry of the scheduled date and time and is submitted online before the expiry of the scheduled date and offers not submitted online by such time will be rejected.
  - b. If for any reason, an interested bidder is unable to complete any of the online stages during the tender cycle, the ABC will not be responsible and any grievance regarding the same will not be accepted.
  - c. The documents are to be scanned and uploaded along with E-Tender by the bidder himself or his representative and hard copies of these must be submitted in a sealed envelope on or before the date and time of Bid Submission end date, to the office of Chief Officer, ABC. Cost of blank tender document & the necessary EMD (as given in Detail Tender Notice) will have to be deposited online through E-Payment in State Bank Of India & should be drawn in favour of the Chief Officer, ABC Municipal Council, ABC and copy of the online E-Payment receipt should be submitted in hardcopy in a sealed envelope along with the documents necessary for qualifications of Technical Bid, on or before the Time & Date of Bid Submission given as per given schedule.
  - d. The Bid should be submitted online on the website \_\_\_\_\_ with their digital signature.
  - e. The hardcopy of Bid is to be submitted in two envelopes comprise of :  
Envelope-1: The copy of online payment receipt of EMD and tender fees,  
Envelope-2: Technical Bid containing scanned copy of all necessary documents as required for qualification, Bid forms, detailed technical proposal as mentioned in the bid document.

Both envelopes shall be enclosed together in an outer single envelope. Bidder must submit the price bid online only. The hardcopy has to be submitted in a sealed envelopes on or before the Time & Date of Bid Submission given as per given schedule.

- f. The Technical Bid shall comprise the following:
- i. Letter of Technical Bid;
  - ii. Bid security or Bid securing declaration;
  - iii. written confirmation authorizing the signatory of the Bid to commit the Bidder;
  - iv. documentary evidence in accordance with bidding form establishing the Bidder's qualifications to perform the Contract;
  - v. Technical Proposal; and
  - vi. Any other document required in the Bidding Documents.
- The bidder whose tender is accepted will have to give an under taking in writing to the effect that he/ they will pay the labourers engaged on work, the wages as per minimum wages Act 1948 or as and when revised by the Government, applied to the Zone in which the work lies and act accordingly. Template provided in the section 4.
  - The Bidder shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Contract Labour (Regulation and Abolition) Act, 1970, and any modification thereof or any law relating thereof and rules made there under from time to time. Template provided in the section 4.

## **12. Technical Section: Part I – Technical and Staffing Information**

- a. The Bidder, while making its technical proposal shall consider the following aspects.
- i. The Bidders will be free to offer Fecal Sludge & Septage treatment plant based on a technology of their choice and indicate in their bid the actual land requirement for setting up treatment facility as offered by them. The status of availability of the land is specified in the Annexure 3.
  - ii. The location for disposal of treated septage and waste water shall be as specified by Engineer-In-Charge or Chief Officer of ABC.
  - iii. The land that will be required for Fecal Sludge & Septage treatment plant, roads, drains and other appurtenant structures shall be consider for technical bid by the Bidder.
- b. The Bidder shall design and construct the Fecal Sludge & Septage treatment plant with installed capacity as indicated in bid document.
- c. The lowest bidder shall have to obtain all necessary approvals for the proposal from designated government departments before start of execution of the project. All charges, fees for such approvals and processes shall be borne by the Bidder.
- d. Part-I of the Technical Section of the Bid shall consist of the following sub-parts in the following order:
- i. An executive summary of the Technical Proposal;

- ii. A detailed design-construction-commissioning work plan shall divide in following section:
- (A) A well-defined proposal for the treatment process technology proposed by the Bidder. The Bidder's design should aim at optimizing the land requirement;
  - (B) A section titled "Drawings" which consists of conceptual drawings that are sufficiently detailed to communicate the Bidder's design intent for all components proposed for Fecal Sludge & Septage treatment plant and allied services. The conceptual drawings shall include the following:
    - a site plan showing the location of the Fecal Sludge & Septage treatment plant area and limits to the bidders construction activities along with the land required for the total planned area of the Fecal Sludge & Septage treatment plant.
    - a site plan showing all proposed works of the Fecal Sludge & Septage treatment plant.
  - (C) Show detailed process design and calculations to prove that it can meet the standards, parameters and range including solids content, end product solids parameters and effluent liquid parameters;
  - (D) Design Basis: Process flow-chart with design values for inputs and outputs at each Stage;
  - (E) Process description accompanying process flow-chart above with:
    - a. Dimensioned layout of treatment components within site plan;
    - b. Energy consumption.
  - (F) Anticipated life (in years) for components including civil, mechanical and electrical, making up the treatment plant and any machinery installed (identify replacements that would be necessitated over a life period of 15 years);
  - (G) Schedule of percentage cost breakup as per annexure 5
  - (H) Schedule of key replacement/refurbishment requirements for each component. Details should cover replacement years and estimated cost, over the lifecycle period of 15 years as per annexure 6
  - (I) Identification of Risks and Mitigation Plan - Identification of hazards - ability of system to handle anticipated shocks, e.g. Local flooding, soil-subsidence, power outage, process hazard if chemical or biological materials are used, etc.; and measures for mitigating hazard risks;
  - (J) The Bidder's proposed approach and methodology on the disposal of the treated effluent and treated septage including its reuse for land irrigation and / or industrial and commercial purposes;
  - (K) a detailed narrative in support of the conceptual drawings setting out the Bidder's plan for compliance with the general conditions to design-construction-commissioning and as per the Technical Specifications as per section-8, to include construction quality assurance and control;
  - (L) a detailed program and schedule setting out the proposed sequence of works to be undertaken, including estimated start date, finish date and time allocations for individual units of the works, proposed resources to be allocated and the identification of all major milestones, including the submission of schematic design documents, design development documents, the Design-Build Documents, obtaining all necessary approvals for the proposal from designated government

- departments and the commissioning of individual units of the FSSTP; and
- (M) An itemized list of the principal codes of practice and standards proposed to be used for the design-build services; and a section specifying the power consumption for the O&M of the Fecal Sludge & Septage treatment plant on an annual basis. The Bidder shall further provide the breakup of electricity consumption in various facilities in the Fecal Sludge & Septage treatment plant on an annual basis. The Bidder shall provide the total estimated consumption connected load in KW, maximum power demand, average energy consumption in Kwh per day with full load up to the installed capacity of the Fecal Sludge & Septage treatment plant, estimated power factor, any proposals for improving efficiency in terms of lower power consumption.
  - iii. A detailed work plan (the **“Operations Work Plan”**) setting out the manner in which the Bidder proposes to carry out the operation of the Fecal Sludge & Septage treatment plant as set out in the Contract(the **“Operations Services”**) and meet the operating technical standards in accordance with the scope of work to the General Conditions. The Operations Work Plan shall be divided into the following sections:
    - (A) a section titled ‘Operations Start-Up’ which provides an outline, contents and overview of the Bidder’s proposed plans and programs for operational start-up of the Fecal Sludge & Septage treatment plant and
    - (B) a section titled ‘Operation and Maintenance Plan’ which provides an outline, contents and overview of the Bidder’s proposed plans and programs for Fecal Sludge & Septage treatment plant operation,;
    - (C) Plan for preparation of Operation Manual
  - iv. A detailed staffing plan (the **“Staffing Plan”**) setting out the Bidder’s proposed staffing arrangements for the carrying out of the Design-Build and Operations Services. The Staffing Plan shall contain a section titled, **“Curriculum Vitae”** which contains the signed curriculum vitae for each of the key staff, in the format set out in bidding form in section-4.

### 13. Technical Section: Part II – Bid Security

- a. In Part II of the Technical Section of its Bid, the Bidder shall furnish, as part of its Bid, a Bid security in form of Earnest Money Deposit (**“EMD”**) in the amount and currency stipulated in the bid document.  
The bid security of a joint venture must define as **“Bidder”** as all Joint Venture Partners and list them in the following manner:

“a Joint Venture consisting of „.....“, „.....“ and „.....“.

- b. **Details on Earnest Money Deposit (EMD)**

- i. The EMD value is INR xxxxxx (Indian Rupees).
- ii. The Earnest Money Deposit should be deposited online through E-Payment in State Bank of India & should be drawn in favour of the Chief Officer, ABC Municipal Council, ABC.

- iii. The EMD shall be refunded in the case of tenderers whose tenders are not accepted within 120 (one hundred and twenty) days from the date of opening of the financial bid, except for the first three lowest offers. EMD of other two lowest bidders other than the successful bidder will be refunded after completion of Contract documents. EMD of the successful bidder will be refunded after payment of Security Deposit by the successful bidder.
- iv. Certificate of exemption from payment of earnest money deposit issued by the Public Works Department (“**PWD**”) or any other authorities will not be accepted instead of earnest money deposit.
- c. Any Bid not accompanied by an adequate EMD shall be rejected by the ABC as being non-responsive. The EMD of a joint venture must be in the name of all of the participants in the joint venture submitting the Bid or the name of the joint venture if the joint venture is an incorporated company.
- d. The EMD shall be non-transferable.
- e. The EMD shall be forfeited:
  - i. If a bidder withdraws his bid or increases his quoted prices during the period of bid validity or its extended period, if any.
  - ii. If the successful bidder fails to sign the Contract within specified time in accordance with the format given in the tender document.
  - iii. If during the bid process, a bidder indulges in any such deliberate act as would jeopardise or unnecessarily delay the process of bid evaluation and finalisation. The decision of the ABC regarding forfeiture of the EMD shall be final and binding upon bidders.
  - iv. If during the bid process, any information is found false/fraudulent/mala fide, then the ABC shall reject the bid and, if necessary, initiate appropriate action.
- f. Any proposal not submitted in accordance with the procedure and formats prescribed and adhering to the timeline shall be treated as a non-conforming proposal.

#### **14. Technical Section: Part III- Joint Venture Documents and Requirements**

- a. Each joint venture bidder shall submit, as per format given in section 4 o of Bid document, a written commitment, in the form of a letter duly executed by an authorized officer of each joint venture participant, which,
  - i. confirms each joint venture participants commitment to the joint venture and acceptance of the joint venture arrangements described in the Bid in accordance with bidding form;
  - ii. confirms each joint venture participants willingness to provide a joint guarantee to the ABC to underwrite the performance of the joint venture in respect of the Contract; and
  - iii. Identifies which joint venture participant,



1. Will assume the leading role on behalf of the other joint venture participants; and
  2. Will have the authority to commit all joint venture participants.
- b. If the successful bidder is a joint venture bidder and the Contract is awarded to the successful bidder each member of the joint venture consortium shall sign and execute the contract with the ABC and shall be jointly and severally responsible to the ABC for the performance of the Contract at the time of bid submission. The successful joint venture bidder will provide a signed, sealed and notarized joint venture consortium agreement specifying the roles, responsibility, and financial stake of each members of the joint venture and incorporation documents of the joint venture company (if required).
- c. If the Contract is executed between the ABC and a joint venture consortium, a performance security, in the amount and in the same form and substance as set out in contract, will be required from the joint venture consortium. The shareholders of the joint venture consortium and the shareholders parent companies may, in the sole discretion of the ABC, be required to submit performance securities/ guarantees in the same form and substance as set out in contract, which shall be in addition to the performance security of the joint venture consortium. The joint venture consortium, the shareholders of the joint venture consortium and the shareholder's parent companies shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The ABC may, in its sole discretion, also require the shareholders or the parent companies of the shareholders, or both, to be parties to the Contract and to retain equity in the joint venture consortium at a level specified in the Contract.
- d. A copy of the joint venture agreement entered into by the partners ("**Joint Venture Participants**") shall be submitted with the bid. Alternatively, a Letter of Intent as per format provided under bidding form section to execute a joint venture agreement in the event of a successful bid shall be signed by all the Joint Venture Participants and submitted with the bid together with a copy of the proposed agreement, clearly indicating the objectives of the joint venture, the proposed management structure, the contribution of each participant to the joint venture operations, the commitment of the participants to joint and several liability for performance of the contract, recourse or sanctions within the joint venture in the event of default or withdrawal of any participant, and arrangements for providing the required indemnities.

#### **15. Technical Section-Part-IV: Power of Attorney**

Each Bidder shall provide, as part of the technical section of its Bid, a written power of attorney to the ABC in accordance with format given in bidding form section.

## 16. Financial Section – Bid Prices

- a. Bidders shall quote their total cost for design, Construction and Commissioning of Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for One Month and commissioning of the plant to the satisfaction of the Engineer and O&M of the Fecal Sludge & Septage treatment plant for a post commissioning period of 3(three) years, on a “single responsibility” basis such that the total Bid Price covers all of the Bidder’s obligations mentioned in or to be reasonably inferred from the Bidding Documents in respect of the design, construction, commissioning, operation and maintenance including procurement etc., and if any delivery, construction, installation and completion of the Plant and the performance of the services as set out in the Contract. This includes all requirements under the Bidder’s responsibilities for testing, pre-commissioning and commissioning of the Fecal Sludge & Septage treatment plant, the acquisition of all permits, approvals and licenses, the design, building, operation, maintenance and training services, and such other items and services as may be specified in the Bidding Documents, all in accordance with the requirements of the General Conditions of the Contract.
- b. For the purpose of submitting Bids, bidders should note that the Bid price shall include all kinds of taxes, duties, levies or charges.
- c. In the Price Schedules, bidders shall give the required details and a breakdown of their prices as follows:
  - i. The cost of design, construction and commissioning Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer including, fixed price for all labour, construction, (Design-Build), Temporary Works, energy cost, consumables and all matters and things of whatsoever nature, including preparation of the Design-Build Documents and carrying out construction, as necessary for the proper execution & commissioning of the Design-Build Services in accordance with the Contract shall be quoted by Bidder under Part A.
  - ii. The Bidder has to operate and maintain the Fecal Sludge & Septage treatment plant for subsequent 3 (three) years after commissioning for which the entire cost of power, labour, consumables, maintenance of all civil, mechanical and electrical units including fixed price for all labour, and variable price for energy cost to run the plant, maintenance of equipment, all consumables and all matters and things of whatever nature, including the preparation and implementation of plans, programs and reports, and carrying out O&M services, training, customer service and financial management services, as necessary for the proper execution of the Operations Services in accordance with the Contract shall be borne by the Bidder and shall quote his price under Part B of the Contract. The Bidder shall have the right to use and the right to sell of treated

water and treated septage from the Septage Treatment Plant. Bidder shall have to report details of the sale of treated septage to the ABC.

- d. Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and shall not be subject to change on any account. A Bid submitted with an adjustable price quotation shall be treated as non-responsive and shall be rejected.
- e. Bidders are strongly encouraged to review General Conditions of the Contract and the terms and procedures of payment prior to completing their Price Schedules and submitting their Bid Prices.

**17. Financial section- Bid Currencies:** Bidders may quote their price in **Indian Rupees only**.

**18. Payments for the Works and Billing**

- a. **Payment:** The rates quoted by the Bidder will be considered for completed work and will include all costs including labour, material and others as needed. No claims for additional payment will be entertained. The payment would be made as follows:
- b. **Running bills:** A periodic payment would be made against bills submitted by the Bidder within 15 (fifteen) days of submission of bills given that the progress is satisfactory as certified by Engineer in Charge and the Chief Officer. 7% (seven percent) of the amount would be retained in every bill as security deposit.
- c. **Final Bill:** The Bidder shall submit a final bill within 1 (one) month after completion of work and the same will be paid within 3 (three) months if it is in order. Disputed item and claims if any shall be excluded from the final bill and will be settled separately.
- d. **Defect Liability Period:** Any defects noticed in the finished civil structure and plumbing will have to be repaired by the Bidder at own cost within the period mentioned in Annexure-2 of completion of work ("**Defect Liability Period**").
- e. **O&M Period:** For the O&M Period, the Bidder shall be paid the total price quoted for the Operations Services by way of 36 (thirty six) equal monthly instalments.
- f. No mobilization advance will be given to the Bidder.
- g. The Bidder has to execute excess quantities as per Accepted rate only. No separate rate or DSR rate will be given to the Bidder.
- h. Liquidated damages shall be deducted from the security deposit as mentioned in Clause 1 of General Conditions of Contract.
- i. Statutory deductions of taxes shall be made at source as per Applicable Laws.

**19. Validity Period of the offer:** 120 (one hundred and twenty) days from the date of opening the tender.

## D. Submission of BIDS

**20. Deadline for Submission of Bids:** The date and time for online submission of bids (Technical and Financial) shall strictly apply in all cases. The Bidders should ensure that their Bid is prepared online before the expiry of the scheduled date and time and is submitted online before the expiry of the scheduled date and time. Bids not submitted online will not be entertained.

**21. Late Bids:** If for any reason, any interested Bidder fails to complete any of online stages during the complete tender cycle, the ABC shall not be responsible and any grievance regarding that shall not be entertained.

**22. Submission and Marking of Bids:**

- a. The tender submission will be in two stages (Technical Bid and Financial Bid). Both the technical and Financial Bid will be done online.
- b. The documents mentioned in the tender documents must be uploaded online as technical Bid and Financial Bid. Cost of the blank tender document & the necessary EMD (as given in Detail Tender Notice) will have to be deposited online through E-Payment in State Bank Of India & should be drawn in favour of the Chief Officer, ABC Municipal Council, ABC
- c. Tenders not submitted online will not be entertained.
- d. The hardcopy of technical Bid is to be submitted in two envelopes comprise of :  
Envelope-1: The copy of online payment receipt of EMD and tender fees,  
Envelope-2: Technical Bid containing scanned copy of all necessary documents as required for qualification, Bid forms, detailed technical proposal as mentioned in the bid document.  
Both envelopes shall be enclosed together in an outer single envelope. Bidder must submit the price bid online only. The hardcopy has to be submitted in a sealed envelopes on or before the Time & Date of Bid Submission given as per given schedule.
- e. If for any reason, any interested bidder fails to submit the technical and financial bid before the due date, ABC will not be held responsible for it and no grievance regarding it will be entertained.

**23. Details on e-tendering:**

- a. The tender would be received in e- tendering process which is available on web site -  
\_\_\_\_\_
- b. It is necessary to give the undertaking as follows by the Bidder, that it will not make any changes in Bidding Documents downloaded from website. If it is done the Bid of such Bidder will be rejected and the Bidder who made such changes is liable for action as per

prescribed rules. Bidding Documents published on the website are considered as authentic and legal documents in case of any complaint about the tender.

- c.** It is necessary to give an undertaking as follows: *“We have seen detailed tender document and understand the nature and scope of work. We have visited the Site and we are well aware of the condition of the Site. We have quoted our offer by considering all these things. We are ready to sign the tender before depositing the Security Deposit and taking work order if our tender is accepted.”*
- d.** In order to participate in the tenders floated using the Electronic Tender Management System (ETMS), all Bidders are required to get enrolled on the ETMS portal \_\_\_\_\_
- e.** The bids submitted online should be signed electronically with a digital signature certificate to establish the identity of the Bidder bidding online. The tenderer has to obtain the digital signature certificate. For information required for digital signature certificate he may contact ETMS help desk.
- f.** For submitting the bids online, the Bidders are required to make online payment using the electronic payments gateway service Bid Submission Fee. The different modes of electronic payments accepted on the ETMS is available and can be viewed online on the ETMS website \_\_\_\_\_
- g.** The activities of tender purchase/download, preparation of bid (Submit Bid Online), submission of EMD and other documents will be governed by the time schedules given under “Key Dates”
- h.** The Bidders have to submit (upload, scan, copies/fill) their offer/credentials online as required in the tender in the online templates in relevant envelopes.

## E. BID opening and Evaluation

**24. Date of online opening of Bid:** Technical Bid opening will be as per the date given in detailed schedule and Financial Bid opening will be done after Technical Bid opening.

**25. Opening of Bid:**

- a. The online Technical Bid opening will be held in the office of the Chief Officer, ABC Municipal Council, ABC as per given schedule.

**26. Preliminary Examination of Bids:**

- a. The document submitted in hard copies in Envelope No 1 & 2(Technical Bid) will be verified with the documents uploaded for online Technical bid submission.
- b. The ABC will examine each Bid to determine whether it is complete, whether any computational errors have been made, whether required securities have been furnished, whether the documents have been properly signed, and whether the Bid is generally in order.
- c. Prior to the detailed evaluation, the ABC will determine whether each Bid is of acceptable quality, is complete and is substantially responsive to the Bidding Documents. For purposes of this determination, a substantially responsive Bid is one that conforms to all the terms, conditions and specifications of the Bidding Documents, objections, conditionality's or reservations.
- d. If a Bid is not substantially responsive, it will be rejected by the ABC, and may not subsequently be made responsive by the Bidder by correction of the nonconformity. The ABC's determination of a Bid's responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

**27. Technical Evaluation:**

- a. Those bidders deemed to have submitted substantially responsive Technical Sections will be evaluated in a detailed review by the ABC, who will determine whether the technical aspects are in accordance with the requirements set forth in the bidding documents. Financial bids of only those bidders will be opened who are able to pass the ABC review. Bidders acknowledge that, in order to reach such a determination, the ABC will examine and analyse the technical aspects of each Bid on the basis of the information supplied by Bidders, taking into account the completeness, consistency and level of detail of the following factors:
  - i) With respect to the Design-Build construction plan,
    - A. The Bidder's ability to demonstrate how it will meet the ABCs project objective and requirements, the technical standards; and
    - B. The soundness of the proposed methodology and approach, and the extent to

which the Design-Build Work Plan demonstrates an understanding of the local conditions and specific project requirements.

- ii) With respect to the Operations Work Plan,
  - A. The extent to which the Operations Work Plan addresses all of the Operations Services that are to be provided in accordance with the Contract;
  - B. The soundness of the proposed methodology and approach, and the extent to which the Operations Work Plan demonstrates an understanding of the local conditions and specific project requirements; and
  - C. The Bidder's ability to demonstrate how it will meet the technical standards.
- iii) With respect to the Staffing Plan,
  - A. the qualifications and competence of the key staff; and
  - B. the overall quality of the Staffing Plan, and
  - C. Strength demonstrated by the Plan and the extent to which it meets the expertise requirements set out in the Contract.
- b. Technical evaluation shall be carry out as per Bid Evaluation Framework defined in Section-3.

**28. Financial Evaluation and Comparison of Bids:**

- a. Only the bidders whose Technical Bid Documents fulfil the conditions will be eligible for the online Financial Bid opening and the Bids of the bidders who do not fulfil the conditions will be rejected. Financial Bid opening will be done online at a time specified after the Technical Bid opening.
- b. The Financial Bid opening will be done online only.
- c. The ABC shall examine each bidder's financial section to determine whether such financial section is complete and responsive to the Bidding Documents.
- d. The ABC shall evaluate the Bid Prices as under:
  - i. Total price for Schedule A: Design, drawings and approval for Construction of Fecal Sludge & Septage treatment plant from designated government departments before start of execution of the project etc complete and Construction and Commissioning Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer-In-Charge as quoted by the bidder; plus
  - ii. Total price for Schedule B: O&M of the FSSTP for 3 (three) years ;
- e. The bidder who quotes the lowest rate (sum of price quoted for Schedule A and Schedule B) will be declared as successful bidder and may be called for negotiation. At the time of negotiation, ABC will also review the life cycle costs of the project. Especially given the variability in applicable costs based on proposed technology. The cost breakup provided in Annexure 5 will help evaluate the veracity of the total cost submitted.

**29. Qualification of the Bidder**

- a. For civil works, the selected bidder / contractor has to be registered contractor with Public works Department, and in case if the bidder/contractor is not registered then the selected bidder/contractor shall have to register within one month after opening of financial bid and then only tender would be awarded.
- b. The ABC shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive Bid, meets the qualification criteria specified in Bidding Documents and evaluated as per Bid Evaluation Framework defined in Section-3.
- c. The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder.
- d. An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the ABC shall proceed to the next lowest evaluated Bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.
- e. The successful Bidder will be required to produce a valid and concurrent license issued in his favour under provisions of the Contract Labour (Regulation and Abolition) Act, 1970 before starting the work, to the concerned authority. On failure to do so, the acceptance of the tender is liable to be withdrawn and EMD forfeited.

**30. ABC's Right to Accept any Bid, and to Reject any or all Bids:** Right to reject any or all tenders without assigning any reasons is reserved by the ABC, whose decision will be final and legally binding on the bidders.



## F. Award of Contract

**31. Award Criteria:** The ABC shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

**32. Notification of Award and Signing of Contract**

- a. The acceptance of Bid may be communicated to the Bidder through a written notice by the tender opening authority.
- b. At the same time, the ABC shall also notify all other Bidders of the results of the bidding.
- c. Promptly after notification, the ABC shall send the successful Bidder the copy of the Contract.
- d. Within seven (7) days of receipt of the copy of the Contract, the successful Bidder shall sign, date, and return it to the ABC. After which the bidder has to start executing the work under the contract within 7 days.
- e. The Bidder will have to sign the original copy of the Bidding Documents and Contract according to which Work is to be carried out. The Bidder shall also have to give a declaration to the effect that he has fully studied the plans, specifications, local conditions, and availability of labourers, and materials and that he has quoted his rates with the consideration to all these factors.
- f. Upon award of the Contract, the selected Bidder shall be required to sign all the Bidding Documents which shall form part of the contract Documents.
- g. Timelines for completion of Work:

Sr. No.	Particulars of Work	Timelines
1.	Designing the Fecal Sludge & Septage treatment plant, obtaining all necessary approvals for the proposal from designated government departments.	Within one month of award of contract
2.	Construction of the Fecal Sludge & Septage treatment plant	Within five month of award of contract
3.	Commissioning and trail run for 1 month of the Fecal Sludge & Septage treatment plant	Within six month of award of contract

**33. Details on Initial Security Deposit**

The successful Bidder shall deposit 3% of the Contract Value (Part-A + Part-B) towards initial security deposit (“**Initial Security Deposit**”) in the form of a bank guarantee within 30 (thirty) days of signing the Contract. For the avoidance of doubt, it is clarified that the Initial Security Deposit may be deposited prior to signing of the Contract. On submission of the Initial Security Deposit, the EMD will be refunded and the Initial Security Deposit will be

released only after completion of successful trial run of one month and commissioning of the FSSTP (i.e. at the time of final bill) provided that performance security has been furnished by the Bidder.

**34. Details on Additional Security Deposit**

In addition to the above Initial Security Deposit, 7% of the gross amount in every running bill ("**Additional Security Deposit**") shall be deducted and withheld and the same will be released after successful completion of trial run and commissioning of the FSSTP (i.e. at the time of final bill) provided that performance security has been furnished by the Bidder.

The Initial Security Deposit and the Additional Security Deposit shall be collectively referred to as the "**Security Deposit**".

**35. Details on Performance Guarantee**

Prior to the release of the Security Deposit by the ABC to the Bidder as given above, the Bidder shall be required to furnish a performance security of 5% of the Contract Value (Part-A + Part-B) ("**Performance Security**") through a bank guarantee from the date of successful commissioning of Plant. This performance security will be released only after completion of 60 (sixty) days subsequent to the O&M period of 3 (three) years post commissioning of the FSSTP.

**36. Details on Stamp Duty**

Stamp duty payable on for the Contract between the successful Bidder and the Chief Officer, ABC Municipal Council, ABC as per applicable stamp duty laws will be borne by the successful Bidder.

## **Section-3 Qualification criteria and Bid Evaluation Framework**

## Section-3 Qualification criteria and Bid Evaluation Framework

### 1. Qualification Criteria

Evaluation of the Bidders' qualifications will be based on compliance with all the following minimum Yes/No criteria regarding their general financial strength, technical strength, personnel and management capabilities, and other relevant information as furnished as per the attached bidding forms.

Sr. No	Parameters for Qualification	Yes / No
Financial Criteria:		
1	Average annual turnover of preceding 3 (three) years is equal to or more than INR xxxxxxxx (Indian Rupees)	
Technical Criteria:		
2	In the business of designing/ construction of Septage/Sewage Treatment Plant for at least 3 (three) years	
3	Designed, constructed and commissioned at least 1 (one) work on Sewage/Fecal Sludge & Septage treatment plant, which are in operational condition and achieved the desired effluent standard before date of publishing the NIT in any location in India	
4	Bidders should have successful experience in operating and maintaining a sewage/Fecal Sludge & Septage treatment plant for more than one year in the last 5 years	
5	Technical design submission for proposed Fecal Sludge & Septage treatment plant	

Note: Joint venture with the technology provider and contractor firm is allowed.

### 2. Bid Evaluation Framework

#### Evaluation Criteria

Sr No.	Parameters	Criteria
<b>Technology Evaluation Parameters</b>		
1	Flow	Daily rate should complies with the flow rate of ___ m <sup>3</sup> /day
2	Treatment process technology	Should meet the basic treatment process components; pre-treatment, storage, solid-liquid separation, solid treatment and liquid treatment unit.
3	Inlet parameters of raw septage	Design parameters should be able to treat the raw septage quality of pH, BOD, COD, TSS, fecal coliform, Total Nitrogen, oil and grease, etc.
4	Final quality of effluent and treated	Ability to meet minimum effluent quality discharge

Sr No.	Parameters	Criteria
	sludge	standards of pH, BOD, COD, TSS, nutrients, fecal coliform, total coliform, E-coli, etc. as per the prevalent discharge standards of State Government and as amended from time to time. Dewatered dried treated septage should have E-coli of 1000/g of total solids as per Municipal Solid Wastes (Management & Handling) Rules, 2000 (“ <b>MSW Rules</b> ”) for quality of compost.
5	Critical design parameters	Mentioned critical design parameters along with its maximum input load which affects treatment process for example solid retention time / organic loading rate / hydraulic retention time / temperature / solid loading rate / nitrogen loading.
6	Land requirement	Land requirement should be equal to or less than available land area for proposed treatment facility.
7	Advantages of proposed technology	Mentioned advantages of proposed technology.
8	Disadvantages of proposed technology	Mentioned disadvantages of proposed technology.
9	Replacement /refurbishment cost anticipated over 15 year life of treatment plant,	Replacement /refurbishment cost should be less
<b>Financial Evaluation Parameters</b>		
1	Total cost (Capital + Operational cost for three years)	Total cost should be the lowest

## **Section-4 Bidding Forms**

**Document checklist**

No.	Document title	Check
1	EMD receipt	
2	Tender Fee receipt	
3	Technical proposal	
4	Financial Proposal	
5	Bidder's bid form	
6	Declaration of the contractor 1	
7	Declaration of the contractor 2	
8	Details of work of similar type and magnitude carried out by the tenderer	
9	Details of other works tenderer has in hand on the date of submission of tender	
10	Details of plant and machinery immediately with the tenderer for the use of this work	
11	Details of technical personnel with the tenderer	
12	Year wide statement showing cost of completed works	
13	Financial statement	
14	Organisation profile	
15	Form of bank guarantee for security deposit	
16	Form of bank guarantee for performance guarantee	
17	Form of letter of intent by JV partners to enter in to JV agreement	
18	Form of power of attorney for joint venture	
19	Form of undertaking by the joint venture partners	
20	Form of standard form of contract	

**Form 1 : BIDDER'S BID FORM**

*[NAME OF PROJECT]*

Date: \_\_\_\_\_

Contract No: \_\_\_\_\_

*[Name of Contract]*

To: *[Name and address of ABC]*

Gentlemen,

Having examined the Bidding Documents, including Addendum Nos. *[insert numbers]*, the receipt of which is hereby acknowledged, we, the undersigned, offer to Design, Build, commission and trail run for one month the Fecal Sludge & Septage treatment plant including all necessary approvals from various government departments etc. and perform the subsequent operation and maintenance services for three years under the above-named Contract in full conformity with the said Bidding Documents.

We undertake, if our Bid is accepted, to commence the construction of Fecal Sludge & Septage treatment plant and to achieve completion within the respective timeline stated in the Bidding Documents.

If our Bid is accepted, we undertake to provide an initial security deposit in the form of, in the amounts, and within the time specified in the Bidding Documents.

We accept to appoint Adjudicator as per mutual discussions with ABC council.

We agree to abide by this Bid, which consists of this letter and the other documents listed in tender document, for the period identified as bid validity period, and it shall remain binding upon us and may be accepted by you at any time before the expiration of that period.

Until a formal contract is prepared and executed between us, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, *[Year]*.

*[Signature]*

Duly authorized to sign this bid for and on behalf of \_\_\_\_\_

*[Name of Bidder]*



**Form 2 : DECLARATION OF THE CONTRACTOR (1/2)**

I/We \_\_\_\_\_

Here by declared that I/We have made myself/ ourselves thoroughly conversant with the subsoil conditions, local conditions regarding all materials (such as stone, murum, sand, etc.) and all other geographical, physical, climatic and other conditions which may affect the Work to be undertaken and labour of which I/We have based my/our rates for this Work. The specification, conditions, and lead of materials on this Work have been carefully studied and under stood by me/us before submitting this tender. I/We undertake to use only the best materials approved by the Chief Officer or his duly authorized assistant, before starting the Work and to abide by his decision in this regard.

Signature of Contractor(s)

Date:

Place:

**Form 3 : DECLARATION OF THE CONTRACTOR (2/2)**

I /WE \_\_\_\_\_, Indian Inhabitant / registered Company under the Companies Act/ Partnership Firm Registered Under Indian Partnership Act, do hereby solemnly affirm, say and undertake to pay the labourers engaged on work, the wages as per Minimum Wages Act, 1948 or as and when revised by the Government, applied to the zone in which the work lies.

In addition, I/we shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen’s Compensation Act,1923, the Contract Labour (Regulation and Abolition) Act, 1970, and any modification thereof or any law relating thereof and rules made there under from time to time.

Signature of Contractor(s)

Authorised Person

Date:

Place:

**Form 4: Details of work of similar type and magnitude carried out by the tenderer**

<b>Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge &amp; Septage treatment plant of capacity ___ m<sup>3</sup>/day at ABC council</b>							
<b>Sr. No.</b>	<b>Name of work</b>	<b>Cost of work</b>	<b>Date of starting of work</b>	<b>Stipulated date of completion</b>	<b>Actual date of completion</b>	<b>Time in which completed</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

**Form 5: Details of other works tenderer has in hand on the date of submission of tender**

Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge & Septage treatment plant of capacity ___ m <sup>3</sup> /day at ABC council									
Sr. No.	Name of work	Place of Work	Work in Hand			Work Tendered For			Remarks
			Tender cost	Cost of remaining work	Anticipated date of completion	Estimated cost and date	Expected date of decision	Stipulated period of completion	
1	2	3	4	5	6	7	8	9	10

**Form 6: Details of plant and machinery immediately with the tenderer for the use of this work**

<b>Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge &amp; Septage treatment plant of capacity ___ m<sup>3</sup>/day at ABC council</b>							
<b>Sr. No.</b>	<b>Name of equipment</b>	<b>No. of units plants</b>	<b>Kind and make</b>	<b>Capacity</b>	<b>Age condition</b>	<b>Present location and condition</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

**Form 7: Details of technical personnel with the tenderer**

<b>Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge &amp; Septage treatment plant of capacity ___ m<sup>3</sup>/day at ABC council</b>						
<b>Sr. No.</b>	<b>Name of person</b>	<b>Qualification</b>	<b>Location of work (Field or office)</b>	<b>Experience of execution of similar type of works in detail</b>	<b>Period for which the person is working with the tenderer</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

**Form 8: Year wise statement showing cost of completed works**

Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge & Septage treatment plant of capacity ___ m <sup>3</sup> /day at ABC council						
Sr. No.	Name of work	Years for construction	Year wise cost of executed work			Remarks
			2013-14	2014-15	2015-16	
1	2	3	4	5	6	7

Necessary certificate for each of the completed works to be duly attached and to be certified with the executive engineer.

**Form 9: Financial Statement**

<b>Name of Work :- Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge &amp; Septage treatment plant of capacity ___ m<sup>3</sup>/day at ABC council</b>			
<b>Years</b>	<b>Annual Turnover (in INR Lakhs)</b>	<b>Profit Before Tax (in INR Lakhs)</b>	<b>Net Worth (in INR Lakhs)</b>
<b>FY 2015-16</b>			
<b>FY 2014-15</b>			
<b>FY 2013-14</b>			

**(This form shall be certified by a Chartered Accountant)**

Certified by:

Name of Firm of Chartered Accountants

Name of Chartered Accountant:

Membership No.: (of Chartered Accountant)

Seal of Firm:



**Form 10: Organisation Profile**

**Name of Work: - Turnkey project on Design, Construction, Commissioning and Operation of Fecal Sludge & Septage treatment plant of capacity \_\_\_ m<sup>3</sup>/day at ABC council**

Name of the Firm	
Contact Details:	
Name of the Contact Person	
Address of Correspondence with Pin Code	
Phone No.	
Fax No.	
Mobile No.	
E-mail Address	
Legal status of the firm and Registration details. (Proprietary/Partnership/Pvt. Ltd./ other)	
PAN No.	

**Form 11: FORM OF BANK GUARANTEE FOR SECURITY DEPOSIT**

WHEREAS, .....(name of Bidder including names of all joint venture participants, if applicable) (hereinafter called the “Bidder”) has submitted its Bid (hereinafter called the “Bid”) dated (date) for the performance of (insert name of Contract).

KNOW ALL PEOPLE by these presents that We ..... (name of Bank) of.....  
..... (name of country) having our registered office at ..... (hereinafter called the “Bank” or “Guarantor”)are bound unto ..... (hereinafter called the “ABC”) in the sum of .....for which payment well and truly to be made to the ABC, the Bank binds itself, its successors, and assigns by these presents.

*[The Bidder should insert the amount of the guarantee in words and in figures. This figure should be the same amount as set out in section-2 Instructions to bidders. The details related to the Bid Security are set out in the section-2 Instructions to Bidders)*

The CONDITIONS of this obligation are:

1. if the Bidder withdraws its Bid during the validity of the Bid as per the Bidding Documents; or
2. if the Bidder, having been notified of the acceptance of its Bid by the ABC council during the period of Bid validity,
  - (a) fails to sign the form of Contract in accordance with and when required by \_\_\_\_\_;or
  - (b) fails to provide the performance security to the ABC council in accordance with and when required by \_\_\_\_\_.

We hereby irrevocably, unconditionally and absolutely undertake to pay to the ABC council up to the above amount upon receipt of its first written demand, without the ABC council having to substantiate its demand or provide any proof in addition to the written demand, provided that in its demand the ABC council will note that the amount claimed by it is due to it owing to the occurrence of one or more of the conditions set out above, specifying the occurred condition or conditions. It shall not be necessary, in order to invoke this Guarantee, for ABC council to institute a suit or obtain a judgment, or exhaust its legal remedies against the Contractor.

This Guarantee will remain in full force up to and including 30 (thirty) days after the expiry of the Bid validity period and it may be extended by the ABC council in accordance with the Bidding Documents, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date or the extended date.

In connection with its obligations under this Guarantee, the Guarantor hereby unconditionally waives (i) any incapacity or lack of power, authority or legal personality of or dissolution or change in the members or status of Contractor or any other person or any unenforceability, illegality or invalidity of any obligation of any person under the Contract, (ii) any requirement that ABC council be diligent or prompt in making demands or protests hereunder or asserting any other rights of ABC council hereunder against Contractor or any other person, (iii) any requirement, and any right to require, that any right, remedy or power be exercised or any action be taken against any other guarantor, (iv) any bankruptcy, insolvency, reorganization, dissolution, sale of assets, arrangement, adjustment, composition, liquidation or similar event of either Contractor or any other person that might constitute a defence to any performance (including any payment performance) required under the applicable Contract or hereunder (v) any alteration or modification of the Contract and settlement, release or compromise any of the guaranteed obligations between ABC council and Contractor; and (vi) any event,

occurrence or other circumstance which might otherwise constitute a legal or equitable discharge of a surety or guarantor.

ABC council may, at its election, exercise any right or remedy it may have against Contractor or any security now or hereafter held by it without affecting or impairing in any way the liability of the Guarantor hereunder, except to the extent the guaranteed obligations have been performed and/or paid.

SEALED with the Common Seal of the said  
Bank this ..... day of ....., [Year].

\_\_\_\_\_  
WITNESS  
(signature, name and address)

\_\_\_\_\_  
SIGNATURE OF THE BANK

SEAL Name:

Position:\_\_\_\_\_

**Form 12: FORM OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE**

\_\_\_\_\_ [Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:** \_\_\_\_\_ [Name and Address of ABC]

**Date:**

**PERFORMANCE GUARANTEE NO.:**

We have been informed that \_\_\_\_\_ [name of Bidder] (hereinafter called the "Bidder") has entered into Contract No. (Reference number of the contract) dated \_\_\_\_\_ with you, concerning a contract to design, build and operate a Fecal Sludge & Septage treatment plant in [Name of Location] (hereinafter called the "Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Bidder/ operator, we \_\_\_\_\_ [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of \_\_\_\_\_ [amount in figures] ( \_\_\_\_\_ ) [amount in words], upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder/operator is in breach of its obligations under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire no later than the earlier of:

- (a) Sixty (60) days after the date of termination of the Contract pursuant to its terms.

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

We hereby irrevocably, unconditionally and absolutely undertake to pay to the ABC up to the above amount upon receipt of its first written demand, without the ABC having to substantiate its demand or provide any proof in addition to the written demand, provided that in its demand the ABC will note that the amount claimed by it is due to it owing to the occurrence of one or more of the conditions set out above, specifying the occurred condition or conditions. It shall not be necessary, in order to invoke this Guarantee, for ABC to institute a suit or obtain a judgment, or exhaust its legal remedies against the Contractor.

This Guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

In connection with its obligations under this Guarantee, the Guarantor hereby unconditionally waives (i) any incapacity or lack of power, authority or legal personality of or dissolution or change in the members or status of Contractor or any other person or any unenforceability, illegality or invalidity of any obligation of any person under the Contract, (ii) any requirement that ABC council be diligent or prompt in making demands or protests hereunder or asserting any other rights of ABC council

hereunder against Contractor or any other person, (iii) any requirement, and any right to require, that any right, remedy or power be exercised or any action be taken against any other guarantor, (iv) any bankruptcy, insolvency, reorganization, dissolution, sale of assets, arrangement, adjustment, composition, liquidation or similar event of either Contractor or any other person that might constitute a defence to any performance (including any payment performance) required under the applicable Contract or hereunder (v) any alteration or modification of the Contract and settlement, release or compromise any of the guaranteed obligations between ABC council and Contractor; and (vi) any event, occurrence or other circumstance which might otherwise constitute a legal or equitable discharge of a surety or guarantor.

ABC council may, at its election, exercise any right or remedy it may have against Contractor or any security now or hereafter held by it without affecting or impairing in any way the liability of the Guarantor hereunder, except to the extent the guaranteed obligations have been performed and/or paid.

Yours truly,

*[Name of Bank]*

---

*Authorized Signature*

**Form 13: FORM OF LETTER OF INTENT BY JV PARTNERS TO ENTER IN TO JV AGREEMENT**

THIS LETTER OF INTENT signed on this..... day of..... Two Thousand and .....by..... a company incorporated under the laws of.....and having its Registered Office at.....(hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s ..... a company incorporated under the laws of ..... and having its Registered Office at .....(hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s\_\_\_\_\_a Company incorporated under the laws of ..... and having its Registered Office at ..... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract (hereinafter called the "Contract") (in case of award) against the work for the design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of complete works associated with .....(hereinafter called the "ABC") pursuant to tender dated \_\_\_\_\_ bearing reference number \_\_\_\_\_ with respect to \_\_\_\_\_ ("Tender").

WHEREAS the Party No.1, Party No.2 and Party No.3 (collectively referred hereunder as "Parties") intend to enter into a Joint Venture Agreement

AND WHEREAS the ABC council invited bids as per the above mentioned Specification to design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of Complete Works stipulated in the Bidding Documents.

AND WHEREAS the qualification criteria forming part of the Bidding Documents, inter-alia, stipulates that two or more qualified partners, meeting the requirements of 'Qualification Requirement of the Bidder', as applicable may bid, provided, they submit a Letter of Intent to enter into Joint Venture Agreement and the Joint Venture Partners fulfil all other requirements under 'Qualification of the Bidder' and in such a case, the Letter of Bid (Bid Form) shall be signed by [Party 1/ Party 2/ Party 3] as the partner-in-charge so as to legally bind all the partners of the joint venture, who will be jointly and severally liable to perform the Contract by entering into Joint Venture Agreement which will be legally binding on all partners and provides for such obligations.

The above clause further states that this Letter of Intent shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the ABC vide proposal No.....dated..... by Party No.1 based on this letter of Intent between all the parties; under these presents and the bid has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreement all the parties to this Letter of Intent do hereby declare and undertake as follows:

In requirement of the award of the Contract by the ABC council to the joint venture partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner/ Partner-in-charge and further declare and confirm that we the parties to the joint venture shall jointly and severally be bound unto the ABC council for the successful performance of the Contract and shall be fully responsible for the design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of Complete Works accordance with the Contract for which we shall enter into joint venture agreement as per proforma submitted with the Bid which will be legally binding on all partners:

If the Contract is awarded to the joint venture then in case of any breach or default of the said Contract by any of the parties to the joint venture, the Parties will be fully liable for the same and responsible on joint and several basis, for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

Further, if the ABC suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance the joint venture as successful bidders, including shortfall in performance/ parameters of the equipment in meeting the performances guaranteed as per the specifications in terms of the Contract, the Party(s) of these presents will promptly make good such loss or damages caused to the ABC council, on its demand without any demur. It shall not be necessary or obligatory for the ABC council to proceed against lead Partner to these presents before proceeding against or dealing with the other Party(s), the ABC can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities /obligations under the Contract to the ABC council.

The financial liability of the Parties towards the ABC council, with respect to any of the claims arising out of the performance or non-performance of the obligations set forth in this Letter of Intent, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties.

It is expressly understood and agreed between the Parties to this Letter of Intent that the responsibilities and obligations of each of the Parties shall be as delineated to be suitably appended by the Parties along with this Letter of Intent in its bid. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract in the event of award on joint venture.

It is also understood that this Letter of Intent is provided for the purposes of undertaking joint and several liabilities of the partners to the joint venture for submission of the bid and performance of the Contract if awarded and that this Letter of Intent shall not be deemed to give rise to any additional

liabilities or obligations, in any manner or any law, on any of the Parties to this Letter of Intent or on the joint venture, other than the express provisions of the Contract.

This Letter of Intent shall be construed and interpreted in accordance with the provisions of the Contract.

In case of an award of a Contract, we the parties to this Letter of Intent do hereby agree that we shall enter into Joint Venture Agreement as per proforma submitted with the Bid which will be legally binding on all partners and we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favour of the ABC in the currency/currencies of the Contract.

It is further agreed that this Letter of Intent shall be irrevocable and shall form an integral part of the bid. It shall be effective from the date first mentioned above for all purposes and intents.

Capitalised terms not defined in this Letter of Intent shall have the meaning given to them in the Tender.

IN WITNESS WHERE OF, the Parties to this Letter of Intent have through their authorized representatives executed these presents and affixed Common Seal of their companies, on the day, month and year first mentioned above.

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For Lead Partner (PartyNo.-1)

For and on behalf of M/s

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For (PartyNo.-2)

For and on behalf of M/s



DBOT Tender Document for Fecal Sludge & Septage Treatment Plant at City ABC, XYZ

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For (PartyNo.-3)

For and on behalf of M/s

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

**Form 14: FORM OF POWER OF ATTORNEY FOR JOINT VENTURE**

(On Non-judicial Stamp Paper of Appropriate value, if required as per laws of the country of the bidder, to be purchased in the Name of Joint Venture)

KNOW ALL MEN BY THESE PRESENTS THAT WE, the Partners whose details are given hereunder.....have formed a Joint Venture under The laws of..... (\*)/ intend to form a Joint Venture(\*) [(\*)delete whichever is not applicable] and having our Registered Office(s) /Head Office(s) at ..... (herein after called the ' Joint Venture 'which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) acting through M/s ..... being the Partner in-charge do hereby constitute, nominate and appoint M/s..... a Company incorporate under the laws of .....and having its Registered / Head Office at .....as our duly constituted lawful Attorney (hereinafter called "Attorney" or "Authorized Representative" or" Partner In-charge") to exercise all or any of the powers for and on behalf of the Joint Venture in regard to work for the bids for which have been invited by.....(hereinafter called the 'ABC') to undertake the following acts:

- i) To sign and submit proposal and participate in the aforesaid Bid Specification of the ABC council on behalf of the "Joint Venture".
- ii) To negotiate with the ABC council the terms and conditions for award of the Contract pursuant to the aforesaid Bid and to sign the Contract with the ABC for and on behalf of the "Joint Venture".
- iii) To do any other act or submit any document related to the above.
- iv) To receive, accept and execute the Contract for and on behalf of the "Joint Venture".

For the above purpose, the person(s) authorized by the Partner In-charge shall be the person(s) authorized to act on behalf of the "Joint Venture" as per the Power of Attorney given to him/her/them by the Partner In-Charge,

It is clearly understood that all the partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and the Partner In-charge (Lead Partner) shall ensure performance of the Contract(s) and if one or more Partner's fail to perform the irrespective portions of the Contract(s), the same shall be deemed to be a default by all the Partners.

It is expressly understood that this Power of Attorney shall remain valid binding and irrevocable till completion of the Design Build as well as the Operations and Maintenance Period in terms of the Contract.

The Joint Venture hereby agrees and undertakes to ratify and confirm all the what so ever the said Attorney / Authorized Representatives / Partner in-charge quotes in the bid, negotiates and signs the Contract with the ABC council and / or proposes to act on behalf of the Joint Venture by virtue of this Power of Attorney and the same shall bind the Joint Venture as if done by itself.

IN WITNESS THEREOF the Partners constituting the Joint Venture as aforesaid have executed these presents on this .....day of .....under the Common Seal of their Company.

For and on behalf of the  
Partners of Joint  
Venture

The Common Seal of the above Partners of the Joint Venture:

The Common Seal has been affixed there unto in the presence of: WITNESS

1. Signature.....  
Name..... Designation.....  
Occupation.....

2. Signature.....  
Name.....  
Designation.....  
Occupation.....

**Form 15: FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS**

(On Non-Judicial Stamp Paper of Appropriate Value, if required as per laws of the country of the bidder, to be purchased in the Name of Joint Venture)

THIS JOINT DEED OF UNDERTAKING executed on this .....day of .....Two Thousand and .....by ..... a company incorporated under the laws of ..... and having its Registered Office at..... (hereinafter called the "PartyNo.1. which expression shall include its successors, executors and permitted assigns) and M/s ..... a company incorporated under the laws of ..... and having its Registered Office at..... (hereinafter called the "PartyNo.2" which expression shall include its successors, executors and permitted assigns) and M/s .....a Company incorporated under the laws of ..... and having its Registered Office at .....(hereinafter called the "PartyNo.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract (hereinafter called the "Contract" (in case of award) against the work to design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of Complete Works associated with.....(hereinafter called the "**ABC**").

WHEREAS the Party No.1, Party No.2 and Party No.3 have entered into an Agreement dated.....

AND WHEREAS the ABC invited bids as per the above mentioned Specification to design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of Complete Works stipulated in the Bidding Documents.

AND WHEREAS Qualification Criteria forming part of the Bidding Documents, inter-alia, stipulate that an undertaking of two or more qualified partners, meeting the requirements of 'Qualification Criteria of the Bidder', as applicable, may bid, provided, the joint venture fulfils all other requirements under 'Qualification of the Bidder' and in such a case, the Letter of Bid (Bid Form) shall be signed by the Partner-In-Charge so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that this Undertaking shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the ABC vide proposal No.....dated..... by Party No.1 based on this Undertaking between all the parties; under these presents and the bid in accordance with the requirements of Qualification Criteria, has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Joint Deed of Undertaking do hereby declare and undertake:

In requirement of the award of the Contract by the ABC to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the ABC for the successful performance of the Contract and shall be fully responsible to design and build Fecal Sludge & Septage treatment plant and all appurtenant structures and allied works, and O&M of Complete Works in accordance with the Contract.

In case of any breach or default of the said Contract by any of the parties to the Joint Venture, the parties do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

Further, if the ABC suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the ABC, on its demand without any demur. It shall not be necessary or obligatory for the ABC to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the ABC can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the ABC.

The financial liability of the Parties of this Joint Deed of Undertaking to the ABC, with respect to any of the claims arising out of the performance or non-performance of the obligations set forth in this Joint Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Joint Deed of Undertaking.

It is expressly understood and agreed between the Parties to this Joint Deed of Undertaking that the responsibilities and obligations of each of the Parties shall be as delineated to be suitably appended by the Parties along with this Joint Deed of Undertaking in its bid. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract in the event of award on Joint Venture.

It is also understood that this Joint Deed of Undertaking is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract if awarded and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Joint Deed of Undertaking or on the Joint Venture, other than the express provisions of the Contract.

This Joint Deed of Undertaking shall be construed and interpreted in accordance with the provisions of the Contract.

In case of an award of a Contract, we the parties to this Joint Deed of Undertaking do hereby agree that we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favour of the ABC in the currency / currencies of the Contract.

It is further agreed that this Joint Deed of Undertaking shall be irrevocable and shall remain integral part of the bid and shall continue to be enforceable till the ABC discharges the same or upon the completion of the Contract in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHERE OF, the Parties to this Deed of Undertaking have through their authorized representatives executed these presents and affixed Common Seal of their companies, on the day, month and year first mentioned above.

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For Lead Partner  
(PartyNo.-1)

For and on behalf of M/s

DBOT Tender Document for Fecal Sludge & Septage Treatment Plant at City ABC, XYZ

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

For (PartyNo.-2)

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For and on behalf of M/s

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

For (PartyNo.-3)

Common Seal of ..... has been affixed in my/ our presence pursuant to Board of Director's Resolution dated .....

For and on behalf of M/s

Name.....

Designation .....

Signature.....

Signature of the authorized representative

WITNESS:

I \_\_\_\_\_

II \_\_\_\_\_

**Form 16: Form of standard form of contract**

This CONTRACT (hereinafter called the "**Contract**") is made the \_\_\_\_\_ day of the month of \_\_\_\_\_, 2017, between ABC Municipal Council, XYZ (hereinafter referred to as the "**ABC**" which includes its assigns, executors & administrator), and M/s \_\_\_\_\_ (hereinafter referred to as the "**Contractor**" or "**Bidder**"), a company \_\_\_\_\_, and having its registered office at \_\_\_\_\_ through \_\_\_\_\_, duly appointed its General Attorney. Certified photocopy General Power of Attorney is annexed herewith; Consultants include its assigns, executors and administrators.

[\*Note: If the Contractor consist of more than one entity, the above should be partially amended to read as follows:

"... and a joint venture consisting of the following entities, each of which will be jointly and severally liable to the ABC for all the Contractor's obligations under this Contract, namely, \_\_\_\_\_ and \_\_\_\_\_ (hereinafter called the "**Contractors**".)"]

WHEREAS

- (a) the ABC has requested the Contractor to provide (i) Design, Construction and Commissioning of Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for One Month and commissioning of the plant to the satisfaction of the Engineer (ii) operation & maintenance of the complete works of Fecal Sludge & Septage treatment plant and allied works for a period of 3 years; a Fecal Sludge & Septage treatment plant of capacity \_\_\_ m<sup>3</sup>/ day at ABC Municipal Council, District D, XYZ as defined in this Contract (hereinafter called the "**Services**");
- (b) the Contractor, having represented to the ABC that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;

*\*All notes should be deleted in final text.*

NOW THEREFORE the parties hereto hereby agree as follows:

- 1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
  - (a) The Bidding Documents
  - (b) The General Conditions of Contract (hereinafter called "**GC**");
  - (c) The Special Conditions of Contract (hereinafter called "**SC**");
  - (d) The following Annexures:

Annexure 1: \_\_\_\_\_  
Annexure 2: \_\_\_\_\_  
Annexure 3: \_\_\_\_\_  
Annexure 4: \_\_\_\_\_

[Note: *If any of these Annexures are not used, the words "Not Used" should be inserted below next to the title of the Annexure.*]

The Bidding Documents and conditions along with any corrigendum/ standard set of deviations issued by the ABC in relation thereto incorporating the conditions of the Bidding Documents and its amendments and any Special Conditions during negotiations between the ABC and the successful bidder shall be deemed to be part of the Contract.

2. The mutual rights and obligations of the ABC and the Contractor shall be as set forth in the Contract, in particular:
  - (a) The Contractor shall carry out the Services in accordance with the provisions of the Contract;  
and
  - (b) The ABC shall make payments to the Contractor in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

FOR AND ON BEHALF OF ABC council By  
(Authorized Representative)

FOR AND ON BEHALF OF [NAME OF CONTRACTOR(S)] By  
(Authorized Representative)



# Section-5 Conditions of Contract

## **Section-5 Conditions of Contract**

### **A. General Conditions**

#### **CLAUSE 1**

(Modifications as per the G.R. P.W.D. No. CAT-1087/CR-94/Bldg-2 dated 14-6-1989)

The successful Bidder shall deposit 3% of Contract Value (Part-A + Part-B) towards initial security deposit (“**Initial Security Deposit**”) in the form of bank guarantee within 30 (thirty) days or before signing the Contract. On submission of Initial Security Deposit, the EMD will be refunded and the Initial Security Deposit will be released only after completion of successful trial run of one month and commissioning of the FSSTP provided that Performance Security has been furnished by the Bidder. *Security deposit*

In addition to the above Initial Security Deposit, 7% of the gross amount in every running bill (“**Additional Security Deposit**”) shall be deducted and withheld and the same will be released after successful completion of trial run of one month and commissioning of the FSSTP provided that Performance Security has been furnished by the Bidder.

The Initial Security Deposit and the Additional Security Deposit shall be collectively referred to as the “Security Deposit”.

The Security Deposit referred to when paid in cash may, at the cost of the depositor be converted into interest bearing securities provided that the depositor, has expressly desired this in writing.

All compensation, liquidated damages or other sums of money payable by the Bidder to ABC under the terms of this Contract may be deducted from the Security Deposit or from sale of interest bearing securities, or from the interest arising thereon, or from encashment of the bank guarantee given towards the Security Deposit, or from any sums, which may be due or may become due by ABC to the Bidder under any other Contract or transaction of any nature by account whatsoever.

In the event of the Security Deposit is reduced by reason of any such deduction or encashment or sale of securities as aforesaid, the Bidder shall, within 10 (ten) days, thereafter make good in cash or bank guarantee or such other form acceptable to the ABC, any sum which may have been deducted from the Security Deposit or any part thereof.

**CLAUSE 2**

The time allowed for carrying out the Scope of Work shall be strictly observed by the Bidder and shall commence from the date on which the order to commence Work is given to the Bidder by the ABC. The Work shall through the stipulated period of the Contract be proceeded with all due diligence (time being deemed to be the essence of the Contract on the part of the Bidder). *Compensation for delay*

The detailed progress of the Work shall abide by the program of detailed progress laid down by the Engineer-In-Charge. Further, the Work shall be carried out within the following timelines:

Timelines for completion of Work:

Sr. No.	Particulars of Work	Timelines
1.	Designing the Fecal Sludge & Septage treatment plant, obtaining all necessary approvals for the proposal from designated government departments.	Within one month of award of contract
2.	Construction of the Fecal Sludge & Septage treatment plant	Within five month of award of contract
3.	Commissioning and trail run for 1 month of the Fecal Sludge & Septage treatment plant	Within six month of award of contract

In the event the Bidder fails to comply with these conditions he shall be liable to pay as compensation, an amount equal to 1% (one percent) of the estimated cost (“**Liquidated Damages**”) for every day that the quantity of work due remains incomplete provided always that the total amount of compensation to be paid under the provisions of this clause shall not exceed 10% (ten percent) of the Total Estimated Cost of the Work.

The parties agree that the Liquidated Damages are a genuine pre-estimate of the loss likely to be suffered by the ABC in case of delay by the Contractor in performing his obligations under the Contract. Levy of Liquidated Damages shall be without prejudice to the other rights and remedies of the ABC under the Contract or Applicable Law. Notwithstanding such payment, the Contractor shall continue to perform its obligations under the Contract.

**CLAUSE 3**

In any case in which under any clause or clauses of this Contract the Bidder shall have rendered himself liable to pay compensation amounting to the whole of the Security Deposit (whether paid in one sum or deducted by instalments) or in the case of abandonment of the Work owing to serious illness or death of the Bidder or any other cause, the Engineer-In-Charge, on behalf of ABC shall have the power to adopt any of the following courses, as *Action when whole of security deposit is forfeited*

he may deem best suited to the interest of the ABC:

(a) To rescind the Bidder (for which rescission notice in writing to the Bidder under the hand of Engineer-In-Charge shall be conclusive evidence) and in that case the Security Deposit of the Bidder shall stand forfeited and be absolutely at the disposal of ABC.

(b) To carry out the Work or any part of the Work departmentally debiting the Bidder with the cost of the Work, expenditure incurred on tools and plant and charges on additional supervisory staff including the cost of work charge establishment employed for getting unexecuted part of the Work completed and crediting him with the value of the Work done departmentally in all respects in the same manner and at the same rates as if it had been carried out by the Bidder under the terms of his Contract. The certificate of the Chief Officer as to the costs and other allied expenses incurred and as to the Work so done departmentally shall be final and conclusive against the Bidder.

(c) To order that the Work of the Bidder be measured up and to take such part thereof as shall be unexecuted, out of his hands and to give it to another person to complete, in which case all expenses incurred on advertisement for fixing a new contracting agency, additional supervisory staff including the cost of work charged and the cost of the work executed by the new contract agency shall be borne by the Bidder. Further, if the cost of having such work executed by the new contractor exceeds the amount that would have been payable to the Bidder under this Contract, such excess amount shall be borne by the Bidder. Determination by the Chief Officer of such excess amounts, if any, shall be final and binding on the Bidder.

In case the Contract shall be rescinded under clause [a] above, the Bidder shall not be entitled to recover or be paid, any sum for any work therefore actually performed by him under his Contract unless and until the Chief Officer in charge shall have certified in writing the performance of such work and the amount payable to him in respect thereof. The Bidder shall have no claim to compensation for any loss sustained by him by reason of having purchased or procured or not having purchased or procured, any materials, or entered into any engagements or made any advances on account of or with a view of the execution of the Works or the performance of the Contract.

**CLAUSE 4**

If the progress of any particular portion of the work is unsatisfactory or not in accordance with the minimum technical specification applicable to the Scope of Work as set out in the Contract, the Chief Officer shall notwithstanding that the general progress of the Work is in accordance with the timelines mentioned in Clause 2 be entitled to take action under Clause 3 [b] after giving the Bidder 10 (ten) days' notice in writing. The Bidder will have no claim for compensation for any loss sustained by him owing to such action.

*Action when the Progress of any Particular Portion of the Work is Unsatisfactory*

**CLAUSE 5**

In any case in which any of the powers conferred upon the Chief Officer by clauses 3 and 4 hereof shall have become exercisable and the same shall not

have been exercised, such non-exercise thereof shall not constitute a waiver of any of the rights, remedies or conditions thereof. Such powers shall be exercisable in the event of any future case of default by the Bidder for which under any clauses hereof, he is liable to pay compensation amounting to the whole of his Security Deposit and the liability of the Bidder for past and future compensation can remain unaffected in the event of the Engineer-In-Charge taking action under sub clause [a] or [c] of clause 3 he may, in his discretion, take possession of all or any tools, plant, materials and stores, in or upon the Works or the Site thereof belonging to the Bidder, 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, or in the case of Contract rates not being applicable at current market rates, to be certified by the Engineer-In-Charge whose certificate thereof shall be final. In the alternative, the Engineer-In-Charge may, after giving notice in writing to the Bidder require him to remove such tools, plants, materials or stores from the premises within a time to be specified in such notice and in the event of the Bidder failing to comply with any such requisition, the Engineer-In-Charge may remove them at the Bidder's expense and sell them by auction or private sale on account of the Bidder and at his risk in all respects, and the certificate of the Engineer-In-Charge as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the Bidder.

*Bidder remains liable to pay compensation if action not taken in Cl. 3 and 4*

*Power to Take Possession of or sale of Bidder's plant*

**CLAUSE 6**

Extension of time for completion of the Works may be granted by the Engineer-In-Charge or Chief Officer, as the case may be, only upon occurrence of any the following events:

*Extension of Time*

Failure to perform any action by ABC under the Contract (other than a failure to make payments to the Contractor) which directly results in the Contractor delaying the execution of the Works,;

For any event of Force Majeure which has been intimated to the ABC;

Any default by the Contractor which has the ability of being cured in the opinion of the Engineer-In-Charge; and

Delay from MPCB or MJP or from various government department in obtaining the necessary technical sanction and approval if any.

If the Bidder shall desire an extension of time on any of the above grounds, he shall apply in writing to the Engineer-In-Charge before the expiry of 30 (thirty) days from the date on which he was hindered as aforesaid or on which the cause for asking for extension occurred, whichever is earlier. If the Engineer-In-Charge or the Chief Officer, as the case may be, is of the opinion, that there were reasonable grounds for granting an extension, then he may grant such extension as he thinks necessary or proper. The decision of the Engineer-In-Charge in this matter shall be final.

**CLAUSE 7 (A)**

**Completion of Fecal Sludge & Septage treatment plant**

Monthly Progress Notice

Till issuance of the final certificate, the Bidder shall submit to the ABC after the end of each month, six copies, each signed by the [Bidder's Representative] of monthly progress, a notice (the "**Monthly Progress Notice**") in such form as the ABC may from time to time prescribe, showing the percentage of completion of Works that the Bidder considers it has effected in the preceding month.

If the ABC notifies the Bidder of any defects or deficiencies, or both, in any of the Design-Build Services, the Bidder shall then correct the defects or deficiencies, and shall repeat the procedure.

Completion

As soon as the Design-Build Services have, in the opinion of the Bidder, been completed in accordance with the scope of work and Technical Standards specifications, excluding minor items not materially affecting the operation or safety of the Fecal Sludge & Septage treatment plant and has satisfactorily passed all necessary tests on Commissioning, the Bidder shall so notify the ABC in writing (the "**Notice of Completion**") and provide the as-built Design-Build Documents.

The ABC shall, no later than 30 (thirty) days after receipt of the Bidder's notice either issue a Completion Certificate stating that the Fecal Sludge & Septage treatment plant has reached completion as of the date of the Bidder's notice or notify the Bidder in writing of any defects or deficiencies or both.

If the ABC is not satisfied that the Design-Build Services are complete, the ABC shall notify the Bidder in writing of any defects or deficiencies no later than 7 (seven) days after receipt of the Notice of Completion.

If the ABC notifies the Bidder of any defects or deficiencies or both, the Bidder shall then correct such defects or deficiencies, and shall repeat the procedure.

If the ABC is satisfied that the Design-Build Services have reached completion, the ABC shall, no later than 7 (seven) days after receipt of the Bidder's repeated Notice of Completion, issue a Completion Certificate stating that the Design-Build Services have reached Completion as of the date of the Bidder's repeated Notice of Completion.

If the ABC fails to issue the Completion Certificate and fails to inform the Bidder of any defects or deficiencies 14 (fourteen) days after receipt of the Notice of Completion or 7 (seven) days after receipt of the Bidder's repeated Notice of Completion, then the Design-Build Services shall be deemed to have reached Completion as of the date of the Notice of Completion or repeated

Notice of Completion as the case may be.

As soon as possible after Completion, the Bidder shall complete all outstanding minor items so that the Fecal Sludge & Septage treatment plant site are fully in accordance with the requirements of the Contract, failing which the ABC will undertake such completion and deduct the costs thereof from any monies owing to the Bidder.

**CLAUSE 7 (B)**

**Commissioning and Operational Acceptance**

Commissioning

Commissioning of the Fecal Sludge & Septage treatment plant shall be commenced by the Bidder immediately after issue of the Completion Certificate by the Engineer-In-Charge.

Tests on Commissioning

The necessary test shall be conducted by the Bidder during Commissioning of the Fecal Sludge & Septage treatment plant and all allied works to ascertain whether the Fecal Sludge & Septage treatment plant or the relevant part can attain the technical standards as required in the Contract. The Bidder's and Engineer-in-Charge's advisory personnel shall attend the Tests on Commissioning, and shall advise and assist the ABC. The ABC shall promptly provide the Bidder with such information as the Bidder may reasonably require in relation to the conduct and results of the Tests on Commissioning, and any repeats thereof.

If for reasons not attributable to the Bidder, the Tests on Commissioning of the Fecal Sludge & Septage treatment plant cannot be successfully completed within 21 (twenty one) days after the period from the date of completion specified or any other period agreed upon by the ABC and the Bidder, the Bidder shall be deemed to have not fulfilled its obligations with respect to the tests on commissioning.

Operational Acceptance

Operational acceptance shall occur in respect of the Fecal Sludge & Septage treatment plant when the Tests on Commissioning have been successfully completed.

At any time after the successful completion of the Tests on Commissioning, the Bidder may give a notice to the ABC requesting the issue of an operational acceptance certificate ("**Operational Acceptance Certificate**") in respect of the Fecal Sludge & Septage treatment plant.

The ABC shall, after consultation with the experts, and no later than 7 (seven) days after receipt of the Bidder's notice, issue an Operational Acceptance Certificate.

If within 7 (seven) days after receipt of the Bidder's notice, the ABC fails to

issue the Operational Acceptance Certificate or fails to inform the Bidder in writing of the justifiable reasons why the ABC has not issued the Operational Acceptance Certificate, the Fecal Sludge & Septage treatment plant shall be deemed to have been accepted as of the date of the Bidder's said notice.

**CLAUSE 7 (C)**

On the completion of the Works the Bidder shall be furnished with a certificate by the Chief Officer (hereinafter called the Engineer-In-Charge) of such completion, but no such certificate shall be given nor shall the Work be considered to be complete until the Bidder shall have removed from the premises on which the Work shall have been executed, all scaffoldings, surplus materials and rubbish, and shall have cleaned off the dirt from all wood work, doors, windows, walls, floors or other parts of any building in or upon which the work has been executed, or of which he may had possession for the purpose of executing the Work, nor until the Work shall have been measured by the Engineer-In-Charge, the said measurements being binding and conclusive against the Bidder. If the Bidder fails to comply with the requirements of this clause, the Engineer-in-charge may at the expenses of the Bidder, carry out such works itself and the Bidder shall forthwith pay the amount of all expenses so incurred, but shall have no claim in respect of any such scaffoldings or surplus materials as aforesaid.

*Final Certificate*

**CLAUSE 8**

No additional payment shall be made for any part of the work.

*Payment on  
intermediate Certificate  
to be regarded as  
Advance*

**CLAUSE 9 [Deleted]**

**CLAUSE 10**

A bill shall be submitted by the Bidder at monthly intervals in accordance with the milestones mentioned under payment schedule for all Works executed in the previous billing cycle. The Engineer-In-Charge shall review the bill and make adjustments, if any, within 10 (ten) days from the presentation of the bill. If the Bidder does not submit the bill within the aforesaid time, the Engineer-in-charge may depute a subordinate to measure the said work in the presence of the Bidder or his duly authorized agent whose counter signature to the measurement list shall be sufficient warrant, and the Engineer-in-Charge may prepare a bill from such list which shall be binding on the Bidder in all respects.

*Bills to be submitted*

Each bill will be raised in accordance with Applicable Law and accompanied by all supporting documents, evidencing the Works actually executed during such period.

If the bills raised are not accompanied by the supporting documents or, if



any part of the bill is disputed by the ABC for reasons recorded in writing, then the disputed portion of the bill shall not be due and payable by the ABC until the relevant supporting documents are delivered or, the dispute is resolved in accordance with this Contract. Notwithstanding any dispute pertaining to the bill, the Contractor shall continue to perform its obligations. Payment of any bills shall not be deemed to constitute acceptance by the ABC of the Works executed by the contractor.

**CLAUSE 11 [Deleted]**

**CLAUSE 12 [Deleted]**

**CLAUSE 12-A [Deleted]**

**CLAUSE 13 [Deleted]**

**CLAUSE 14 [Deleted]**

**CLAUSE 15 [Deleted]**

**CLAUSE 15 ( A ) [Deleted]**

**CLAUSE 16 [Deleted]**

**CLAUSE 17**

If at any time before the Security Deposit is refunded to the Bidder, it appears to the Engineer-In-Charge, that any Work has been executed with unsound, imperfect or unskilful workmanship or with materials of inferior quality or that any materials or articles provided by him for the execution of the Work are unsound, or of a quality inferior to that contracted for, or are otherwise not in accordance with the Contract ("**Bad Work**"), the Engineer-In-Charge shall notify the Bidder of the same in writing and then notwithstanding the fact that the work, materials or articles complained of may have been inadvertently passed, certified and paid for, the Bidder shall be bound forth with to rectify, replace, remove or reconstruct the Bad Work at his own cost, such that the replaced/ repaired works comply with the requirements of the Contract (as confirmed by the Engineer-In-Charge in writing). In the event the Bidder fails to do so within the period specified in the notice from the Engineer-In-Charge, the Bidder shall be liable to pay compensation at the rate of 1% (one percent) [of the amount of the

*Action and Compensation Payable in case of Bad Work.*

estimate for every day, not exceeding 10 (ten) days during which the failure so continues. Further, in the event of any such failure as aforesaid the Engineer-In-Charge may rectify or remove and re-execute or remove or replace the materials or articles complained of, as the case may be, at the risk and expense of the Bidder. Should the Engineer-in-charge consider that any such inferior work or materials as described above may be accepted or used, it shall be within his discretion to accept the same at such reduced rates as he may fix therefore. The decision of the Engineer in Charge with respect to the quality of Work and its compliance with the specifications set out in the Contract executed shall be final and binding on the Bidder.

The parties agree that the damages set out in this clause are a genuine pre-estimate of the loss likely to be suffered by the ABC in case of delay by the Contractor in fulfilling its obligations under this Contract. Levy of damages shall be without prejudice to the other rights and remedies of the ABC under the Contract or Applicable Law. Notwithstanding such payment, the contractor shall continue to perform its obligations under the Contract.

**CLAUSE 18**

All works under or in course of execution or executed in pursuance of the Contract shall at all times be open to inspection and supervision of the Engineer-in-charge and his subordinates, and the Bidder shall at all times during usual working hours, and at all other times at which reasonable notice of the intention of the Engineer-in-charge and his subordinate to visit the Works shall have been given to the Bidder, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the Bidder's duly authorized agent shall be considered to have the same force and effect as if they had been given to the Bidder himself.

*Work to be open for Inspection*

*Bidder or responsible agent to be present*

**CLAUSE 19**

The Bidder shall give not less than a 5 (five) day notice in writing to the Engineer-in-charge of the Work before covering up or otherwise placing beyond the reach of measurement any Work in order that the same may be measured, and correct dimensions thereof taken, and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Engineer-In-Charge. If any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at the Bidder's expense, and in default thereof no payment or allowances shall be made for such Work.

*Notice to be given before Work is covered.*

**CLAUSE 20**

All Works supplied by the Contractor shall be under warranty during the Defects Liability Period and the Contractor shall promptly correct any errors, omissions, defects or deficiencies in the Works, re-perform any part of the scope of Work, repair, replace or otherwise make good such defects or deficiencies to restore 100% (one hundred percent) functionality. Any repaired or replaced products or part thereof shall be covered under warranty for the remainder of the Defects Liability Period.

*Bidder liable for damage done and for imperfections for certain period after Certificate.*

**CLAUSE 21**

The Bidder shall procure all material, plant and equipment, tools, required for execution of the Works.

*Bidder to supply plant, etc.*

**CLAUSE 21 (A) [Deleted]**

**CLAUSE 21 (B) [Deleted]**

**CLAUSE 22**

The Bidder shall not set fire to any standing jungle, trees, brushwood or grass without a written permission from the Engineer-in-Charge. When such permit is given and also in all cases when destroying cut or dug up trees, brushwood, grass etc. by the fire, the Bidder shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property. The Bidder shall make his own arrangements for drinking water for the labour, personnel and staff employed, engaged or such contracted by him.

*Measure for prevention of fire and arrangement for drinking water*

**CLAUSE 23**

Compensation for all damages done intentionally or unintentionally by Bidder's labour whether in or beyond the limits of the ABC property including any damage caused by the spreading of the fire mentioned in clause 22 shall be estimated by the Engineer-In-Charge or such other officer as he may appoint and the estimate of the Engineer-In-Charge shall be final and the Bidder shall be bound to pay the amount of the assessed compensation as demanded, failing which the same will be recovered from the Bidder as damages or deducted by the Engineer-in-Charge from any sums that may be due or become due from ABC to Bidder under this Contract.

*Liability of Bidder for any damage done in or outside work area.*

The Bidder shall bear the expenses of defending any action or other legal proceeding that may be brought by any person for injury sustained by him owing to neglect of precautions to prevent the spread of fire and he shall pay any damages and cost that may be awarded by the court in consequence.

**CLAUSE 24 [Deleted]**

**CLAUSE 25**

No work shall be done on Sunday, without the sanction in writing of the Engineer-in-charge.

*Work on Sunday etc.*

**CLAUSE 26 [Deleted]**

**CLAUSE 27 [Deleted]**

**CLAUSE 28**

In case of tender by partners, company or joint venture, any change in the constitution or control of the firm, company or joint venture shall be with prior

*Changes in the Constitution of the firm to be notified*

written permission of the Chief Officer of the ABC.

**CLAUSE 29**

All Works to be executed under the Contract shall be executed under the direction and subject to the approval in all respects of the Municipal Engineer / City Engineer of the ABC for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced, carried on, and completed.

*Direction and control of the Superintending Engineer.*

**CLAUSE 30 : [Deleted]**

**CLAUSE 31 [Deleted]**

**CLAUSE 32 : [Deleted]**

**CLAUSE 33 : [Deleted]**

**CLAUSE 34 : [Deleted]**

**CLAUSE 35 : [Deleted]**

**CLAUSE 36 : [Deleted]**

**CLAUSE 37**

The Bidder shall be responsible for and shall pay any compensation to his workmen payable under the Workmen's Compensation Act, 1923 ("Act") for injuries caused to the workmen. If such compensation is payable/paid by ABC as principal under sub-section (1) of section 12 of the said Act on behalf of the Bidder, it shall be recoverable by ABC from the Bidder under sub-section (2) of the said section; such compensation shall be recovered in the manner laid down in Clause I above.

*Definition of Work.*

*Bidder's percentage whether applied to net or gross amount of bill.*

**CLAUSE 37 (A)**

The Bidder shall be responsible and shall pay the expenses for providing medical aid to any workman who may suffer a bodily injury as a result of an accident. If such expenses are incurred by ABC the same shall be recoverable from the Bidder forthwith and be deducted without prejudice to any other remedy of ABC from any amount due or that may become due to the Bidder.

**CLAUSE 37 (B)**

The Bidder shall provide all necessary safety equipment and first aid apparatus available for the use of the persons employed on the Site and shall maintain the same in condition suitable for immediate use at any time and shall comply with the following regulations in connection therewith.

(a) The workers shall be required to use the equipment so provided by the Bidder and shall take adequate steps to ensure proper use of the equipment by those concerned.

(b) When work is carried on the proximity to any place where there is risk or

danger all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.

(c) Adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.

**CLAUSE 37 (C)**

The Bidder shall duly comply with the provisions of "The Apprentices Act, 1961", the rules made there under and the orders that may be issued from time to time under the Act and the said rules and upon his failure or neglect to do so, he shall be subject to all the liabilities and penalties provided by the said Act and the said rules.

*Claim for quantities entered in the tender/estimate*

**CLAUSE 38 [Deleted]**

**CLAUSE 39 [Deleted]**

**CLAUSE 40**

No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or in the case of clearance works, on account of any delay in accordance with the sanctioned estimate.

*Claims for compensation for delay in starting the work.*

**CLAUSE 41**

No compensation shall be allowed for any delays in the execution of the work on account of water standing in borrow pits or compartments and no additional claim shall be entertained.

*Claims for compensation for delay in starting the work*

**CLAUSE 42**

The Bidder shall not enter upon or commence any portion of work except with the written authority and instructions of the Engineer-in-Charge or of his subordinate in charge of the Work. Failing such authority the Bidder shall have no claim to ask for the measurements of or payment for the Work.

*Entering upon or commencing any portion of work.*

**CLAUSE 43**

(a) No Bidder shall employ any person who is under the age of 12 (twelve) years.

*Minimum age of persons employed, the employment of donkeys and for other animals and the payment of fair wages.*

(b) No Bidder shall employ donkeys or other animals with breaching of string or thin ropes. The breaching must be at least 3 (three) inches wide and should be of tape (newer).

(c) No animal suffering from sores, lameness or emaciation or which is immature shall be employed on the Work.

The Engineer-in-Charge or his agent are authorized to remove from the Work, any person or animal found working which does not satisfy these conditions and no responsibility shall be accepted by ABC for any delay caused in the completion of the Work by such removal.

The Bidder shall pay fair and reasonable wages to the workmen employed by him in the Contract undertaken by him. In the event of any dispute arising between the Bidder and his workmen on the ground that the wages paid are not fair and reasonable the dispute shall be referred without delay to the Engineer-in-charge who shall decide the same. The decision of the Engineer-in-Charge shall be conclusive and binding on the Bidder but such decision shall not in any way affect the condition in the Contract regarding the payment to be made by the ABC at the sanctioned tender rates.

Bidder shall provide drinking water facilities to the workers. Similar amenities shall be provided to the workers engaged in the large work in urban areas.

Bidder to take precaution against accidents which take place on account of labour using loose garments while working near machinery.

**CLAUSE 44**

Payment to Bidder by the ABC shall be made by cheque drawn on any bank within the division convenient to it provided the amount exceeds Rs. 10/- *Method of payment*  
Amount not exceeding Rs. 10/ - will be paid in cash.

**CLAUSE 45 [Deleted]**

**CLAUSE 46**

If Government declares a state of scarcity or famine to exist in any village situated within 16Kms. of the Work, the Bidder shall employ upon such parts of the Work, as are suitable for unskilled labour, any person certified him by the Engineer-in-Charge or be any person to whom the Engineer in charge may have delegated this duty in writing, to be in need of relief and shall be bound to pay to such person wages not below the minimum, which Government may have fixed in this behalf. Any dispute which may arise in connection with the implementation of this clause shall be decided by the Engineer-in-Charge whose decision shall be final and binding on the Bidder. *Employment of scarcity labour.*

**CLAUSE 47 [Deleted]**

**CLAUSE 48**

The price bid quoted under the tender shall be inclusive of all applicable taxes, rates and shall also be inclusive of tax liable in respect of works Contract under the provision of State Sales Tax on transfer of property in goods involved in the execution of Works Contract Act, 1985 [State XYZ. Act XIX of 1985] as amended from time to time and the works Contract will be deducted as T.D.S. as per circular of sale tax department. Tender rate is also inclusive of VAT and Service Tax if any.

**CLAUSE 49 [Deleted]**

**CLAUSE 50 :**

The Bidder shall employ at least 80% of the total number of unskilled labour to be employed by him on the said work from out of person *Employment of local labour*

ordinary residing in the district in which site of the said work will be located. Provided however, if the required number of unskilled labour from that district is not available, the Bidder shall in the first instance employ such number of person as is available and thereafter may, with previous permission in writing of the Engineer-in-Charge of the said work, obtain the rest of requirement of unskilled labour from outside district.

**CLAUSE 51**

The Bidder undertakes to pay the labourers, both skilled and unskilled, in accordance with the wages prescribed by the Minimum Wages Act, 1948 (“**Minimum Wages Act**”) as and when revised by the Government applicable to the area in which the Work of the Bidder is located. The Bidder shall comply with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the Contract and the Municipal/ City Engineer, may in his discretion, cancel the Contract. The Bidder shall also be liable for any pecuniary liability arising on account of any violation by him of the provision of Act. The Bidder shall pay the labourers skilled and unskilled according to wages prescribed by Minimum Wages Act applicable to the area in which the Work lies.

*Wages to be paid to the skilled and unskilled labourers engaged by the Bidder.*

**CLAUSE 52**

All amounts whatsoever which the Bidder is liable to pay to the ABC in connection with the execution of the Work including amounts payable for receipt of (1) materials and/or stores supplied/issued hereunder by the ABC to the Bidder (2) hire charges in respect of heavy plant, machinery and the equipment given on hire by the ABC to the Bidder for execution by him of the Work and/or on which advances have been given by the ABC to the Bidder shall be deemed to be arrears of the Land Revenue and the ABC may without prejudice to any other right and remedies of the ABC recover the same from the Bidder of arrears of land revenue.

Hiring of machinery

**CLAUSE 53**

The successful tenderers will be required to produce to the satisfaction of the specified concerned authority a valid and consequent license issued in favour of the Bidder under the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 before starting the Work. On failure to do so, the acceptance of the tender should be liable to the withdrawn and also earnest money.

State Govt. Contract Labour (Rules 1977)

The Bidder shall duly comply with all the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) and the State Govt. Contract Labour (Regulation and Abolition) Rules 1971 as amended from time to time and all other relevant statutes and statutory provisions concerning payments of the wages particularly to workmen employed by the Bidder and working on the Site of the Work. In particular the Bidder shall pay wages to each worker employed by him on the Site of the Work at the

rates prescribed under the State Govt. Contract Labour (Regulation and Abolition) Rules 1971. If the Bidder fails or neglects to pay wages at the said rates and makes short payment and the ABC makes such payment or wages in full or part thereof less paid by the Bidder, as the case may be, the amount paid by the ABC to such workers shall be deemed to be arrears of land revenue and the ABC shall be entitled to recover the same as such from the Bidder or deduct same from the amount payable by the ABC to the Bidder hereunder or from any other amount payable to him by the ABC.

**CLAUSE 54**

The Bidder shall duly comply with all the provisions of the State Tax on the Professions and Tenders Callings and Employment Act, 1975 (See Rule 3(2)). The Bidder shall obtain certificate of registration clearance certificates and when demanded.

Professional Tax

**CLAUSE 55**

The Bidder shall duly comply with all the provisions of the State Govt. Value Added Tax Act, 2005 (“MVAT”) Rule 58 on the transfer of goods involved in the execution of works contracts. As per the State Govt. Value Added Tax on the transfer of property in goods involved in the execution of works contracts of the contract rules, the amount of tax deducted at source is 2% in respect of bidders registered under MVAT Act, 2005 and 4% in respect of Bidders not registered under MVAT Act, 2005 from every payment made towards such Contracts where the aggregate amount payable is more than INR 50,000/- (Indian rupees fifty thousand) during one year. In the event, the MVAT is replaced by any other goods and service tax, the Bidder shall comply with such Applicable Laws.

State Govt. value added tax

**CLAUSE 56**

The Bidder shall make arrangement to supply fuel for domestic use to all the labourers engaged onsite and prevent the labour from cutting trees for the purpose of fuel. If the Bidder’s labour is found to have cut the trees, the Bidder shall be held responsible for the same and shall be punished as per the provision in Forest Conservation Act, 1980.

Fuel arrangement for labourers of Bidders

**CLAUSE 57**

Where the workers are required to work near the machine and are liable to suffer any injury due to the occurrence of accidents, they should not be allowed to wear loose cloths like Dhoti, Jhabba etc.

**CLAUSE 59**

In view of the difficult position regarding the availability of foreign exchange, no foreign exchange shall be released by the ABC for the purchase of the plant and machinery required for the execution of the work Contract.

**CLAUSE 60**

**Price variation clause – Not applicable**

**CLAUSE 61**



In case of dispute regarding the provisions of any items precedence to decide the provision will be as below :-

- i) General Condition of Contract;
- ii) Special Conditions of Contract;
- iii) Additional Conditions of Contract;
- iv) Scope of Works (section 6).

**CLAUSE 62**

Insurance policy – State Govt. resolution dated 19-8-98

Bidders shall take out necessary Insurance Policy/ policies so as to provide adequate insurance cover for execution of the awarded Contract work from the director of Insurance XYZ State –51 only. Its postal address for correspondence is “ \_\_\_\_\_ ” (Tel. No. xxxxxxxx/ xxxxxxxx). The successful bidder shall procure the insurance for the following:

Loss of or damage to the civil and mechanical and electrical equipment supplied/ installed including the materials such as pipes, valves, specials etc. brought on site;

Loss of or damage to Bidder’s equipment including his vehicles;

Loss of or damage to property (except the work, plant material and equipment) in connection with the Bidder;

Loss of or damage to property (except the work, plant material and equipment) in connection with the Bidder; and

Personal injury or death due to vehicles of the Bidder and / or due to any accident that may arise at or around Site to the Bidder’s personnel or to the ABC/MJP staff or to any other person connected with MJP /ABC Bidder.

Policies and certificates for insurance shall be delivered by the Bidder to the Engineer for the Engineer’s approval before the date of actual starting of Work. All such insurance shall provide for compensation to be payable in the types of proportions of currencies required to rectify the loss of damage incurred.

If the Bidder does not produce any of the required polices and certificates, the Engineer may affect the insurance for which the Bidder was responsible.

The minimum insurance cover for loss and damage to physical property, injury and death shall be 10% (ten percent) of the Contract cost per occurrence with number of occurrences as 4 (four). After each occurrence the Bidder shall pay additional premium necessary so as to keep the insurance policy valid always till the defect liability period is over.

No payment will be released to the Bidder until the insurance coverage with the Government insurance fund, State is provided and unless the proof of insurance coverage is produced by the Bidder to the Engineer-in-charge.

Contractors all risk (Bidder's all risk policy) insurance will have to be taken before start of the Work.

**CLAUSE 63 [Deleted]**

**CLAUSE 64**

The Bidder shall provide and maintain barricades, guards, guard rails, temporary bridges and walkways, watchmen, headlights, appliances and safeguards to protect the Work, life, property, the public, excavations, equipment and materials. Barricades shall be substantial construction and shall be painted such as to increase their visibility at night. For any accident arising out of the neglect of above instructions, the Bidder shall be bound to bear the expenses of defences of every suit, action or other legal proceedings, at law, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay all damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the Bidder be paid in compromising any claim by any such person.

**CLAUSE 65**

If Bidder fails to keep satisfactory progress of Work even after implementing action under provision of clause 2 along with other actions to be adopted that are deemed suitable under any clause of this agreement, on sending appropriate notice of 10 (ten) days, its name will be recommended for black listing / removal as registered Bidder to concerned authority.

**CLAUSE 66**

Contractor defaults shall include but not be limited to the following:

If the Contractor:

has abandoned or repudiated the Contract; or  
without reasonable excuse has failed to commence the Works within 7 (seven) days after order to commence the Works has been issued by the Engineer-In-Charge or thereafter has suspended the progress of the Works or any part of the Works for an aggregate period of 15 (fifteen) days; or  
despite previous written warnings from the Engineer-in-charge or the ABC, is not carrying out the Works or any part of the Works in accordance with the Contract or is refusing or failing to observe or perform any other term, provision of condition of the Contract; or  
without the prior written consent of the Engineer-in-charge, has assigned or purported to assign the Contract or any part thereof or any benefit, obligation or interest therein or thereunder; or  
has or has purported to subcontract the Works in breach of the provisions of

*Termination of contract*

the Contract;

has for a period of not less than 7 (seven) days refused or failed to act in accordance with any instructions or order of the ABC or Engineer-in-charge;

has failed to complete the Works within the time for completion or failed to remedy any defect or error in the Works during the Defects Liability Period within the time stipulated for the same by the Engineer-In-Charge;

has committed any material breach of the Contract;

has compounded with or negotiated for composition with creditors or has entered liquidation under Applicable Law.

**Termination for Contractor Event of Default:** If the ABC decides to terminate the Contract due to default under the Contract by the Bidder, the following provisions will apply:

In the first instance, the ABC will issue preliminary notice to the Contractor. Within 30 (thirty) days of receipt of preliminary notice, the Contractor shall submit to ABC in sufficient detail, the manner in which he proposes to cure the underlying event of default. In case the Contractor does not submit a proposal for rectification within 30 (thirty) days, ABC shall be entitled to terminate this Contract by issuing termination notice and to appropriate the Security Deposit/**Performance Guarantee**. If the total amount due to the ABC exceeds any payment due to the Contractor, the difference shall be a debt payable to the ABC.

If the Contractor's proposal to rectify the underlying event of default is submitted within the period stipulated therefor, the Contractor shall have a further period of 30 (thirty) days to remedy/cure the underlying event of default to the satisfaction of the Engineer-in-Chief. If, however the Contractor fails to remedy/cure the underlying event of default within such period, ABC shall be entitled to terminate this Contract, by issue of termination notice and to appropriate the Security Deposit/**Performance Guarantee** and carry out the operations by itself or through a third party at the risk and cost of the Contractor. If the total amount due to the ABC exceeds any payment due to the Contractor, the difference shall be a debt payable to the ABC.

**Termination for ABC Event of Default:** The Contractor shall have the right to terminate the Contract if there is a delay in payments by the ABC exceeding 6 (six) months. In such event, the following provisions will apply:

In the first instance, the Contractor will issue preliminary notice to the ABC. Within 30 (thirty) days of receipt of preliminary notice, the ABC shall submit to Contractor, the manner in which they propose to arrange for funding. In case ABC does not submit the proposal within 30 (thirty)days, the Contractor shall be entitled to terminate this Contract by issuing termination notice and be entitled to payments for the work done and the Security Deposit/**Performance Guarantee** deposited with the ABC.

If the ABC's proposal to arrange for funding is submitted within the period stipulated therefor, the ABC shall have a further period of 30 (thirty)days to arrange for payment. If, however the ABC fails to remedy/cure the underlying event of default within such further period allowed, the Contractor shall be entitled to terminate this Contract by issuing termination notice and be entitled

to payments for the Work done (as determined by the Engineer-In-Charge) and the Security Deposit/ **Performance Guarantee** deposited with the ABC, subject to adjustments for any amounts due from the Bidder to ABC under this Contract.

**Termination at will:** If ABC needs to terminate the Contract for causes unrelated to those given above, it will be treated as 'termination at will' and the following clauses will apply:

A notice of termination shall be required to be given [three months] before such termination at will.

The payment for the completed Work and the Security Deposit deposited with the ABC will be given back to Contractor. However, any amounts due to the ABC from the Contractor shall be set off against Security Deposit and in the event such amount is in excess of the Security Deposit/ **Performance Guarantee**, the excess amount shall be treated as an amount due towards the ABC.

#### **CLAUSE 67**

##### **FORCE MAJEURE**

Any of the following events (each a "**Force Majeure Event**") which is beyond the control of the party claiming to be affected thereby ("**Affected Party**"), and which the Affected Party has been unable to overcome or prevent despite exercise of due care and diligence, shall constitute Force Majeure Event: *Force Majeure*

Earthquake, flood, inundation and landslide.

Storm, tempest, hurricane, cyclone, lightning, thunder or other extreme atmospheric disturbances.

Fire caused by reasons not attributable to the contractor or any of the employees, or agents of the contractor.

Acts of terrorism.

Strikes, labour disruptions, any other disruptions or public unrest not arising on account of acts of the contractor.

Action of Government agencies having adverse effect on the Contract, including but not limited to

Any judgment or order of a court of competent jurisdiction or statutory authority in India made against the Contractor in any proceeding, which is non-collusive and duly prosecuted.

Any unlawful, unauthorized or without jurisdiction refusal to issue or to renew or the revocation of any applicable permits, in each case for reason other than the Contractor's breach or failure in complying with requirements defined in the Contract, Applicable Laws, applicable permits, any judgment or order of any Government agency or of any Contract by which the Contractor, as the case may be, is bound.

Early termination of this Contract by ABC for reason of national emergency or national security.

War, hostilities (whether declared or not), invasion, act of foreign enemy, rebellion, riots, weapon conflict or military actions, civil war, ionising radiation, contamination by radioactivity from nuclear fuel, any nuclear waste, radioactive toxic explosion, volcanic eruptions.

Strikes, work to rule actions, go slow or similar labour difficulty in the city as a whole and not specific to the work.

Any resistance from the citizens or any other groups not allowing to perform the project/Work as stipulated in the tender.

**CLAUSE 68**

The Party claiming Force Majeure shall inform the other Party of the Force Majeure Event within 7 (seven) days of its occurrence. The efforts made by the Affected Party in overcoming the effects will be conveyed to the other Party with supporting data.

*Procedure for calling Force Majeure*

The Affected Party shall not be responsible or liable for any failure or delay in performance under the Contract on account of Force Majeure, provided it has provided the notice referred in sub-clause (a) above within the time stipulated.

Each party shall use reasonable efforts to mitigate the effects of any event or circumstances of Force Majeure. They will cooperate to develop and implement a plan of remedial and reasonable alternative measures to remove the event of Force Majeure. The Affected Party should take lead to resume normal performance of its obligation under the tender conditions.

The period allowed for restoration of the normal performance by the Affected Party of its obligation shall be extended on day to day basis based on mutual consent of the Parties.

When the Affected Party is able to resume performance of its obligations under this Contract, it shall promptly give the other Party a written notice to that effect.

The rights and obligations of the Affected Party shall be suspended to the extent they are affected by the Force Majeure; ABC shall not be liable to make any payment to the Contractor for him being affected on account of Force Majeure. In this situation, the Contractor shall only be paid for the work completed, since unforeseen situation should be shared by both, ABC and Contractor.

The Affected Party shall also inform the other Party of cessation of the Force Majeure or circumstances which allow resumption of Work.

**CLAUSE 69**

The Contractor shall not be considered to be in breach of his obligation under this Contract nor shall it incur or suffer any liability if and to the extent performance of any of his obligations under this Contract is affected by or on account of any of the following:

*No breach of obligations*

Force Majeure Event.

Compliance with the instruction of the ABC /representative of ABC or the directions of any Government agency other than instructions issued as a consequence of a breach by the Contract of any its obligations hereunder.

If the payment due to the Contractor is delayed by 6 (six) months and the Contractor suspends work.

**CLAUSE 70**

**CLAUSE 71**

Prospective bidders cannot undertake erasures in the text of the given bid document and any alternations made by them would be disregarded. If there is any error in writing, no overwriting should be done. Instead, the wrong words or figures should be struck out and the correct one should be written above or near it in an unambiguous way. Such correction should be duly signed and dated.

*Erasure*

**CLAUSE 72**

**Representation and Warranties**

1. Each Party represents and warrants the following, each of which is true and correct as on the date of this Contract and which representations and warranties shall continue to be true and correct throughout the term of this Contract:

*Representations and Warranties*

- (i) it is validly existing under the laws of the place of its incorporation and has the power and authority to carry on its business;
- (ii) it has obtained all corporate and other authorisations necessary for it to enter into this Contract and the transactions contemplated under it;
- (iii) this Contract constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof;
- (iv) the execution, delivery and performance of this Contract does not and will not conflict with, result in the breach of, or constitute a default under, its constitutional documents, Applicable Laws, or any contract, arrangement, to which it is a party or by which it is bound; and there are no actions, suits, proceedings, or investigations pending or, to the best of its knowledge, threatened against it before any court or any other judicial, quasi-judicial or other authority, the outcome of which might materially and adversely affect its performance under this Contract.

2. The Contractor represents and warrants to the ABC the following, each of which is true and correct as on the date of this Contract and which representations and warranties shall continue to be true and correct throughout the term of this Contract:

- (i) The materials to be supplied by the Contractor under this Contract shall be free and clear of all liens and encumbrances; and it has carefully examined the Bid Documents and other documents and data pertaining to its Scope of Work and necessary for the performance of its obligations hereunder.

**CLAUSE 73**

**Contractor’s Obligations**

The Contractor shall:

- (i) execute the scope, in accordance with this Contract, good industry practice, applicable permits and Applicable Law;
- (ii) at its own cost, obtain, maintain and provide copies to the ABC, all applicable licenses and permits from the respective governmental authorities that are necessary for the performance of its obligations under the Contract;

*Contractors Obligations*

- (iii) execute the Scope of Work in coordination co-odination with the other contractors that may be engaged by the ABC;
- (iv) at its own expense, keep the Plant, machinery and equipment within its Scope of Work insured until it is delivered to the ABC;
- (v) be in compliance with mandatory licensing requirements with regards to security related concerns, as issued by the government from time to time;
- (vi) ensure that all software related licenses support the protocols and interfaces mentioned in the latest Government rregulations, as applicable for the Scope of Work; and
- (vii) comply with all Applicable Laws in performing its obligations under the Contract, including all labour laws and environmental laws including but not limited to the provisions of payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1937, Workmen’s Compensation Act, 1923, Industrial Dispute Act, 1947, Maternity Benefit Act, 1961, Contract Labour (Regulation & Abolition) Act, 1970 or modifications thereof or any other law relating thereto and rules made there under from time to time by the Government.

*Contractors Obligations*

The Contractor acknowledges, accepts and confirms the rights of the ABC in respect of the Scope of Work, as set out in the Bidding Documents. The Contractor shall abide by the terms of the Bidding Documents in relation to its scope of work, and by the decisions, directions and instructions of the ABC.

**CLAUSE 74**

**Governing Law, Dispute Resolution and Arbitration:**

- a. This Contract shall be governed by and construed in accordance with the laws of India and courts of India shall have jurisdiction.
- b. Any dispute arising between the Parties regarding the Contract terms and conditions would be aimed to be resolved through mutual discussions.
- c. If the Parties fail to resolve the dispute by mutual discussions, the Parties agree that any dispute arising out of or in connection with this Contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration in accordance with the Arbitration Rules of the Mumbai Centre for International Arbitration (“**MCIA Rules**”), which rules are deemed to be incorporated by reference in this clause.

*Governing Law, Dispute Resolution and Arbitration*

**CLAUSE 75**

**Indemnity**

Each Party shall indemnify, defend and hold the other Party harmless from and

against any and all claims, liability, action, demand, judgment, loss, damage, costs and expenses (including legal fees) in respect of bodily injury, sickness, disease or death, of any person arising out of or by reason of the performance of its obligation under this Contract. The Contractor shall indemnify, defend and hold harmless the ABC from and against any and all claims, liability, action, demand, judgment, loss, damage, costs and expenses (including legal fees) in respect of damage to or loss of any property, real or personal, to the extent that it arises out of or by reason of the performance of the Scope of Work by the Contractor.

**CLAUSE 76**  
**Limitation of Liability**

Notwithstanding anything to the contrary, neither Party shall be liable to the other Party, whether in contract, tort, or otherwise, for any indirect, remote, punitive, special, incidental or consequential loss or damage, or any loss of profit, loss of business or loss of revenue or loss of market share, whether or not such loss or damage could have been reasonably foreseen.

**CLAUSE 77**  
**Miscellaneous Provisions**

This Contract contains the entire understanding of the Parties hereto with respect to the subject matter hereof and supersedes all prior agreements, understandings, oral and written, and commitments relating to the performance of the Work.

Each Party unconditionally and irrevocably waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be applicable to it in any jurisdiction.

No amendment or other variation of this Contract shall be effective unless it is in writing and is signed by a duly authorized representative of each Party.

**CLAUSE 78**  
**Notices**

All notices required to be given pursuant to the provisions of the Contract shall be delivered by registered mail or telefax to the addresses identified below (or such other address as the other Party has specified by giving 15 (fifteen) days' prior written notice:

**To the ABC:**

ABC

Address:

Fax:

Tel No.:

Marked for attention of Engineer-In-Charge.



**To the Bidder/ Contractor**

[Name of selected Bidder]

Address:

Fax:

Tel No.:

Marked for attention of Bidder representative

Any notice delivered by hand shall be deemed to have been served at the time of delivery. Any notice sent by registered mail shall be deemed to have been served 7 (seven) days after the date on which it is posted (in the absence of evidence of earlier receipt) and any notice sent by telefax on the date on which it is transmitted provided always that a notice is given in accordance with the above but received on a non-working day or after business hours in the place of receipt will only be deemed to be given on the next working day in that place.

## **B. Additional Conditions**

1. All the materials such as asphalt, cement etc. shall be procured by the Bidder from the approved Government institution or as directed by Chief Officer only. The material shall be brought at the Site of work well in advance by the Bidder.
2. The Bidder shall submit periodically progress reports of Work to the Chief Officer, ABC Municipal Council, ABC.
3. Materials shall be tested as per frequency prescribed by the department from any Government Laboratory or Government Polytechnic and the cost of such testing shall be borne by the Bidder. Only if the test results are satisfactory, the materials shall be allowed to be used on the Work. If the test results are not as per standards prescribed, such materials shall be immediately removed from the Work Site at Bidder's cost. In case of cement, if so requested by the Bidder in writing, material shall be allowed to be used before receipt of test results but this will be entirely at the risk and cost of the Bidder.
4. The materials not conforming to the required standard shall be removed at once from the Site of Work by the Bidder at his own cost. All materials such as asphalt, cement etc. required for use in the Work shall conform to the relevant I.S (Indian Standard) codes specifications.
5. The Bidder shall construct at its own cost shed/ sheds for storing materials as per the direction of the Chief Officer, ABC. Such constructed sheds shall be removed on completion of Work.
6. The Bidder shall make its own arrangements for the safe custody of the materials brought by it on Site of Work.
7. The charges for conveying of materials from the place of purchase by the Bidder to the Site of Work and the actual spot on Work Site shall be entirely borne by the Bidder. No claims on this account shall be entertained.
8. Separate register for Site Visit/ Instruction which are given by Chief Officer or Architect or Engineer of ABC Municipal Council, shall be maintained by the Bidder.
9. The Bidder shall provide regular technical person on Site.
10. Bidder will not be entitled for price variation claim.
11. Arbitration is allowed as per dispute resolution clauses.
12. The Municipal Council shall not be responsible for the loss in cement, steel, granite, marble, tiles and electrical item during transit to Work Site.

## C. Special Conditions

1. These are to apply as additional specifications and conditions unless otherwise already provided for contradictorily elsewhere in this Contract.

2. **BIDDER TO STUDY SITE CONDITIONS:** The Bidder shall be deemed to have carefully examined the Work and Site conditions including labour, the General Conditions and the Special Conditions, the specification schedules, and drawings and shall be deemed to have, visited the Site of the Works and to have fully informed himself regarding the local condition and carried out his own investigations to arrive at the rates quoted in the tender in this regard, he will be given necessary information to the best of knowledge of department but without any guarantee about it.

If bidder shall have any doubt as to the meaning of any portion of the General Conditions or the Special Conditions or the Scope of Work or any other matter concerning the Contract, he shall in good time before submitting his tender set forth the particulars thereof and submit them to the respective Executive Engineer, P.W. Division, in writing in order that such doubts may be clarified authoritatively before tendering. Once a tender is submitted the matter will be decided in accordance to tender condition in absence of such authentic pre-clarification.

Competency of Tender: The Work will be awarded only to those Bidders who are considered to be substantially responsive bidders, capable of performing the class of work to be completed, before passing the final award any or all bidders may have to show that he has the necessary experience, facilities, ability and financial resources to execute the work in satisfactory manner and also within the stipulated time.

3. **DECLARATION OF THE BIDDER:** The Bidder should sign the declaration form in the format attached in Section 4

4. **INDEMNITY:** The Bidder shall indemnify the Government against all actions, suits, claims and demands brought or made against it in respect of anything done or omitted to be done by the Bidder in execution of or in connection with the Work of this Contract and against any loss or damage to the Government in consequence of any action or suit being brought against the Bidder for anything done or committed to be done in the execution of the Works of this Contract.

5. **(A) DEFINITIONS:** Unless excluded by or repugnant to the context the following expressions shall have the meaning set out under:

“**Additional Security Deposit**” shall have the meaning assigned to it under Clause 34 under Part F of Section 2.

“**Applicable Law(s)**” shall mean the laws, rules and regulations having the force of law in India from time to time.

“**Bad Work**” shall have the meaning assigned to it in Clause 17 of Section 5.

“**Bid**” shall mean the tender made by the Bidder in accordance with the Bidding Documents.

“**Bidder**” or “**Contractor**” or “**Operator**” used in the tender papers shall mean the successful bidder whose bid has been accepted, and who has been authorized to proceed with the Work.

**“Bidding Documents”** shall have the meaning set out in Part B of Section 2 and shall also include the Bid submitted by the selected Bidder and any modification thereto.

**“Bid Price”** shall mean the price quoted by the Bidder which is calculated in accordance with Section 7.

**“Bidder’s Representative”** shall mean any person identified by the Bidder as its representative within 3 (three) days of execution of the Contract.

**“BIS”** shall mean Bureau of Indian Standards.

**“Chief Officer”** shall mean the Chief Officer of the ABC.

**“Completion Certificate”** shall have the meaning assigned to it in clause [7].

**“Contract”** as used in the tender papers shall mean the deed of Contract together with its original annexures, schedules and attachments including any amendments made thereto by mutual consent from time to time.

**“Contract Value”** shall mean the amount quoted by the Bidder in the price bid for work specified in [Part A and Part B].

**“CPCB”** shall mean the Central Pollution Control Board;

**“CPHEEO”** shall mean the Central Public Health Engineering Organization of the Ministry of Urban Development, Government of India, New Delhi

**“Defects Liability Period”** shall be the period commencing from commissioning of the Plant until the expiry of the period for the Works set out in Annexure 2.

**“Design-Build Documents”** shall have the meaning assigned to it in Section 6.

**“Design-Build Period”** shall mean a period for designing, building and constructing the Fecal Sludge & Septage treatment plant.

**“Design-Build Services”** shall have the meaning assigned to it in Section 6.

**“Drawing”** shall mean the drawings referred to in the specifications and any modifications of such drawings approved in writing by Engineer and such other drawings as may from time to time be furnished or approved in writing by the Engineer.

**“Earnest Money Deposit”** or **“EMD”** shall mean the earnest money deposit payable by the Bidders in accordance with the Part C of Section 2.

**“Engineer”** or **“Engineer-In-Charge”** as used in the tender papers shall mean the Executive Engineer, in charge of the work for the time being.

**“Financial Bid”** shall mean the bid submitted by the Bidder for financial evaluation of the Bidder to be carried out by the ABC in accordance with the criteria stipulated in the Bidding Documents.

“**Force Majeure**” shall mean any Force Majeure Event.

“**Force Majeure Event**” shall have the meaning assigned to it in Clause 67 of the General Condition.

“**General Conditions**” shall mean the general conditions set out in Part A of Section 5.

“**Government**” as used in the tender documents shall mean the Public Works Department of the State Government.

“**Initial Security Deposit**” shall have the meaning assigned to it in Clause 33 under Part F of Section 2.

“**Joint Venture Participants**” shall have the meaning assigned to it in Clause 12 of Section 2.

“**KWH**” shall mean Kilowatt per Hour.

“**Liquidated Damages**” shall have the meaning assigned to it in Clause 2 of Section 5.

“**MCIA Rules**” shall mean the Mumbai Centre for International Arbitration Rules.

“**MPCB**” shall mean State Pollution Control Board.

“**MSW Rules**” shall mean the Municipal Solid Wastes (Management and Handling) Rules, 2000.

“**MVAT**” shall mean the State Govt. Value Added Tax Act, 2005.

“**Notice on Completion**” shall have the meaning assigned to it under Clause 7(A) of Section 5.

“**Minimum Wages Act**” shall mean the Minimum Wages Act, 1948 and the relevant rules and regulations issued thereunder.

“**NIT**” shall mean Notice Inviting Tender.

“**O&M**” shall mean operation and maintenance.

“**O&M Period**” shall mean a period of 3 (three) years beginning from the date of commissioning of the Fecal Sludge & Septage treatment plant.

“**Operations Services**” shall have the meaning assigned to it in Section 6.

“**Operational Acceptance Certificate**” shall have the meaning assigned to it in Clause 7(B) of the General Conditions.

“**Operations Work Plan**” shall have the meaning assigned to it Part C of Section 2.

“**Parties**” shall mean the Bidder and the ABC and “**Party**” shall mean any one of them.

“**Performance Security**” shall have the meaning assigned to it in Clause 35 under Part F of Section 2.

**“Plant”** as used in the tender papers shall mean every machinery, necessary or considered necessary by the Engineer to execute, construct, complete and maintain the Works and used in, altered, modified, substituted and additional work ordered in the time and in the manner herein provided and all temporary materials and special and other articles or appliances of every sort, kind and description whatsoever intended or used hereof.

**“Project”** shall mean the turnkey project of design, construction, commissioning and operation of Fecal Sludge & Septage treatment plant of capacity \_\_\_m<sup>3</sup>/ day at ABC Municipal Council, District D, XYZ.

**“PWD”** shall mean Public Works Department.

**“Running Bill”** shall mean the bill submitted on a monthly basis for work done by the Contractor.

**“Scope of Work”** or **“Scope”** shall have the meaning assigned to it in Section 6.

**“Security Deposit”** shall have the meaning assigned to it in Part F of Section 2.

**“Similar Projects”** shall have the meaning assigned to it under Clause 2 of Section 2.

**“Site”** or **“Work Site”** shall mean the lands and/or other places, on, under in or through which the work is to be executed under the Contract including any other lands or places which may be allotted by Government or used for the purpose of the Contract.

**“ABC”** shall mean ABC Municipal Council, XYZ.

**“Special Conditions”** shall mean the special conditions set out in Part C of Section 5.

**“Staffing Plan”** shall have the meaning assigned to it in Clause 12 of Part C of Section 2.

**“FSSTP”** shall mean the Fecal Sludge & Septage treatment plant to be designed, built, commissioned and operated in accordance with the Contract.

**“Superintending Engineer”** as used in the tender papers shall mean an officer of Superintending Engineer's rank (by whatever designation he may be known) under whose control the Work lies for the time being.

**“Total Estimated Cost”** shall be the cost of the Project as quoted by the selected Bidder.

**“Work”** shall mean the works to be executed in accordance with the Contract or part(s) thereof as the case may be and shall include all extra, additional, altered or substituted works as required for performance of the Contract.

**“Technical Bid”** shall mean the bid submitted by the Bidder for technical evaluation of the Bidder to be carried out by the ABC in accordance with the criteria stipulated in the Bidding Documents.

**“Temporary Works”** shall mean all temporary works of every kind required in or about the execution, completion or, maintenance of the works.

**“Tests on Commissioning”** shall be the tests to be carried out during commissioning and trial run period

“ULB” shall mean Urban Local Body.

**(B) INTERPRETATION**

- a) Where the context so required, words importing the singular only also include the plural and Vice-versa.
- b) Heading and marginal notes, if any, to the General Conditions shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof of the Contract.
- c) Wherever there is mention of “Schedule of Rates” or simply D.S.R. in this tender, it will be taken to mean as "The schedule of the rates of the division in whose jurisdiction the Work lies".

**6. ERRORS, OMISSIONS AND DISCREPANCIES:**

- a) In case of errors, omissions and/or disagreement between written and scaled dimensions on the drawings or between the drawings and specifications etc., the decision as per Engineer In Charge will be final.

**7. METHODOLOGY OF CONSTRUCTION, CONSTRUCTION EQUIPMENTS AND PROGRESS SCHEDULE:**

- A) Methodology of Construction: The Bidder shall furnish at least 15 (fifteen) days in advance his program of commencement of items of work, the details of actual methods that would be adopted by the Bidder for the execution of various items of work such as well sinking cast in situ super structure for bridge work, earthwork WBM black topping items etc. for road works supported by necessary detailed drawings and sketches including those of the plant and machinery that would be used, their locations arrangement for conveying and handling, materials etc. and obtain prior approval of the Engineer-in-charge, well in advance of starting of such item of work. The Engineer-in- charge, reserves the right to suggest modifications or make corrections in the method proposed by the Bidder, whether accepted previously or not, at any stage of the work, to obtain the desired accuracy, quality and progress of work which shall be binding on the Bidder. No claim on account of such change in method of execution will be entertained by Government so long as specifications of the item remain unaltered.

The sole responsibility for the safety and adequacy of the methods adopted by the Bidder will however rest on the Bidder irrespective of any approval given by the Engineer. In case of slippage from the approved work program at any stage the Bidder shall furnish revised program to make up the slippage within the stipulated time schedule and obtain the approval of the Engineer to the revised program.

- B) Construction Equipment: The Bidder shall be required to give trial run of the equipment for the establishing their capability to achieve the laid down specifications and tolerance to the satisfaction of the Engineer before commencement of the Work. All equipment provided shall be of proven efficiency and shall be operated and maintained at all times, in a manner acceptable to the Engineer and no equipment or personnel will be removed from the Site without permission of the Engineer.

C) Progress Schedule:

- i] The Bidder shall furnish within the period of one month of the order to start the Work, the program of Work in Critical Path Method (CPM) / Programme Evaluation Review Technique (PERT) charts in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and anticipated completion date of each major item of work to be done by him, also indicating dates of procurement and setting up of the materials, plant and machinery. The schedule is to be such as is practicable of achievement towards the completion of the whole work in the time limit, and of the particular items, if any, on the due dates specified in the Contract and shall have the approval of the Engineer-in-charge. No revised schedule shall be operative without such acceptance in writing. The Engineer is further empowered to request for more detailed schedule or schedules, such as week by week for any item or items, in case of urgency of work as will be directed by him and the Bidder shall supply the same as and when asked for.
- ii] The Bidder shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours restricted to one shift a day for operations to be done under the Government supervision shall be such as may be approved by the Engineer-in-charge. They shall

not be varied without the prior approval of the Engineer. Night work which requires supervision shall not be permitted except when specifically allowed by Engineer each time, if requested by the Bidder. The Bidder shall provide necessary lighting arrangements etc. for night work as directed by Engineer without extra cost.

- iii] Further, the Bidder shall submit the progress report of Work in prescribed forms and charts etc. at periodical intervals as may be specified by the Engineer-in-charge, schedule shall be in form of progress charts, forms, progress statement and/or reports as may be approved by the Engineer.
- iv] The Bidder shall maintain proforma, charts, details regarding machinery, equipment, labour, materials, and personnel etc. as may be specified by the Engineer and submit periodical returns thereof as may be specified by the Engineer-in-charge.

**8. AGENT AND WORK ORDER BOOK:** The Bidder shall himself engage an authorized all time agent on the Work capable of managing and guiding the Work and understanding the specifications and Contract conditions. A qualified and experienced engineer shall be provided by the Bidder as his agent for technical matters in case the Engineer-in-charge considers this as essential for the Work and so directs the Bidder. He will take orders as will be given by the Engineer-in-charge or his representative and shall be responsible for carrying them out. This agent shall not be changed without prior intimation to the Engineer-in-charge and his representative on the Work Site.

The Engineer-in-charge has the unquestionable right to ask for changes in the quality and strength of Bidder's supervisory staff and to order removal from work of any of such staff. The Bidder shall comply with such orders and effect replacements to the satisfaction of the Engineer-in-charge.

A work order book shall be maintained on Site and it shall be the property of Government and the Bidder shall promptly sign orders given there in by the Executive Engineer or his representative and his superior officers and comply with them.

The compliance shall be reported by the Bidder to the Engineer-in-charge in reasonable time so that it can be checked. The blank work order book with machine numbered pages will be provided by the ABC free of charge for this purpose. The Bidder will be allowed to copy out instructions therein from time to time.

**9. SETTING OUT :**

i. SETTING OUT FOR (BUILDING WORKS): The Engineer-in-charge shall furnish the Bidder with only the four corners of the Work Site and a level bench mark and the Bidder shall set out the Works and shall provide an efficient staff for the purpose and shall be solely responsible for the accuracy of such setting out.

The Bidder shall provide, fix and be responsible for the maintenance of all stacks, templates, level marks, profiles and other similar things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequence of such removal or disturbance should the same take place and for their efficient and timely reinstatement. The Bidder shall also be responsible for the maintenance of all existing survey marks, boundary marks, distance marks and centre line marks, either existing or supplied and fixed by the Bidder. The work shall be set out to the satisfaction of the Engineer-in-charge. The approval thereof or joining with the Bidder by the Engineer-in-charge in setting out the work, shall not relieve the Bidder of any of his responsibilities.

Before beginning the Work, the Bidder shall at his own cost provide all necessary reference and level posts, pegs, bamboos, flags, ranging rods, strings and other materials for proper layout of the Work in accordance with the scheme for bearing marks acceptable to the Engineer-in-charge. The centre, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distinct mark at the centre to enable theodolite to be set over it. No work shall be started until all these points are checked and approved by the Engineer-in-charge in writing but such approval shall not relieve the Bidder of any of his responsibilities. The Bidder shall also provide all labour, material and other facilities, as necessary, for the proper checking of layout and inspection of the points during construction.



Pillars bearing geodetic marks located at the sites of units of works under construction should be protected and fenced by the Bidder.

On completion of works, the Bidder must submit the geodetic documents according to which the work was carried out.

ii) **RESPONSIBILITIES FOR LEVEL AND ALIGNMENT:** The Bidder shall be entirely and exclusively responsible for the horizontal and vertical alignment, the levels and correctness of every part of the work and shall rectify any errors or imperfection therein, such rectification shall be carried out by the Bidder at his own cost, when instruction are issued to that effect by the Engineer.

**10. LEVELING INSTRUMENTS:** If measurements of items of the work are based on volumetric measurements, calculated from levels taken before and after construction of the item, a sufficient number of levelling instruments, staves, tapes etc. will have to be kept available by the Bidder at the Site of Work for this purpose. Lack of such levelling instruments, staves, tapes etc. in required numbers may cause delay in measurement of the Work. The Bidder will have therefore to keep sufficient number of these instruments readily available at Site and in good working conditions.

**11. AUTHORITIES OF THE ENGINEER-IN-CHARGE'S REPRESENTATIVE:** The duties of the representative of the Engineer-in-charge are to watch and supervise the work and test and examine any material to be used or workmanship employed in connection with the Works. The Engineer-in-charge may from time to time, in writing delegate to this representative any of the powers and authorities vested in the Engineer-in-charge and shall furnish to the Bidder copy of all such delegations or power and authorities. Any written instruction of approval given by the representative of the Engineer-in-charge to the Bidder within the terms of such delegations (but not otherwise) shall bind the Bidder and the department as though it had been given by the Engineer-in-charge, provided always as follows.

Failure of the representative of the Engineer-in-charge to disapprove any work or material shall not prejudice the power of the Engineer- in-charge thereafter to disapprove such work or materials so order the putting down removal or breaking up thereof.

**12. CO-ORDINATION:** When several agencies for different sub-works of the project are to work simultaneously on the project Site there must be full co-ordination and co-operation between different Bidders to ensure timely completion of whole project smoothly. The scheduled dates for completion specified in each Contract shall therefore be strictly adhered to each Bidder may make his independent arrangements for water, power, housing etc. if they so desire. On the other hand the Bidders are at liberty to come to mutual agreement in this behalf and make joint arrangements with the approval of the Engineer. No Bidder shall take or cause to be taken any steps or action that may cause, description, discontent or disturbance to work, labour or arrangement, etc. of other Bidders in the project localities any action by any Bidder which the Engineer, in his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the Contract conditions and shall dealt with as such.

In case of any dispute or disagreement between the Bidders, the Engineer's decisions regarding the co-ordinations, co-operation and facilities to be provided by any of the Bidders shall be final and binding on the Bidder concerned and such a decision or decisions shall not vitiate any Contract nor absolve the Bidder(s) of his/ their obligations under the Contract not form the grounds for any claims or compensation.

**13. ASSISTANCE IN PROCURING PRIORITIES, PERMITS ETC:** The Engineer on a written request by Bidder will if in his opinion the request is reasonable and in the interest of work and its progress, assist the Bidder in securing the priorities for deliveries, transport, permits for controlled materials etc. where such as needed. The Government will not however be responsible for the non-availability of such facilities or delay in this behalf and no claims no account of such failures or delays shall be allowed by the Government.

The Bidder shall have to make his own arrangements for machinery required for the Work. However if such is conveniently available with the ABC may be spared as per rates in force on recovery of necessary Security Deposit and rent with agreement in the prescribed form. Such an agreement shall be independent of this Contract and the supply or non-supply of machinery shall not form a ground for any claim or extension of time limit for this work.

**14. TEMPORARY QUARTERS AND SITE OFFICE:**

- i. The Bidder shall at his own expense maintain sufficient experienced supervisory staff etc. required for the Work and shall make his own arrangement provide housing for them with all necessary arrangements including fire preventive measures etc. as directed by Engineer-in-charge.
- ii. The Bidder shall provide, furnish, maintain and remove on completion of the work a suitable office on the Work Site for the use of the representative of the Engineer-in-charge. The covered area exclusive of veranda should not be less than 37.17 sqm. It may have bamboo matting walls and asbestos or corrugated iron roof, paved floor should be 45 cm above ground level. He should provide latrines, urinals and keep them clean daily. This will be supposed to be included in his rates.

**15. TREASURE TROVE:** In the event of discovery by the Bidder or his employees during the progress of the Work of any treasury fossils, minerals or any other articles of value or interest, the Bidder shall give immediate intimation thereof to the Engineer and forthwith make over to the Engineer such treasure or things which shall be the property of the Government.

**16. PATENTED DEVICE MATERIALS AND PROCESSES:** Whenever the Bidder desires to use any designed device, materials or process covered by letter of patent or copy right, the right for such use shall be secured by suitable legal arrangement and agreement with patent owner and the copy of their agreement shall be filed with the Engineer-in-charge so desired by the latter.

**17. EXPLOSIVES:** The Bidder shall at his own expense construct and maintain proper magazines if such are required for the storage of explosive for use in connections with the Works and such magazines being situated, constructed and maintained, in accordance with the Government rules applicable on that behalf. The Bidder shall at his own expenses obtain such license or licenses as may be necessary for storing and using explosives, notwithstanding that the locations etc. of storage of explosive are approved by the Engineer. The Government shall not bear any responsibility whatsoever in connection with the storage and use of the explosives on the Site or any accident or occurrence whatsoever in connection therewith all operations of the Bidder in or for which explosives are employed being at the risk of the Bidder and upon his sole responsibility and the Bidder hereby given to Government an obsolete indemnity in respect thereof.

**18. DAMAGE BY FLOODS OR ACCIDENTS:** The Bidder shall take all precautions against damage by floods or tides or from accidents etc. No compensation will be allowed to the Bidder on this account or for correcting and repairing any such damage to the work during construction. The Bidder shall be liable to make good at his cost any plant or material belonging to the Government lost or damaged by floods or from any other cause while in his charge.

**19. POLICE PROTECTION:** For the special protection of the camp of the Bidders work the ABC will help the Bidder as far as possible to arrange for such protection with the concerned authorities if so required by the Bidder in writing. The full cost of such protection shall be borne by the Bidder.

**20. SUPERVISION & INSPECTION OF WORKS & QUALITY CONTROL**

1) SUPERVISION: The Bidder shall either himself supervise the execution of the works or shall appoint the competent agent approved by the Engineer-in-charge, the Bidder has himself no sufficient knowledge and experience of receiving instructions or cannot give his full attention to the works, the Bidder shall at his own expenses, employ as his accredited agent a qualified engineer approved by the Engineer-in-charge.

Orders given to the Bidder's agent shall be considered to have the force as if these had been given to the Bidder himself. If the Bidder fails to appoint a suitable agent as directed by the Engineer-in-charge, the Engineer-in-charge shall have full power to suspend the execution of the work until such date suitable agent is appointed and the Bidder shall be responsible for the delay so caused to the works and the Bidder shall not be entitled for any compensation on this behalf.

2) INSPECTION: The Bidder shall inform the Engineer-in-charge in writing when any portion of work is ready for inspection giving him sufficient notice to enable him to inspect the same without affecting the further progress of the Work. The Work shall not be considered to have been completed in accordance with the terms of the Contract until the Engineer-in-charge shall have certified in writing to that effect. Approvals of materials or workmanship or approval of part of the Work during the progress of execution shall not bind the Engineer-in-charge or in any way affect him even to reject the Work which is alleged to be completed and to suspend the issue of his certificate of completion until such alteration and modification or reconstruction have been affected at the cost of the Bidder as shall enable him to certify that the Work has been completed to his satisfaction. The Bidder shall provide at his cost necessary ladders and such arrangements as to provide necessary facilities and assistance for proper inspection of all parts of work at his own cost.

**21. INSPECTION OF OPERATION:** The Engineer and any person authorized by him shall at all times have access to the Works and to all workshops and places (including required documents) where Work is being prepared or from where materials, manufactured articles or machinery are being afforded every facility for and every assistance in or in obtaining the right to such access.

**22. INITIAL MEASUREMENTS FOR RECORD:** Where, for proper measurement of the Work, it is necessary to have an initial set of levels or other measurements taken, the same as recorded in the authorized field book or measurement book of Government by the Engineer or his authorized representative will be signed by the Bidder who will be entitled to have true copy of the same made at his cost any failure on the part of the Bidder to get such levels etc. recorded before starting the work will render him liable to accept the decision of the Engineer as to the basis of taking measurements, likewise the Bidder will not cover any work which will render its subsequent measurements, difficult or impossible without first getting the same jointly measured by himself and the authorized representative of the Executive Engineer. The record of such measurements on the Government side will be signed by the Bidder and he will be entitled to have true copy the same made at his cost.

**23. SAMPLES AND TESTING OF MATERIALS:**

- (i) All materials to be used on Work shall be approved in advance from the Engineer-in-charge and shall pass the test and /or analysis required by him which will be:
  - (a) As specified in the specifications for the items concerned; or
  - (b) As per I.S.I specifications whichever and wherever applicable; or
  - (c) Such recognized specifications acceptable to the Engineer-in-charge as equivalent thereto; or
  - (d) in the absence of such authorized specifications such required test and/or analysis as may be specified by the Engineer-in-charge in the order of procedure given above.
- ii) The Bidder shall at his risk and cost make all arrangement and/or shall provide for all such facilities as the Engineer-in-charge may require for collecting preparing testing required number of samples for tests or for analysis at such time and to such place or places as may be directed by the Engineer-in-charge and bear all

charges and cost of testing such samples shall also be deposited with the Engineer-in-charge till sent for testing.

- iii) The Bidder shall as and when required submit at his cost the samples of materials to be tested or analysed and if so directed shall not make use of or incorporate in the works any materials to be represented by the samples until the required tests, or analysis have been made and the materials finally accepted by the Engineer-in-charge.
- iv) The Bidder shall not be eligible for any claim or compensation either arising out of any delay in the Work or due to any corrective measures required to be taken on account of and as a result of testing of the materials.
- v) The Bidder or his authorized representative will be allowed to remain present in the departmental laboratory while testing samples furnished by him. However the results of all the tests carried out in the departmental laboratory in the presence or absence of the Bidder or his authorized representative will be binding on the Bidder.
- vi) The cost of the routine day to day quality control testing charge for tests required as per specifications will be borne by Bidder by sending the same to the concerned Government laboratory.
- vii) The Bidder shall have at his own cost set up laboratory as approved by Engineer to carry out the routine tests of materials which are to be used on the Work. The tests will have to be carried out either in his field laboratory or in an approved laboratory. In case tests are carried out in field laboratory at least 50% testing should be carried out at the nearest quality control laboratory of the PWD. Failing to which recovery at prescribed rate of PWD quality laboratory will be effect from Bidder's bill.
- viii) Where such field/ site laboratory has been setup by the Bidder, the same shall be checked and got approved from the Executive Engineer-in-charge of the Work.
- ix) On the Work, where no such field/ site laboratory is setup, 100% testing of material which are to be used on the work will have to be got tested from the vigilance and quality control laboratory of the department.
- x) The Bidder shall adhere to the frequency of testing of the material as per relevant IS codes and National Building Code as specified (Refer Annexure 1)
- xi) In case of material procured by the Bidder testing as required by codes and specifications shall be arranged by him at his own cost. Testing shall be done in the presence of the Engineer-in-charge at the nearest approved laboratory. If additional testing other than as required by the specifications is ordered, the testing charges shall be borne by the ABC if the test results are satisfactory and by the Bidder if the same are not satisfactory.
- xii) In case of the materials supplied by the Government, if the Bidder demands certain testing, the charges thereof shall be paid by the Bidder if the test results are satisfactory and by the ABC if the same are not satisfactory.
- xiii) Testing shall be carried out at approved P.W.D. Government laboratories or institutions as directed by the Engineer-in-charge and all testing charges shall be borne by the Bidder.
- xiv) 15% (fifteen) of the rate shall be withheld and shall be released only after the receipt of the satisfactory test results whenever specified excluding concrete items. Routine test shall mean testing of aggregate for gradation, flakiness index, impact value and binder contents.
- xv) Mix design of concrete items where specified shall be brought by the Bidder at his own cost, from Government laboratory. Also testing of high tensile steel is to be done by the Bidder at his own cost.

#### **24. Water Supply:**

- a. Availability of adequate water for Works and sources thereof shall be confirmed by the Bidder before submitting the tender.
- b. The Bidder shall make his own arrangements at his own cost for entering into Contract with concerned authorities for obtaining the connection and carry the water up to the Work Site as required by him.

- c. The location of the pipe line with respect to the road shall be decided by Engineer-in-charge and shall be binding on the Bidder.
- d. The Bidder is advised to provide water storage tank of adequate capacity to take care of possible shutdown of water supply system.

**25. MISCELLANEOUS:**

- a. Rate shall be inclusive of all applicable taxes in accordance with Applicable Law
- b. For providing electric wiring or water lines etc. recessed shall be provided if necessary through walls, beams, slabs, etc. and later on refilled up with braces or stone, chipping, cement mortar without any extra cost.
- c. In case it becomes necessary for the due fulfilment of Contract for the Bidder to occupy land outside the department limits, the Bidder will have to make his own arrangements with the land owners and to pay such rents if any are payable as mutually agreed between them. The ABC will afford the Bidder all the reasonable assistance to enable him to obtain Government land for such purpose on usual terms and conditions as per rules of Government.
- d. Special provision in detailed specifications or wording of any item shall gain precedence over the corresponding contradictory provision (if any) in the standard specifications or P.W.D. hand book where reference to such specifications is given without reproducing the details in Contract. Decision of the Engineer-in-charge shall be final in case of interpretation of specifications.
- e. Suitable separating Barricades and enclosures as directed shall be provided to separate material brought by Bidder and material issued by Government to Bidder under schedule 'A' some applies for the material obtained from different sources of supply.
- f. It is presumed that the Bidder has gone carefully through the Standard Specifications of P.W.D. hand books (Vol I and II 1981 edition) and MOST specifications edition 1995 and the schedule of rate of the Irrigation Division and studied the Site conditions before arriving at rates quoted by him.
- g. The stacking and storage of construction material at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and fitness for the work. Suitable precautions shall be taken by the Bidder to protect the material against atmospheric actions, fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likely hood of subsidence of soil, heavy materials shall be stored on paved platforms. The Bidder shall at his own expenses, engage watchmen for guarding the materials and plant and machinery and the work during day and night against any pilferage or damage and also for prohibiting trespassers.
- h. For Road and Bridge works the Bidder shall in addition to the specification cited here, comply with requirements of relevant IRC code of practice, M.O.R.T.H. specifications.
- i. The Bidder shall be responsible for making good the damages done to the existing property during construction by his men.
- j. If it found necessary from safety point of view to test any part of the structure, the test shall be carried out by the Bidder with the help of the ABC at his own cost.
- k. The Bidder shall provide, maintain, furnish and remove on completion, temporary shed for office on work site for the use of the Executive Engineer's representative.
- l. Defective work is liable to be rejected at any stage. The Bidder, on no account can refuse to rectify the defects merely on reasons that further work has been carried out. No extra payment shall be made for the rectification.
- m. The work has been divided into sections but not- with-standing this, every part of it shall be deemed supplementary to and complementary of every other part.
- n. General directions or detailed description of work, materials and items coverage of rates given in the specifications are not necessarily repeated in the Bill of Quantities/Item wise Specifications. Reference is,

however drawn to the appropriate section clause(s) of the general specifications in accordance with the work that is to be carried out.

o. In the absence of specific directions to the contrary, the rates and prices inserted in the items are to be considered as the full inclusive rates and prices for the finished work described there-under and are to cover all labour, materials, wastage, temporary work, plant overhead charges and profits, as well as the general liabilities, obligations and risks arising out of the General Conditions of Contract.

q. All measurements will be made in accordance with the methods indicated in the specification and read in the conjunction with the General Conditions of Contract.

r. The details shown on drawings and all other information pertaining to the work shall be treated as indicative and provisional only and are liable to variation as found necessary while preparing working drawing which will be supplied by the Government during execution. The Bidder shall not, on account of such variation be entitled to any increase over the ones quoted in the tender which are on quantity basis.

s. The recoveries if any from Bidder will be affected as arrears of land revenue through the Collector of the District.

v. Extraneous materials and steps to minimum dust nuisance during construction shall be as per clause 111 of MOST specifications (Third Edition)

The Bidder will have to make his own arrangement at his own cost for obtaining or providing electric supply at work site.

## **26. CHANGE OF CEMENT CONTENT ETC.**

The tendered rates for any item involving the use of cement shall apply to the quantity of cement specified for the mix for that item in the specifications. If for any reasons except those required for compensating the deficiencies in the components, the cement content and properties are altered by the Engineer-in-charge, at any time or from time to time, the tendered rates for that particular item and quantity or quantities, shall be duly enhanced or reduced only to account for the addition or reduction in cost of the cement content from that laid down in the specification at the rates specified in D.S.R. of the district on which the estimate is based plus 10 % to cover all other incidental charges whatever. Likewise if any additives, compounds, water proofing material etc. are ordered by the Engineer to be added to the mortar or concrete, no extra rate shall be payable for this change which shall be carried out as per directions of Engineer-in-charge, provided cost of such additives etc. is borne by Government or these are supplied free of cost to Bidder at site by the Government.

## **27. CEMENT CONCRETE**

(a) The Bidder shall carry out all preliminary tests to work out grading and proportioning of aggregates in order to obtain and maintain uniform quality of work. The Bidder shall supply all materials, labour and testing cost for preparing and testing samples as required by the Engineer. Unless otherwise specified in the detailed item wise specifications 3 cubes 150mmx150mm x 150 mm will be tested for every 15 cubic meter of ordinary grade concrete or per day whichever is higher.

The Bidder shall make field arrangements for slump tests, density and bulk age testing and also prepare concrete cubes 150 mm x 150 mm x 150 mm for testing compressive strength, at his cost. The cubes shall be got tested at approved laboratory and the test results shall not fall below those prescribed in P.W.D. hand book (Table CV P. 412) or as laid down in the specifications. The cost of such cubes and tests shall be entirely borne by the Bidder.

(b) All concrete shall be machine mixed, unless otherwise directed by Engineer-in-charge for controlled or high grade concrete, the grading of aggregate shall be got approved from the Engineer. The correct proportions and the total amount of water for the mix will be determined by means of preliminary tests and shall be got approved by the Engineer-in-charge, however, such approval does not relieve the Bidder from his responsibility, regarding the minimum works strength requirements. Work test shall be taken in

accordance with relevant codes and specifications. The proportioning of aggregate shall be done by weight if so ordered by the Engineer.

(c) All mixing shall be done by mechanical means in approved mixers. The Engineer may at his discretion, allow in writing hand mixing of concrete for minor items where small quantities are involved but in that case the Bidder shall increase the cement content of the mixture by 10% without any extra cost.

(d) The form work used shall be made invariably of steel/with lining of steel or with plywood lining wooden shutters may be allowed at the discretion of the Engineer i.e. Lintels, small slabs and beams, coping etc.

(e) The concrete shall be mechanically vibrated for proper compaction by the method approved by the Engineer.

(f) The concrete shall be cured only by a sweet potable water for full 21 days after the time of its placement or as may be directed by Engineer- in charge.

**28. REINFORCED CONCRETE WORK:** (a) The work included in this Contract shall be carried out in addition to this specifications detailed herein, in accordance with specifications and regulations as laid down in the following standard specifications. Standard specifications published by State Government 1985 Edition:

I.S. 8112 1989- Specifications for 43 grade ordinary Portland cement.

I.S. 1489 Part-I Specifications for Portland Pozzolona cement.

I.S. 383 1976 - specifications for coarse and fine aggregate from natural coarse for concrete.

I.S. 1786 1985 - Specification for cold twisted bars.

I.S. 432 1982 - Specifications for mild steel and medium steel bars.

I.S.456 2000 - Code of practice for plain and reinforced concrete.

If the standard specifications quoted above fall short for the items quoted in these schedules of this Contract reference shall be made to the latest British Standard of Specifications. If any of the items of Contract do not fall in reference quoted above the decision and specification of the Engineer shall be final.

**29. ADDITIONAL GENERAL SPECIFICATION FOR ORDINARY AND HIGH GRADE CONCRETE**

1) If the concrete strength falls below that specified for the items and if the use can be permitted under clauses 303.3.7 of the I.R.C. Bridge Code Section - III given below, the unit may be accepted at the discretion of the Superintending Engineer concerned as a substandard work at a suitable reduced rate. Reduced rate will be determined by the Executive Engineer concerned according to circumstances of the case and the concerned Superintending Engineer's approval to the reduced rate as mentioned above is necessary.

"Standard Specifications and Code of Practice for Road Bridges Section -III cement concrete 303.3.7 standard of acceptance".

(i) Full payment should be made when 75 % of the test cube results are equal and above specified strength. Cases failing outside the above limits should be examined and decided by the Engineer-in-charge on merits of each case.

(ii) The test specimen should be taken by representative of the Bidder in presence of a responsible officer of the rank of not lower than an Assistant Engineer/ Deputy Engineer.

(iii) The test specimen should be formed carefully and no claim shall be entertained later on, on the ground that the casting of the test specimen were faulty and that the results of the test specimen did not give correct indication of the actual quality of concrete.

(iv) The minimum quantity of cement per one Cubic Meter of M-15 grade and above concrete should be as per Standard Specification Book Specification B.7-4 on Page 39 (1979 Edition)

(v) Payment:

(a) The payment of such concrete work will not be made till the strengths are ascertained.

(b) The payment of reinforcement of such affected items will not be made till the strengths of the concrete are ascertained.

(vi) The cantering to be used for execution of any concrete items shall be strictly in accordance with specifications for form work and steel cantering. No concreting shall be executed without prior approval to the cantering from the Engineer-in-charge.

**30. PROTECTION OF UNDERGROUND TELEPHONE CABLE AND AERIAL TELEPHONE WIRES AND POLES, TRANSMISSION TOWERS, ELECTRICITY CABLES AND WATER SUPPLY LINES:**

During the execution of work, it is likely that the Bidder may meet with telephone cables, electricity cables, water supply lines etc. it will, therefore be the responsibility of the Bidder to protect them carefully. All such cases should be brought to the notice of the Engineer-in-charge by the Bidder also the concerned department. Any damage what-so-ever done to these cables and pipe lines by the Bidder shall be made good by him at his cost.

**31. MEDICAL AND SANITARY ARRANGEMENT TO BE PROVIDED FOR LABOUR EMPLOYED IN THE CONSTRUCTION BY THE BIDDER.**

(a) The Bidder shall provide an adequate supply of potable water for the use of labourers on work and in camps.

(b) The Bidder shall construct trench or semi-permanent latrines for the use of labourers, separate latrines shall be provided for men and women.

(c) The Bidder shall build sufficient number of huts on a suitable plot of land for the use of the labourers according to the following specifications.

(1) Huts of bamboos and grass may be constructed.

(2) A good site not liable to submergence shall be selected. High ground remote from jungle but well provided with trees, shall be chosen wherever it is available. The neighbourhood of tank, jungle grass or woods should be particularly avoided. Camps should not established close to large cuttings of earth work.

(3) The line of huts shall have open spaces of at least 10 yards between rows. When a good natural site cannot procured, particular attention should be given to the drainage.

(4) There should be no overcrowding. Floor space at the rate of 2.78 Sq. meter per head shall be provided. Care should be taken to see that the huts are kept clean and in good order.

(5) The Bidder must find his own land and if he wants Government land, he should apply for it and pay assessment for it, if made available by Government.

(6) The Bidder shall construct a sufficient number of bath places, washing places should also be provided for the purpose of washing clothes.

(7) The Bidder shall make sufficient arrangements for draining away the surface and sullage water as well as water from the bathing and washing places and shall dispose of this waste water in such a way as not to cause any nuisance.

(d) The Bidder shall engage a Medical Officer, with a traveling dispensary for a camp containing 500 or more persons, if there is no Government or other private dispensary situated within eight kilometres from the camp. In cases of emergency, Bidder shall arrange at his cost, for transport for quick medical help to his sick worker.

(e) The Bidder shall provide the necessary staff for effecting a satisfactory drainage system and cleanliness of the camp to the satisfaction of the Engineer. At least one sweeper per 200 person should be engaged.

(f) The Assistant Director of Public Health shall be consulted before opening a labour camp and his instructions on matters such as water supply, sanitary conveniences, the camp site, accommodation and food supply shall be followed by the Bidder.

(g) The Bidder shall make arrangements for anti-malarial measures to be provided for the labour employed on the work. The anti- malarial measures shall be provided as directed by the Assistant Director of Public Health.

(h) Where workers are required to work near machine and are liable to meet with accident they should not be allowed to wear loose cloth like Dhoti, Jhabba etc.



**32. SAFETY MEASURES AND AMENITIES:** The Bidder shall take all necessary precautions for the safety of the workers and preserving their health while working in such job as required special protection and precautions. The following are some of the requirement listed though not exhaustive. The Bidder shall also comply with the directions issued by the Engineer, in this behalf from time to time and at all times.

- 1) Providing protective foot-wear to workers in situations like mixing and placing of mortar or concrete, in places where the work is one under too much wet conditions as also for movements over surface infected with oyster growth etc.
- 2) Providing protective head gear to workers working in quarries etc. to protect them against accident or fall of material from above.
- 3) Taking such normal precautions like providing hand rails at the edges of the floating platforms or barges not allowing nails or metal parts or useless timber to spread around etc.
- 4) Supporting workmen with proper belts, ropes etc. when working on any masts, cranes, grabs, hoist, draggers etc.
- 5) Taking necessary steps towards training the workers concerned on the use of machinery before they are allowed to handle it independently and taking all necessary precautions in and around the areas where machines hoists and similar units are working.
- 6) Providing adequate number of boats if at all require for playing in water to prevent over loading, and overcrowding.
- 7) Providing life belts to all men working at such situations from where they may accidentally fall in to the water. Equipping the boats with adequate number of life belts etc.
- 8) Avoiding bare live wires etc. as would electrocutes, workers.
- 9) Making all plat-forms staging and temporary structures sufficiently strong and not to causing inconvenience and risk to the workmen and supervisory staff.
- 10) Provide sufficient first aid trained staff and equipment to be available quickly at the work site to render immediate first aid treatment in case of accidents due to suffocation's drowning and other injuries.
- 11) take all necessary precautions with regard to use of divers.
- 12) Providing full length gum boots, leather hand gloves leather jacket with fire proof apron to cover the chest and back reaching up to knees and protective goggles for the eyes, to the labourer working with hot asphalt handling, vibrator in cement concrete and also where use of any or all these items is beneficial in the interest of health and wellbeing of the labourers in the opinion of the Engineer.
- 13) Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying the materials as well a suitable footholds and hand folds shall be provided on the ladder and ladder shall be given an inclination not steeper than 1:4 (1 horizontal and 4 vertical)
- 14) Scaffolding or staging more than 3.25 meters above the ground or floors, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise assured at least one meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 15) Working platform, gangway and stairways shall be so constructed that they do not sag unduly or are more than 3.25 meters above ground level or floor level. It shall be closely boarded, have adequate width and be suitable fenced as directed in 14 above.
- 16) Every opening in structure or in a working platform shall be provide with suitable protection to prevent fall of person or materials by providing suitable fencing or railing with minimum height of 1 meter.
- 17) Safe means of access shall be provided to all working platforms and working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length, width between side rails in

hung ladder shall in no case may be less than 30 cms. for ladders up to and including 3 meters in length. For longer ladders, this width shall be increased at least 6 mm. for each additional 30 cms. of length. Uniform step spacing shall not exceed 30 cms.

18) Adequate precautions shall be taken to prevent danger from electrical equipment. No material on any of the sites shall be stacked or placed as to cause danger or inconvenience to any person or the public. The Bidder shall provide all necessary fencing and lights to protect public from accident and proceeding of law that may be brought by any person for injury sustained owing to neglect of the above precaution and to pay any damages and costs which may awarded in any such suit action or proceedings to any such person or which may with the consent of the Bidder, to be paid to compromise any claim by any such person.

19) All necessary personal safety equipment as considered adequate by the Engineer-in-charge shall be available for use of person employed on the site and maintained in a condition suitable for immediate use and the Bidder shall take adequate steps to ensure proper use of equipment by those concerned.

a) Workers employed on mixing asphaltic materials, cement or lime mortars concrete shall be provided with protective footwear and protective goggles.

b) Those engaged in handling any materials, which is injurious to eyes shall be provided with protective goggles.

c) Those engaged in welding works shall be provided with welder's protective eye-shields.

d) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

e) When workers are employed in sewer and manholes which are in use the Bidder shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.

f) The Bidder shall not employ men below the age of 18 and the women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken.

i) No paint containing lead or lead product shall be used except in the form of paste or readymade paint.

ii) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or surface having lead paint, dry rubbed and scrapped.

iii) Overalls shall be supplied by the Bidder to workmen and adequate facilities shall be provided to enable working painters to have wash during and on cessation of work.

g) When work is done near any place where there is risk of drowning all necessary 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 made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

Use of hoisting machines and shackle including their attachments, anchorage, supports shall confirm to the following:

a) i) These shall be good mechanical construction, round materials and adequate strength and free from patent defects and shall be kept in good working order.

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

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

c) In case of every hoisting machine and of every chain, ring, hook, shackle and pulley block used in hoisting or lowering or means of suspension, safe working shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be clearly marked with safe working load.

In case of a hoisting machine having variable safe working load, each safe working load and the conditions used which it is applicable clearly indicated. No part of any machine or of any good referred above in this paragraph shall be loaded beyond safe working load except for the purpose of testing.

d) In case of departmental machines safe working load shall be notified by the Engineer-in-charge. As regards Bidder's machines Bidder shall notify safe working load of each machine to the Engineer-in-charge wherever, he brings it to site of work and get it verified by Engineer-in-charge.

Motors, gearing transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with such means as will reduce the minimum risk to the accidental descent of load. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced, when workers are employed. On electrical installations which are already energized insulating wearing materials approved such as gloves, sleeves and coats as may be necessary, shall be provided. Worker shall not wear any rings, watches and carry keys and other material which are good conductor of electricity.

All scaffolds, ladder and safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facility shall be provided at near place of work.

(e) These safety provisions shall be brought to the notice of all concerned by display on a notice board at prominent place at the work spot. Persons responsible for ensuring compliance with the safety code shall be named there in by the Bidder.

i) To ensure the effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Bidder shall be open to inspection by the Engineer-in-charge or his representative and the inspecting officers.

ii) Failure to comply with the provisions hereunder shall make the Bidder liable to pay to the ABC as a penalty an amount not exceeding Rs. 50/- for each default and decision of the Engineer-in-charge shall be final and binding.

Notwithstanding the above conditions the Bidder is not exempted from the operation of any other Act or Rules in force.

**33. EXCAVATION AND TRENCHING:** All trenched 1.5 meters or more in depth, shall at all times be supplied with at least one ladder for each 30 meters in length or fraction thereof. Ladder shall be extended from bottom of trench to at least 1 meter above surface of the ground, sides of a trench which is 1.5 meters or more in depth shall be stepped back to give suitable slope, or security held by timber bracing, so as to avoid the danger of side collapsing. Excavated materials shall not be placed within 1.3 meters of edge of trench or half of depth of trench whichever is more. Cutting shall be done from top to bottom under no circumstances shall undermining or undercutting be done.

**34. DEMOLITION:** Before any demolition work is commenced and also during the process of the work.

a) All roads and open area adjacent to the work site shall be either be closed or suitably protected.

b) No electric cable or apparatus which is liable to be a source of danger or cable or apparatus used by operator shall remain electrically charged.

c) All practical steps, shall be taken to prevent danger to person employed, from risk of fire or explosion or hooding. No floor, roof or other part or a building shall be so over loaded with debris of materials as to render it unsafe.

**35. PAYMENTS** The tenderer must understand clearly that the rate quoted are for completed work and include all costs, due to labour, all leads and lifts involved and if further necessitated, scaffolding, plant, supervision, service works, power, etc. and to include all to cover the cost of night and round the clock work as and when required and no claim for additional payment beyond the prices or rates quoted will be entertained.

- 36. FINAL BILL:** The Bidder should submit final bill within one month after completion of the work and the same will be paid within 3 (three) months if it is in order as the availability of funds. Disputed items and claims if any shall be excluded from the final bill and settled separately later on.
- 37. CLAIMS:** Bills for extra work or for any claim shall be paid separately apart from the interim bill for the main work. The payment of bill for the main work shall not be withheld for want of decision on the extras or claims not covered in the appendices. Claims for extra work shall be registered within 30 (thirty) days of occurrences of the event. However, bills for these claims including supporting data / details may be submitted subsequently.
- 38. PRIORITIES OF WORKS TO BE EXECUTED:** Priorities for items to be executed shall be determined periodically keeping in view the final time limit allowed for the work and all the time schedule fixed for intermediate stages of work.
- 39. ELECTRIC POWER:** Arrangement for obtaining Electric Power connection will have to be made by the Bidder at his own cost.
- 40. PRELIMINARY ARRANGEMENTS:** The Bidder shall have to make at his own cost all preliminary arrangements for labour, water, electricity and materials etc. immediately after getting the work order. No claim for any extra payment or application for extension of time on the ground of any difficulty in connection with the above matter will be entertained.  
The Bidder shall at his own expenses, engage watchmen for guarding the materials and plant and machinery and the work during day and night against any pilferage or damages and also for prohibiting trespassers or damage to them. The Bidder shall have to make his own arrangements for water required for any purposes on the Work.  
The Bidder after completion of Work shall have to clean the Site of all debris and remove all unused materials other than those supplied by the ABC and all plant and machinery, equipment, tools etc. Belonging to him within one month from the date of completion of work, or otherwise the same shall be removed by the ABC at its cost and the Bidder shall not be entitled for payment of any compensation for the same.
- 41. ACCIDENT:** In the event of an accident involving serious injuries or damages to human life or death of any of his employees and or labourers or trespassers, the same shall be reported within 24 (twenty four) hours of the occurrence to the Chief Officer and the Commissioner of Workmen's Compensation.
- 42. PLANT:** All constructional plant, provided by the Bidder shall when brought on the Site be deemed to be exclusively intended for the construction of this Work and the Bidder shall not remove the same or any part thereof (say for the purpose of moving it from the part of the site to another or for repairs etc.) without the consent in writing of the Engineer-in-charge which shall not be unreasonably withheld.
- 43. PUBLIC UTILITIES:** In addition to clause 110 of M.O.S.T.(R.W) specifications for Road and Bridge works (Second Revision) 1988 following should be carried out:  
Public Utility services like H.T. Lines telephones lines, etc. which are visible at site should be taken notice of by the Bidders while planning their works. It shall be the Bidder's responsibility to inspect such services prior to the commencement of any work.  
While executing the works, the Bidders should take care to see that these services are not disturbed or damaged during the execution.

The Government will not be held liable or responsible for any delay in completion of the job under this Contract which may occur due to any damage occurred to such services in consequence of the Bidder's operations of delayed completion of the execution for the same.

**44. DRAWINGS:**

(A) **CONTRACT DRAWINGS:** The tendered rates/prices for the work shall be deemed to include the cost of preparation supply and delivery of all necessary drawings, prints, tracing and negatives which the Bidder is required to provide in accordance with the Contract.

(B) **COMPLETION DRAWINGS:** The Bidder shall submit to the Engineer within 2 (two) months of actual completion "completion" drawings as specified below and operation and maintenance instructions for the whole of the Work.

These drawings shall be accurate and correct in all respect and shall be shown to and approved by the Engineer earlier. For "completion" drawings two prints and one polyester film of quality approved by the Engineer or his representative shall be supplied.

**45. HANDING OVER OF WORK:** All the work and materials before finally taken over by Government will be the entire liability of the Bidder for guarding, maintaining and making good any damages of any magnitude. Interim payments made for such work will not alter this position. The handing over by the Bidder and taking over by the Chief Officer or his authorized representative will be always in writing, copies of which will go to the Chief Officer or his authorized representative and the Bidder. It is, however, understood that before taking over such work, Government will not put it into regular use as distinct from casual or incidental one except as specifically mentioned elsewhere in this Contract or as mutually agreed to.

**46. RELATION WITH PUBLIC AUTHORITIES:**

The Bidder shall comply with all rules, regulations, byelaws and directions given from time to time by any local or public authority in connection with this Work and shall himself pay fees or charges which are leviable on him without any extra cost to the ABC.

**47. DOCUMENTATION:** If so ordered by the Engineer-in-charge, the Bidder will prepare drawings of the work as constructed and will supply original and three copies to the Engineer who will verify and certify these drawings. Final as constructed drawings shall then be prepared by the Bidder and supplied in triplicate to the Engineer for record and reference purposes at the Bidder's cost.

**48.** If the potable water is not available in the river bed the Bidder has to make his arrangement for potable water required for concrete mixing its curing and other parts of the construction for which no extra claim will be paid by the ABC.

**49. DAY TO DAY QUALITY CONTROL OPERATION:** The day to day controls to be exercised by the Bidder and the Engineer enumerated in the below paragraphs.

**49.1 ALIGNMENT AND LEVEL CONTROL**

a) The Bidder should locate the centre line of the building from the pegs, pillars or reference points fixed during the location survey and from the information furnished in the Contract drawings. Any discrepancy between the reference points on the ground and those on the drawings should immediately be brought to the notice of the Engineer for reconciliation.

b) Based on the approved centre line, the Bidder should set up batter pegs {to delineate the limits of embankment / cutting and cleaning stacks (to determine limits of cleaning and grubbing)} and have these got checked and approved by the Engineer.

c) The Bidder should check the reduced levels of bench marks set up along the alignment. Any discrepancy in the reduced levels of those at site and as indicate in the drawings should immediately be brought to the notice of the Engineer for reconciliation. The Bidder should re-establish those bench marks which are found missing at site, and should establish additional bench marks as needed, for ensuring effective level control.

d) The Bidder shall be responsible for the true and proper setting out of the works in relation to original survey points, lines and levels of reference given by the Engineer in writing. If at any time during the progress of the works, any error shall appear or arise in the position levels dimensions or alignment of any part of the work, the Bidder on being required to do so by the Engineer, shall at his own cost rectify the error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer.

e) The Bidder shall carefully protect and prepare all bench marks, reference pillars and pegs used in setting out the works till final take over by the Engineer.

#### **49.2. CLAUSES IN THE CONDITIONS OF CONTRACT**

a] All materials and workmanship shall be of the respective type described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the Site. All samples shall be supplied by the Bidder.

b] No work is to be covered up or put out of view without the approval of the Engineer for his examination and measurements.

c] During the progress of the Works, the Engineer shall have the power to order, the removal from the site any suitable material, substitution of proper and suitable material and the removal and proper re-erection not withstanding any previous test or interim payment, therefor, and of any work which in respect of materials or workmanship is not, in the opinion of the Engineer in accordance with the Contract.

#### **49.3 IN CASE OF CEMENT CONCRETE WORKS:**

a) Besides manufacturer's test certificate for quality of cement at least one set of physical and chemical tests should be conducted for each source of supply for verification. Where the quality is in doubt, or where the cement had been stored for long periods or in improper condition, the Engineer shall call testing the cement at more frequent intervals.

b) Job mix formula based on trials carried out in the Bidder laboratory should be got approved by the Engineer.

c) The mineral aggregates should be tested for their properties. Water to be used for mixing should be tested for chemical impurities.

d) Checking for stability and sturdiness of form work.

e) Ensuring that the crucial equipment lime mixers and vibrators are in working order before start of work.

f) Control on water cement ratio.

g) Control on workability and time elapsed between mixing and placing of concrete.

h) Control on compaction and finishing.

i) Test on cubes samples at 7 to 28 days.

j) Checks on provisions for adequate curing.

52.4 In case of machinery work, control should be exercised on the quality of the materials (e.g. stone, brick, sand, cement etc.) as also on mortar proportion.

52.5 For R.C.C. Work, quality of steel in each batch may be approved on the basis of test certificate. The reinforcement layout should be checked for conformity with approved drawings and bar bending

schedules. All laps should be checked for conformity with the specification. The reinforcement should be free from oil and loose rust scale should be properly tied with binding wire.

**50. FIELD LABORATORY:** The Bidder shall have to arrange for testing for various materials. The testing of materials for work should be carried out as per frequently by the PWD. 25% of the test should be performed in P.W. Laboratory in variably failing to which recovery at prescribed of should be effective from Bidder's bill.

**51. SUPPLY OF COLOURED RECORD PHOTOGRAPHS and ALBUMS:** The Bidder shall arrange to take dated post card size coloured photographs at the rate of 10 photographs per month at various stages/ facts of the work including interesting and novel features of work as directed by the Engineer-in-charge and supply them in five copies each in separate albums of appropriate size.

He shall also arrange for the video filming of important activities of the work during the currency of the Contract and edit it to a video film of 60 to 180 minutes playing time.

It shall contain narration of the various activities in English/ Marathi by a competent narrator. The cassette shall be acceptable quality and the film shall be capable of providing colour pictures. This shall be considered as incidental to the work and no additional payment whatsoever will be made for the same.

**52. APPROVAL OF CONSTRUCTION MATERIALS AND CONSTRUCTION ACTIVITIES.**

Approval of all materials for the work shall be obtained in writing from Engineer-In-Charge or his representative before its use in the project.

Before taking up of any construction activity the construction work done earlier shall be got approved in writing. Any failure on this account may result in the work for which the Bidder will be solely responsible.

Materials and job mix etc. shall be got approved in writing at least 15 (fifteen) days in advance of the commencement of corresponding activity. The testing charges shall be borne by the Bidder.

Besides the prescribed tests and frequencies any other test or tests over the prescribed frequency shall also be carried out by the Bidder at his own cost if so directed by Engineer-In-Charge or his authorized representative.

**53. BIDDER'S FACILITY:** According to the Contract, the Bidder is responsible for the quality of the entire construction work. To meet this requirement:

a) The Bidder shall set up his own laboratory at location(s) approved by the Engineer. The laboratory shall be equipped with modern and efficient equipment with sufficient standbys, suitable to carry out the tests prescribed for different materials and work according to the specifications. The loss of equipment to be procured and the facilities to be provided shall be got approved by the Engineer. The equipment shall be mentioned in a workable condition to the satisfaction of the Engineer.

b) Sampling and testing procedures shall be in accordance with the relevant standards of BIS (Previously called ISI). In the absence of relevant Indian Standards, sampling and testing procedures shall be approved by the Engineer.

c) The laboratory should be manned by a qualified materials Engineer assisted by Material Inspector / Technicians, and the set up should be got approved by the Engineer.

d) The Bidder should prepare printed proforma for recording readings and results of each type of test after getting the formats of the performance approved from the Engineer. He should keep a daily record of all the test conducted by him. Two copies of the test results should be submitted to the Engineer for his examination and approval, of which one copy will be returned to the Bidder for being kept at site of work

e) The materials Engineer of the Bidder should keep close liaison with the Quality control unit of the Engineer and keep the latter informed of the sampling and testing program so that the Engineer's representative could be present during this activity, if considered necessary.

54. Bidder shall take out necessary insurance Policy / Policies (viz. Bidders all risks insurance policy, erection all risks insurance policy etc. as decided by the Directorate of Insurance) so as to provide adequate insurance cover for execution of the awarded Contract work for total Contract value and complete Contract period compulsorily from the "Directorate of Insurance, XYZ State" only. Its postal address for correspondence is " \_\_\_\_\_ " (Telephone Nos. xxxxxxxx / xxxxxxxx and Fax Nos. xxxxxxxx / xxxxxxxx) similarly all workmen's appointed to complete the Contract work are required to insure under workmen's compensation insurance policy, insurance policy / policies taken out from any other company will not be accepted. If any Bidder has affected insurance with any insurance company, the same will not be accepted and the amount of premium calculated by the Government Insurance Fund will be recovered directly from the amount payable to the Bidder for the executed Contract work and paid to the Directorate of Insurance Fund, XYZ State. The Director of Insurance reserves the right to distribute the risks of insurance among the other insurers.
55. The payment for the works done will be made as and when the funds are available under this head and no claims whatsoever from the agency on account of delay in payment will be entertained by the ABC.
56. **Building and other Construction Workers Welfare Cess:** Building and other Construction Workers Welfare Cess @ 1% or at the rates amended from time to time as intimated by the competent authority of Buildings and other Construction Works Welfare Act, 1996 shall be deducted from bill amount, whether measured bills, advance payment or secured advance.
57. **Additional Condition about availability of funds:** The payment of bills will be made as per availability of funds. No claims will be entertained for delayed payments.



## **Section-6 Scope of Work**

## Section-6 Scope of Work

### 1. City Information

#### 1. City Profile and sanitation situation in city

ABC is a 'B' class municipal council located in D district of State XYZ. ABC is a rapidly growing town as it is located on the outskirts of the larger city of D. The municipal area is \_\_ sq. km. ABC city population was \_\_\_\_ (as per census 2011) and there were \_\_\_\_\_ households. Around \_\_% households in ABC city have individual toilet facility, which are connected to septic tanks, while \_\_% of households are served by community toilets which are connected to septic tank. The septage from the septic tanks is collected by vacuum truck (owned by municipality) and disposed at the \_\_\_\_\_ site without any treatment. ABC proposes to introduce a X year cycle of scheduled septic tank emptying through private sector participation. It is thus expected that nearly XXX septic tanks (on an average XXXX litres capacity) will be emptied annually. In addition to these, ABC municipal council will daily empty \_\_ community level septic tanks with capacity of \_\_\_\_\_ litres. Septage collected from these septic tanks is expected to be treated in a treatment unit. The organic loading is also likely to be affected by the relative volumes of septage coming from household septic tanks with longer interval of desludging against septage from public or community toilets which are relatively fresh. It is estimated that the daily flow of septage will be \_\_\_\_\_ litres (\_\_ cum/day). Details regarding the city are listed below:

LOCAL CONDITION	DESCRIPTION	Data required
<b>Climate / weather</b>	Temp. range, rainfall range	
<b>Land Use</b>	Land use adjacent and in vicinity of FSSTP site: potential nuisance, presence of industry, agriculture, golf course etc.	
<b>Environmental sensitivity</b>	Sensitive rivers, coastline, lakes, ground water with ecological, economic, cultural, religious or strategic interest requiring stringent / high efficiency / reliability of FSSTP components performance. Required parameter limits.	
<b>Energy status</b>	Availability, sufficiency and reliability of electricity supply or other energy source.	
<b>Demography / Urbanization</b>	Total population and growth (% annual).	
<b>Land availability</b>	Site for FSM use: area, location, buffer distance from adjacent development	
<b>Soil conditions</b>	Sandy / clayey , percolation rates at FSSTP site	
<b>Ground / surface</b>	Average ground water depth in	

LOCAL CONDITION	DESCRIPTION	Data required
<b>water</b>	FSSTP site. Ground water (GW) variance over seasons. Use of ground / surface water for drinking, agriculture, industry, tourism, recreational (body contact) etc.	
<b>Cultural / religious</b>	Sensitivity to reuse of water / bio solids.	
<b>Other sludge inclusion during transportation</b>	Tanker also emptying industrial or other sludge. Prevalence.	
<b>Priority of objectives</b>	Priority for solving FS issue vs priority for reuse / recovery and revenue	
<b>Risk appetite</b>	Tolerance level of non-compliance to regulatory / legal requirements.	
<b>Available treatment</b>	Current Type of treatment: screening, thickening, digestion/ stabilisation, dewatering, composting, disposal.	
<b>Future prospects</b>	How is the FSSTP expected to change in short term (5 years) and long term (10 years). Increased population, coverage, volumes generated, collected, treated.	
<b>Reuse of treated waste water</b>	Potential demand for water reuse: potable, agriculture, industry, other	
<b>Energy</b>	Potential demand for energy: in-plant, local user, grid	
<b>Bio solids</b>	Potential demand for bio solids: food crops, non-food crops.	

## 2. Design-Build Services

### 2. General:

The Bidder shall carry out and be responsible for the design and construction of the septage treatment facility in ABC. The work includes (i) design and construction of Fecal Sludge & Septage treatment plant of capacity \_\_\_m<sup>3</sup>/day and all appurtenant structures and allied works including all necessary approvals from various government departments etc. complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer (period of completion of construction: \_\_ months; and (ii) O&M of the complete Works of Fecal Sludge & Septage treatment plant and allied works for a period of \_\_\_ years post trial run period at ABC, XYZ, India. The Bidder's work and services as part of the "Design-Build Services" shall include,

- a. the design services in respect of the \_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant and all allied works including treatment process, hydraulic, structural, electrical, instrumentation, mechanical and piping design, and all civil, mechanical, electrical and piping drawing including architectural and construction drawings and environmental assessment with necessary mitigation measures etc. to be provided including necessary approvals from various government department etc complete;
- b. the building and construction work and services in respect of the \_\_\_ m<sup>3</sup>/day capacity Fecal Sludge & Septage treatment plant and all allied works as per proposed design; and
- c. all work and services relating to the services set out in above in a and b necessary or desirable for the design and construction of the Fecal Sludge & Septage treatment plant and all allied works in accordance with and as contemplated by the Design-Build Documents and the technical standards for both design and operation.

### 3. Design Services

#### a. Design and Engineering

- i. The Bidder shall execute the basic and detailed design of \_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant and its execution in compliance with the technical specifications and requirements contained in the Contract, codes of practices as published by the Bureau of Indian Standard ("BIS") or its equivalent standard as well as "Manual on Sewerage and Sewage Treatment" as published by the Central Public Health Engineering Organization ("CPHEEO") of the Ministry of Urban Development, Government of India, New Delhi. Wherever, the codes, standards and manual do not provide for the design and execution of some component i.e. required to be designed and executed, the Bidder shall follow the standard engineering practices.
- ii. The offers shall be based on the Bidder's own design and operating philosophy which is to be based on the selected modern treatment technologies and should be within the overall framework and guidelines specified in the bid document and its

specifications. The bidder's design for the entire facility shall be such that the project shall (a) require minimum land space; (b) require minimum energy for treatment of septage; and (c) generates treated effluent and septage within the prevalent discharge standards of State Government and as amended from time to time. Planning of the entire system should be done in such a manner so as to optimize capital and operational costs of treatment of septage and maintenance of the FSSTP on whole on sustainable basis.

- iii. The lowest bidder shall have to obtain all necessary approvals for the proposal from designated government departments before commissioning the project. All charges, fees for such approvals and processes shall be borne by the bidder.
- iv. The Bidder shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the ABC or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Bidder by or on behalf of the ABC.

**b. Codes and Standards**

Wherever references are made in the Contract to codes and standards, including those codes and standards referred to in the Technical specifications as per section 8, in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current 30 (thirty) days prior to the submission deadline shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the ABC.

**c. Design Responsibilities: The Bidder's design and design-related services shall include:**

- i. Site investigation and data collection including characterisation of septage waste, topographical survey, soil investigation for the design and construction of the structures required for the Fecal Sludge & Septage treatment plant.
- ii. Selection, adoption and detailed engineering designs for the most appropriate techno-economically feasible and cost effective treatment process technology for the septage treatment and it should meet the prevalent discharge standards of State Government and as amended from time to time as may be applicable.
- iii. The acquisition of all data and information necessary to prepare the design and that are required to demonstrate that the \_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant meets or exceeds the Technical Standards;
- iv. the preparation of schematic design documents to illustrate the scale and character of the Design-Build Services and how the units of the process-adopted functionally relate to each other;
- v. Show detailed process design to prove that they can meet the standards, state parameters and range including solids content, end product solids parameters, effluent liquid parameters.
- vi. Treatment facility design should allow for flexibility of operation considering variations of inflow.

- vii. Mechanical and Electrical (“M&E”) design, Civil and Structural (“C&S”) design, specification for civil, structural, mechanical and electrical works;
- viii. The design shall consider variability of the parameters and possible impacts;
- ix. The preparation of design development documents, consisting of drawings and other documents appropriate to the size of the \_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant to describe the units and character of the entire proposed plant including architectural, mechanical, civil works, and electrical systems, materials, operations, landscaping, and such other elements as may be appropriate;
- x. The preparation of Design-Build Documents setting forth in detail the requirements for construction based on the design development documents accepted by the ABC;
- xi. Obtaining all approvals, permits, including building permits, and licenses if required for the Design-Build Services
- xii. The preparation of assurances required to regulatory authorities respecting conformance of the design with the applicable building regulations, environmental standards and occupational health and safety requirements, including construction safety issues;
- xiii. The coordination required to integrate all parts of the Design-Build Services;
- xiv. Such other Design-Build Services that may be required from time to time that are agreed to by the Bidder and the ABC in writing; and
- xv. The conducting of general reviews of the progress of the design process, to the extent necessary, in order to determine to the Bidder’s satisfaction that the design services are performed in compliance with the requirements of the Contract and Applicable Laws.

**d. Engineering design Documents**

- i. The Bidder shall prepare all of the Engineering Design documents. These shall include the plans, designs, drawings, as-built documents, operations manuals, specifications, schematic design documents, design development documents and models, and all modifications thereto required in order to properly and fully test for analyse for plan, design and build the Fecal Sludge & Septage treatment plant and all allied works as contemplated in the Technical Standards and the remaining provisions of the Contract.
- ii. The Bidder shall prepare any other document, as may be necessary for construction and commissioning of the facility, that the ABC council considers necessary to monitor the progress of the Design-Build Services and assess the Bidder’s compliance with the Contract.
- iii. The bidder shall prepare a detailed Operations and Maintenance Manual for the facilities designed and built by them.

**e. Design Considerations**

In preparing the design for the \_\_\_ m<sup>3</sup>/day Capacity Fecal Sludge & Septage treatment plant and all allied works and the Engineering design Documents, the Bidder shall,

- i. Protect public health and safety, maximize the protection of the environment and minimise any adverse environmental impacts caused by the construction of Fecal

Sludge & Septage treatment plant throughout the service area, including as may be required, recommended or advisable pursuant to any technical standard or environmental assessments conducted on, at or near the Fecal Sludge & Septage treatment plant Site ; ensure the Fecal Sludge & Septage treatment plant and all allied works has the capacity to accommodate the anticipated septage based upon the verifications prepared by [the Engineer]; ensure that the Fecal Sludge & Septage treatment plant and all allied works are designed to meet the requirements including a detailed review of the following measures to deal with environmental mitigation:

- (a) training materials to assist the ABC council in the long-term monitoring of surface water, groundwater wells, emissions and treated effluent;
- (b) the impact to local property values and the mitigation of the impact of disposal of treated effluent and sludge;
- (c) the impact of construction and operations noise on the local community;
- (d) the monitoring of surface water and groundwater impacts of the plant including a baseline monitoring program; and
- (e) the air quality impact to the Fecal Sludge & Septage treatment plant including the impact from gas, odour, dust and equipment emissions during construction and operations, odours during operation and gas exhaust any Fecal Sludge & Septage treatment plant units in case of flaring.

**f. Design Responsibilities- Off-site Issues**

In preparing the design for the \_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant and all allied works and the Engineering design Documents, the Bidder shall include as part of the design, plans and designs for the extension to the Site and facility of all utility services required for all of the services.

**g. Design Responsibilities, On-site Issues**

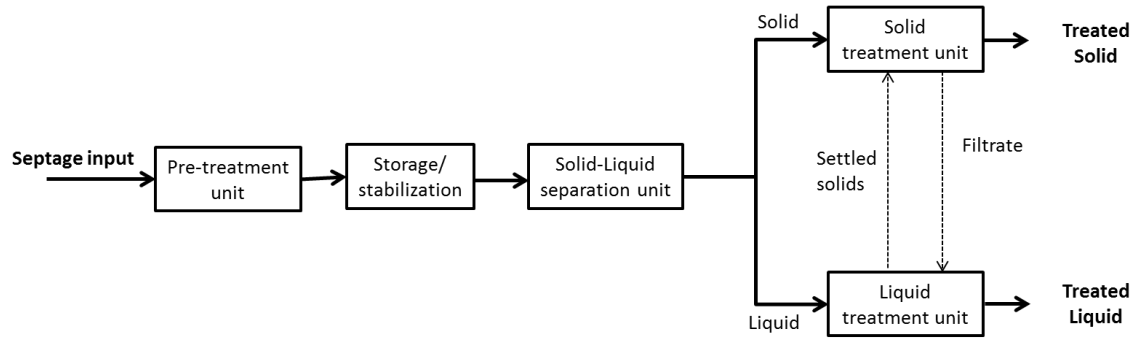
Make adequate preparation and plans and take adequate measures for controlling access to the Fecal Sludge & Septage treatment plant site by animals and humans and vehicles. In preparing the design for the Fecal Sludge & Septage treatment plant and the engineering design documents, the Bidder shall ensure that the design takes into account,

- i. traffic at the perimeter of the Fecal Sludge & Septage treatment plant site, including plans for plantings and vegetation, fencing, lockable gates at vehicular access points, and the creation of an internal perimeter access corridor inside or, with appropriate local and other approvals, surrounding the site;
- ii. internal access roads at the Fecal Sludge & Septage treatment plant site;
- iii. provision of utilities services at the Fecal Sludge & Septage treatment plant site such as electricity, telephone, potable water, non-potable water and septage / sewage collection and disposal; and
- iv. provision of areas for sludge storage/disposal.

**h. Fecal Sludge & Septage treatment plant Layout and Operation Sequence**

The Bidder shall be responsible for the planning and designing of the area of the Site for \_\_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant, including a design having the following layout and sequence:

- i. Schematic of Flow Diagram- The standard flowchart of septage treatment facility shall include but not be limited to components as given in diagram below:



- ii. Configuration of Fecal Sludge & Septage treatment plant - The Fecal Sludge & Septage treatment plant shall consists of pre-treatment (preliminary treatment is required to remove coarse solids, grit and scum, remove non-biodegradable components and remove grease), storage/stabilisation, solid-liquid separation, solid treatment and liquid treatment unit.
- iii. Construction of \_\_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant and all allied works including carrying out O&M of FSSTP for \_\_\_\_ years. Bidder shall verify these details as per Site condition.
- iv. Treatment unit as may be techno economically feasible and cost effective and meeting the prevalent discharge standards of State Government and as amended from time to time.
- v. The selected bidder / contractor shall have “Right to Sell” the treated septage and water for reuse by the potential buyers for the purpose of agriculture / commercial / industrial use. Bidder shall have to report about the sale of treated septage to ABC council. The selected bidder / contractor shall be solely responsible to carry out market survey and research to access the potential for sale of the treated effluent and make all the administrative, financial and legal arrangements with the potential buyers. The selected bidder / contractor shall be free to upgrade the treatment process beyond the standard process of treatment at depicted above own cost and risk and with minimum use of the land to be made available by the ABC council. The bidder in such a situation shall make his own arrangements for creating additional infrastructure that may be required for transmission and distribution of the treated septage at his own cost and risk.
- vi. On completion of the \_\_\_\_ years O&M Period, the bidder shall have to handover the Fecal Sludge & Septage treatment plant to the ABC in full working condition, as it was on the date of commissioning of the Fecal Sludge & Septage treatment plant. However, it will be open for the ABC council to either extend the O&M Period through



mutually agreed terms and / or accept to retain the additional infrastructure that the selected bidder has created for the sale of the treated effluent.

- vii. plans for the clearing and excavation of land, debris and other material at the Fecal Sludge & Septage treatment plant area; Site clearance, site surveys, soil investigation, submission of process design and hydraulic design calculations, plant lay out and hydraulic flow diagram (process & instrumentation diagram), preparation & submission of civil, architectural, general arrangement drawings & structural design of all civil works, electrical & mechanical equipment drawings including equipment installation drawings, supporting calculations & technical information, instrumentation & control system, construction of Fecal Sludge & Septage treatment plant and all allied works of required capacity (\_\_\_ m<sup>3</sup>/day) including all necessary bypass arrangements, aeration & chlorination requirement, sludge disposal arrangements, as per approved designs, testing, commissioning, performance testing of process units & trial run for a period of 1 (one) month.
- viii. Also includes landscaping of plant area, internal roads with access to all units, illumination of the entire Fecal Sludge & Septage treatment plant site, pathways, storm water drainage, compound wall all around & gates, administrative building including store house for tools and spares (covering a plinth area of \_\_ sqm), with water supply and waste water disposal arrangements, including geotechnical exploration, O&M manual and as-built drawings for all civil, electrical and mechanical works. All units shall be provided with draining arrangements with suitable valves/gates with chambers.
- ix. Supply and providing safety equipment namely gas mask, breathing apparatus, air hose respirator, portable lighting equipment, non-sparking lighting equipment, portable air blowers, safety belts, inhalators and diver suit at the commencement of O&M.
- x. Handing over of the Plant in good working condition with all relevant documents such as as-built drawings, physical & operational condition of the assets, rights on proprietary technologies, software, systems, O&M manual along with trainings of ABC staff to operate the plant, periodical reports along with soft copy to ABC Municipal Council.
- xi. The offer shall be based on the Bidder’s design, build, operate and transfer concept to be specified by the Bidder.

**i. Raw Septage Quality**

Tentative abstract of Raw Septage (collected from Septic tank) Characteristics is indicated in the following Table below:

Sr. No.	Parameter	Unit	Ranges
1.	pH	-	6-8
2.	Total Solids	mg/L	4000-11000
3.	Total Suspended Solids	mg/L	400-8000
4.	Biochemical Oxygen Demand (5 days,	mg/L	300-4000

Sr. No.	Parameter	Unit	Ranges
	20°C)		
5.	Chemical Oxygen Demand	mg/L	900-10000
6.	Oil & Grease	mg/L	2-50
7.	Total Dissolved Solids	mg/L	2000-7000
8.	Volatile Solids (550°C)	mg/L	500-1500
9.	Volatile Suspended Solids (550°C)	mg/L	200-900
10.	Volatile Dissolved Solids (550°C)	mg/L	200-600
11.	Potassium (as K)	mg/L	50-400
12.	Phosphorous (as P)	mg/L	2-5
13.	Total Nitrogen (as N)	mg/L	200-1800
14.	Calorific Value (on dry basis)	kcal/kg	1200-5000
15.	Settleable Solids	%	20-50
16.	Total Coliforms	MPN Index/ 100 ml	170 - 3.4x10 <sup>5</sup>
17.	Faecal Coliforms	MPN Index/ 100 ml	20-1000

- However the Bidders are requested to test the septage/ sewage for its parameters to be considered for design consideration on their own.
- Characteristics may vary outside the range. Design shall be shown in detail for the stated range of values and flows, with additional variation that can be accommodated by the design.

**j. Expected Treated Effluent Quality**

The Bidder shall design the process in such a way that the treated effluent quality attains minimum prevalent discharge standards of State Government and as amended from time to time.

**k. Expected Treated septage Quality for reuse**

For dewatered dried septage to be used as fertilizer in agriculture, it is recommended to refer MSW Rules for quality of compost and should have E-coli of 1000/g total solids in treated septage.

**l. Designation of \_\_\_\_\_ m<sup>3</sup>/day Fecal Sludge & Septage treatment plant on Site Areas for Other Uses**

In preparing the design and layout for the Fecal Sludge & Septage treatment plant, the Bidder shall designate areas of the Fecal Sludge & Septage treatment plant site for use in,

- Septage Treatment Units; including all civil, mechanical, electrical and instrumentation of the treatment units;
- Ancillary works;
- Site administration, office building and Lab building;
- Internal roads and pathways connecting the various units;
- Perimeter buffer zones;
- Toilet facility for working staff etc.

**m. Surface and Ground water management**

In preparing the design for the Fecal Sludge & Septage treatment plant and all allied works and the Design-Build Documents, the Bidder shall,

- i. plan and design the surface drainage at the Site of Fecal Sludge & Septage treatment plant with adequate water drainage channels, pipes, sewers, structures and appurtenances, including for higher, adequate to manage the highest seasonal levels and volumes of storm water; and
- ii. plan and design the Fecal Sludge & Septage treatment plant site with adequate protection from flooding whether from rain, groundwater, storms or any other source.

**n. Site Administrative Facility**

The Bidder shall be responsible for the administration of the Fecal Sludge & Septage treatment plant and all allied works during the Design-Build Period and the Bidder shall design,

- i. temporary office facilities for use by the Bidder and its subcontractors in the administration and execution of the Design-Build Services;
- ii. New facility for use in the administration of the Operations Services to accommodate personnel, furniture, utility services, a lunch room, washrooms and public toilets;
- iii. appropriate signage for the Site and the Fecal Sludge & Septage treatment plant , including signs that,
  - (a) identify the Fecal Sludge & Septage treatment plant and its units;
  - (b) provide warning and hazard notification in designated areas where warranted;
  - (c) identify areas of the Fecal Sludge & Septage treatment plant that are restricted to visitors and are accessible to only designated employees of the Bidder; and
  - (d) the landscaping for the Facility as contemplated by the Design-Build Documents.

**o. Other Design Responsibilities**

The Bidder shall carry out the following design or design-related responsibilities:

- i. the bidder shall prepare plans and designs for all Temporary Works as required by the bidder's design and as required by the Contract;
- ii. the bidders shall prepare plans and designs for landscaping of the site;
- iii. the bidder shall prepare plans and designs for the acquisition of all data and information necessary to prepare the design, including, but not limited to, any intrusive site investigations, off-site surveys and environmental baseline monitoring required or contemplated under the Contract; and
- iv. the bidder shall prepare detailed plans and methodologies for the testing and inspection of the Plant and Equipment.

**p. General Obligations**

As part of its obligations the Contractor shall also execute and perform all such works and/or supply all such items and materials, not specifically identified in this Contract, which:

- (a) are/is needed for the safe, trouble free and normal operation of the Plant;
- (b) can be inferred from this Contract as being required for completing the Works in accordance with the schedule of completion;
- (c) can be inferred in accordance with good industry practice, and/or Applicable Law that the provision or causing the provision of such work and/or supply of such items and materials, was contemplated as part of this Contract; or
- (d) is necessary to enable the Contractor to fulfil its obligations under this Contract and comply with the warranties set out in this Contract;

In each case, as if such work and/or materials were expressly mentioned in this Contract and the same shall be considered a part of the Works and shall be executed/ supplied by the Contractor, without any additional cost to the ABC council.

#### **4. Building and Construction Services**

##### **a. General**

- i. The Bidder shall carry out all building and construction of all units of Fecal Sludge & Septage treatment plant designed
- ii. The Bidder shall provide all of the demolition, excavation, building, co-ordination, repair, warranty, review, inspection, testing, quality assurance and control, monitoring, scheduling, clean-up etc. for construction of the Plant as contemplated by Design-Build Documents.
- iii. The Bidder shall have total control of the building and construction services and shall effectively direct and supervise the building and construction services so as to ensure conformity with the Design-Build Documents.
- iv. The Bidder shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the Design-Build Services under the Contract.

##### **b. Procurement and Transportation**

- i. The Bidder shall procure and transport all the equipment in an expeditious and orderly manner to the Site.
- ii. The Bidders shall at its own risk and expense for transport all equipment to the site.
- iii. The bidder shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of equipment, to the Site. The Bidder shall indemnify and hold harmless the ABC from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the to the Site.

##### **c. Building Responsibilities: Temporary Supports, Structures and Utility Services**

- i. The Bidder shall have the sole responsibility for the design, erection, operation, maintenance, and removal of temporary supports, structures and utility services and the design and execution of construction methods required in their use.

- ii. The Bidder shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions, where required by law or by the Engineering design Documents and in all cases where such temporary supports, structures and utility services and their designs and method of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results.

**d. Plant and Equipment**

- i. The Bidder shall provide and pay for labour, Plant and Equipment, tools, construction machinery and equipment, materials and supplies, water, heat, light, power, transportation, and all other facilities and services necessary for the performance of the Design-Build services in accordance with the Design-Build Documents.
- ii. The Bidder shall ensure that all Plant and Equipment provided are new. Plant and Equipment which are not specified shall be of a quality consistent with those specified and their use shall be acceptable to the ABC council.

**e. Documents at the Site**

- i. The Bidder shall keep one copy of the Engineering design Documents as up-dated, submittals, reports and records of meetings at the Site, in good order and shall make them available to the ABC council upon request and at any reasonable time.

**f. Use of the ---m<sup>3</sup>/day Fecal Sludge & Septage treatment plant site**

- i. The Bidder shall confine construction machinery and equipment, storage of Plant and Equipment, Bidder's Equipment (Design-Build) and Bidder's Equipment (Operations), and operations of Bidder's personnel to limits indicated by laws, ordinances, permits or the Design-Build documents and shall not unreasonably encumber the Site with Plant and Equipment, Bidder's Equipment (Design-Build) or Bidder's Equipment (Operations).
- ii. The Bidder shall not store plant and equipment, Bidder's Equipment (Design-Build) or Bidder's Equipment (Operations) at the Site which are not necessary for the construction of the Fecal Sludge & Septage treatment plant.

**g. Setting Out**

- i. The Bidder shall be responsible for the true and proper setting-out of the Site and the Fecal Sludge & Septage treatment plant in relation to benchmarks, reference marks and lines specified in the Design-Build Documents.
- ii. If, at any time during the construction of the Plant, any error shall appear in the position, level or alignment of the plant, the Bidder shall forthwith notify the ABC of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the ABC council.

**h. Quality Assurance**

- i. The Bidder shall institute a quality assurance system to ensure compliance with the requirements of the Design-Build documents. Compliance with the quality assurance system shall not relieve the Bidder of its duties, obligations or responsibilities.
- ii. The Bidder shall submit for approval details of all quality assurance procedures and documents relating to Bidder's compliance with the quality assurance system to the ABC council before each stage of the Design-Build services is commenced as set out in the time schedule. When any document is issued to the ABC council, it shall be accompanied by the signed quality statements for such document, if any. The ABC council may audit any aspect of the quality assurance system and the Bidder shall take any corrective action as the ABC council may deem appropriate.

**i. Bidder's Access Routes and Rights of Way During the Design-Build Period**

- i. The Bidder shall satisfy itself as to the suitability and availability of the access routes it chooses to use during the Design-Build Period for access to and from the Site. He shall, as between the Parties, be responsible for the maintenance of access routes during the Design-Build Period. The ABC council will not be responsible for any claims which may arise from the use or otherwise of any access route. The ABC council does not guarantee the suitability or availability of any particular access route, and will not entertain any claim for any non-suitability or non-availability for continuous use, during the Design-Build Period, of any such route.
- ii. The Bidder shall bear all costs and charges for special or temporary rights-of-way required by it for access to the Site. The Bidder shall also provide, at its own cost, any additional facilities outside the Site if required by it for the purposes of the Design-Build Services.

**j. Site Regulations and Safety**

- i. The Bidder shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. He shall prepare and submit to the ABC council, proposed Site regulations for the ABC's approval, which approval shall not be unreasonably withheld. Such Site regulations shall include rules in respect of security, safety of Plant, gate control, sanitation, medical care, emergency preparedness, emergency response, on-site safety training of employees and fire prevention.
- ii. The Bidder shall comply with all applicable safety regulations in providing the Design-Build Services and in occupying any part of the Site. Unless otherwise stated in the Design-Build Documents, the bidder shall, during the Design-Build Period,
  - (a) provide secure fencing, lighting, guarding and watching;

- (b) provide temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of its employees, Site visitors, owners and occupiers of adjacent land, the public and others;
  - (c) carry out safety briefings of applicable site regulations to all employees, subcontractors, agents, representatives and visitors to the Site prior to permitting first access of the applicable person to the and at regular intervals thereafter.
- iii. During the Design-Build Period, the Bidder shall develop and implement a comprehensive occupational health and safety program for the protection of the Bidder's Personnel and all other persons who may attend at the Fecal Sludge & Septage treatment plant site. The program shall include a description of how the Bidder will,
- (a) carry out all occupational health and safety responsibilities in respect of the Fecal Sludge & Septage treatment plant site as required under the Applicable Law;
  - (b) develop and manage all required occupational health and safety reporting procedures; and
  - (c) manage all occupational health and safety claims.

**k. Bidder's Equipment (Design-Build) and Site Clearance**

- i. All Bidder's Equipment (Design-Build) brought by the Bidder onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Bidder shall not remove the same from the Site without the ABC's consent that such Bidder's Equipment (Design-Build) is no longer required for the execution of the Contract.
- ii. The Bidder shall maintain the Fecal Sludge & Septage treatment plant site in a tidy condition and free from the accumulation of waste products and debris. The Bidder shall remove waste products and debris resulting from the Site and shall leave the facility clean and suitable for occupancy and performance of the Operations Services before attainment of substantial completion. The Bidder shall remove products, tools, construction machinery, and equipment, including the Bidder's Equipment (Design-Build), not required for the performance of the remaining Design-Build Services.
- iii. Upon the issue of any Completion Certificate, the Bidder shall clear away and remove, from the Fecal Sludge & Septage treatment plant site, all Bidder's Equipment (Design-Build), surplus material, wreckage, rubbish and temporary work or structures. The Bidder shall ensure that the Fecal Sludge & Septage treatment plant site is in a clean and safe condition to the satisfaction of the ABC.
- iv. If the Bidder fails to remove, no later than 30 (thirty) days after the issue of the Completion Certificate, any remaining Bidder's Equipment (Design-Build), surplus material, wreckage, rubbish and temporary work or structures, the ABC council may sell or otherwise dispose of such items. The ABC council shall be entitled to retain,

from the proceeds of such sale, a sum sufficient to meet the costs incurred in connection with the sale or disposal, and in restoring the Fecal Sludge & Septage treatment plant site. Any balance of the proceeds shall be paid to the Bidder. If the proceeds of the sale are insufficient to meet the ABC's costs, the outstanding balance shall be recoverable from the Bidder by the ABC council.

- v. The ABC council will, if requested, use reasonable efforts to assist the Bidder in obtaining any local, state or national government permission required by the Bidder for the export of the Bidder's Equipment (Design-Build) imported by the Bidder solely for use in the execution of the Contract that is no longer required for the execution of the Contract.

**I. Protection of the Environment**

- i. The Bidder shall take all reasonable steps to protect the environment, both on and off the Site, and to limit damage and nuisance to people and property resulting from pollution, noise, dust and other results of its services, including,
  - (a) adopting working practices that prevent or minimize the transfer of any pollutant off-site;
  - (b) maintaining the access roads in good repair;
  - (c) using appropriate dust suppressant methods;
  - (d) restricting trucking and loud machinery and equipment use to daylight hours;
  - (e) using mufflers, silencers and other appropriate methods to minimize the noise of the construction; and
  - (f) Maintaining a clean Fecal Sludge & Septage treatment plant site, that are free of garbage.
- ii. The Bidder shall monitor groundwater quality upstream and downstream of the Facility, throughout the process of construction.
- iii. The Bidder shall monitor water quality upstream and downstream of the \_\_\_m<sup>3</sup>/day Fecal Sludge & Septage treatment plant site, prior to and throughout the process of construction.

**m. Security of the Fecal Sludge & Septage treatment plant site**

Unless otherwise stated in the Design-Build Documents:

- i. the Bidder shall be responsible for keeping unauthorised persons off the Site from Fecal Sludge & Septage treatment plant
- ii. the Bidder shall maintain detailed record of all persons that enter the Fecal Sludge & Septage treatment plant site; and
- iii. the Bidder shall ensure that authorised persons shall be limited to the Bidder's personnel, the Engineer, employees of subcontractors and persons authorised by the ABC.

Property/ structure with geological or archaeological importance



- iv. The Bidder shall take reasonable precautions to prevent its employees, agents, representatives, subcontractors, or other persons from removing or damaging any fossils, coins, articles of antiquity, and structures and other remains or things of geological or archaeological interest at the Site. The Bidder shall, immediately upon discovery of such article or thing, advise the ABC, who may issue instructions for dealing with it. All fossils, coins, articles of value or antiquity, and structures and other remains or things of geological or archaeological interest discovered on the Site shall be the property of the ABC council.

**n. Emergency Work**

- i. If, by reason of an emergency arising in connection with and during the execution of the Design-Build Services, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Fecal Sludge & Septage treatment plant site, the Bidder shall immediately carry out such work.
- ii. If the Bidder is unable or unwilling to do such work immediately, the ABC may do or cause such work to be done as the ABC may determine is necessary in order to prevent damage to the Site of the Fecal Sludge & Septage treatment plant. In such event the ABC council shall, as soon as practicable after the occurrence of any such emergency, notify the Bidder in writing of such emergency, the work done and the reasons therefore. If the work done or caused to be done by the ABC is work that the Bidder was liable to do at its own expense under the Contract, the reasonable costs incurred by the ABC in connection therewith shall be paid by the Bidder to the ABC council. Otherwise, the cost of such remedial work shall be borne by the ABC council.

**o. Work at Night and on holidays**

- i. Unless otherwise provided in the Contract, no work shall be carried out outside of the hours of operation of the Fecal Sludge & Septage treatment plant and on public holidays without prior written consent of the ABC, except where work is necessary or required to ensure safety of the Fecal Sludge & Septage treatment plant site or for the protection of life, or to prevent loss or damage to property,
- ii. Septage load from septage sucking machines should only be accepted from 7:00 am to 7:00 pm. No septage load should be accepted in night hours or on national public holidays.

**5. Test and Inspection**

- a. The Bidder shall at its own expense carry out at the place of manufacture or on the Site all such tests and inspections of the plant & equipment. The Bidder shall, in addition to those tests and inspections set out in the Contract, develop a plan for all testing and inspection of the equipment that is required in order to complete the Fecal Sludge & Septage treatment plant in accordance with the Technical specifications volume-II.
- b. The ABC council or their designated representatives shall be entitled to attend any test or inspection, provided that the Bidder shall bear all costs and expenses incurred in connection

- with such attendance including, but not limited to, all traveling and board and lodging expenses.
- c.** Whenever the Bidder is ready to carry out any test or inspection, the Bidder shall give a reasonable advance notice of such test or inspection and of the place and time thereof to the ABC council. The Bidder shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the ABC council or their designated representatives to attend the test or inspection.
  - d.** The Bidder shall provide the ABC council with a certified report of the results of any test or inspection.
  - e.** If the ABC council, or their designated representatives, fails to attend the test or inspection, or if it is agreed between the Parties that such persons shall not do so, then the Bidder may proceed with the test or inspection in the absence of such persons, and shall provide the ABC council with a certified report of the results thereof.
  - f.** The ABC council may require the Bidder to carry out any test or inspection not required by the Contract, provided that the Bidder's reasonable costs and expenses incurred in the carrying out of such test or inspection shall be reimbursed. Further, if such test or inspection impedes the progress of work on the Fecal Sludge & Septage treatment plant or the Bidder's performance of its other obligations under the Contract, due allowance will be made in respect of the time for completion and the other obligations so affected.
  - g.** If any plant and equipment or any part of the Fecal Sludge & Septage treatment plant fails to pass any test or inspection, the Bidder shall either rectify or replace such plant and equipment or part of the Fecal Sludge & Septage treatment plant and shall repeat the test or inspection
  - h.** If any dispute or difference of opinion arises between the Parties in connection with or arising out of the test or inspection of the plant and equipment or part of the Fecal Sludge & Septage treatment plant that cannot be settled between the parties within a reasonable period of time, it may be referred to an adjudicator/ technical expert for determination in accordance with General Conditions of Contract.
  - i.** The Bidder shall give the ABC, at the ABC's expense, access at any reasonable time to any part of the Fecal Sludge & Septage treatment plant or any place where the plant and equipment are being manufactured or installed in the Fecal Sludge & Septage treatment plant, in order to inspect the progress of the work and the manner of manufacture or installation, provided that the ABC shall give the Bidder a reasonable prior notice.
  - j.** The Bidder agrees that neither the execution of a test or inspection of plant and equipment or any part of the Site and the Fecal Sludge & Septage treatment plant, nor the attendance by the ABC, nor the issue of any test certificate shall release the Bidder from any other responsibilities under the Contract.
  - k.** No part of the plant or foundations shall be covered up on the Site without the Bidder carrying out any test or inspection required under the Contract. The Bidder shall give a reasonable notice to the ABC whenever any such part of the plant or foundations is ready or about to be ready for test or inspection; such test or inspection and notice thereof shall be subject to the requirements of the Contract.

## 6. Reporting during the Design-Build Period

### a. Design-Build Progress Reports

- i. The Bidder shall prepare monthly progress reports of the Design-Build Services during the Design-Build Period and submit six copies of the reports to the Engineer-In-Charge. The first report shall cover the period up to the end of the calendar month after that in which the Design-Build starting date occurred and reports shall be submitted monthly thereafter, each no later than 10 days after the last day of the month to which it applies.
- ii. The Design-Build Services monthly reports shall include the following information:
  - (a) photographs and detailed descriptions of progress, including each stage of design, procurement, manufacture, delivery to the Fecal Sludge & Septage treatment plant site, construction, erection, testing and commissioning;
  - (b) charts showing the status of Design-Build Documents, purchase orders, manufacture and construction;
  - (c) for the manufacture of each main item, equipment, machinery, floor or component of the Fecal Sludge & Septage treatment plant, the name of manufacturer, manufacture location, percentage progress, and the actual or expected dates of commencement of manufacture, Bidder's inspections, tests and delivery relating thereto;
  - (d) detailed records of the Bidder's Personnel and Bidder's Equipment (Design-Build) on the Fecal Sludge & Septage treatment plant site and the actual usage of the Bidder's Equipment (Design-Build) during the reporting period and the tasks performed by the Bidder's Personnel;
  - (e) copies of quality assurance documents, test results and certificates of the Plant and Equipment;
  - (f) all monitoring results;
  - (g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations;
  - (h) percentage completion achieved compared with the planned percentage completion for each activity; and
  - (i) where any activity is behind in the scheduled completion, comments and likely consequences and a description of the corrective action being taken.

### b. Replacement of Key Staff to be deployed by the Operator during the Design build period.

- i. If replacement of any Key Staff during design & build services period becomes necessary, the Operator shall submit a proposal for ABC's approval, advising therein the name of the replacement staff of equivalent or higher qualifications duly supported by his resume.
- ii. The overlap period of the new key staff and the staff to be replaced shall be minimum of one month

## **7. Commissioning and trial run of Fecal Sludge & Septage treatment plant**

- i. The plant shall then be on trial operation of 30 days during which period all necessary adjustments shall be made while operating, over the full load-range enabling the plant to be made ready for performance and guarantee tests. The contractor shall provide necessary staff. The trial operation shall be considered successful, provided that each item of the equipment can operate continuously at the specified characteristics, for the period of Trial Operation.
- ii. Bidder shall be responsible for carrying out all the necessary pre-commissioning tests. On completion of inspection, checking and after the pre-commissioning tests are satisfactorily, over, the complete plant shall be placed on initial operation during which period the complete equipment shall be operated integral with sub-systems and supporting equipment as a complete plant.
- iii. Any special equipment, tools and tackles required for the successful completion of the performance and guarantee tests the contractor will provide this free of cost.
- iv. The contractor during the performance and guarantee tests shall provide the guaranteed performance figures of the equipment. Should the results of these tests show any decrease from the guarantee values, the contractor shall modify the equipment as required to enable them to meet the guarantees. In such case, performance and guarantee tests shall be repeated within one week from the date the equipment is ready for re-test and costs for modifications including labor, materials and the cost of additional testing to prove that the equipment meets the guarantees, shall be borne by the contractor.

### 3. Operations Services

#### 1. Introduction

The bidder shall ensure the operation and maintenance of the Fecal Sludge & Septage treatment plant (FSSTP) in compliance to the CPHEEO Manual on “Sewerage & Sewage Treatment”, published by the Central Public Health Environmental Engineering Organization (CPHEEO), Ministry of Urban Development, Government of India, New Delhi and the prescription laid down hereunder.

#### 2. Scope of Work

The Bidder shall operate and maintain the Fecal Sludge & Septage treatment plant, and all other allied works under this contract, for a period of 3(three) years and provide the following services (“Operations Services”). Salient features of Operations Services are:

- After construction of the Fecal Sludge & Septage treatment plant, the Bidder shall operate and maintain FSSTP plant as per specifications and maintain the quality of the treated effluent as prescribed in the Design-Build Documents.
- The Bidder will monitor the performance of the Fecal Sludge & Septage treatment plant; conduct the analysis of the inlet septage and effluent/septage quality after treatment. Bidder shall initiate and take adequate actions to ensure smooth and satisfactory performance / running of the plants on a 24 hours / round the clock basis.
- The Bidder shall prepare and implement an effective plant maintenance programme in consultation with the ABC council. It is an absolutely Bidder’s responsibility to look after all sorts of maintenance whether preventive, minor, major or break-down.
- The Bidder will determine operating parameters, and generally optimize the process, and working of the treatment plant.
- The Bidder should plan & procure all spares and all consumables including chemicals, grease, lubricating oil, cleaning agents, laboratory reagents etc.
- The Bidder will be responsible for keeping up-to-date record of documents including history card for equipment and maintaining every day log book relating to various analyses performed.
- The Bidder at his/her own cost shall maintain and update logbook, in which details of operational parameters are recorded at regular interval as decided mutually.
- The FSSTP will accept septage load from suction trucks from time to time in a day from 7:00 am to 7:00 pm, beyond which it should not accept septage load. Also it should accept load only from the authorized contractor of ABC council only.
- The Bidder will prepare and submit a daily report of plant performance and will assist the ABC council in preparing the necessary documents for their purpose and records.
- The Bidder will be responsible to carry out day to day periodic maintenance, necessary to ensure to smooth and efficient performance / running of all equipment / instruments

comprising the Fecal Sludge & Septage treatment plant and maintaining the record of the same.

- The Bidder shall have to issue identity cards with photographs to all the staff employed for operation and maintenance. The list of the same shall be submitted to the ABC council mentioning qualification & experience.
- The Bidder will also be responsible to carry out day to day maintenance inside the Fecal Sludge & Septage treatment plant premises.
- The Bidder will employ required staff for operation and maintenance of the Plant as per the list submitted by bidder in their proposal during \_\_\_\_ years of O&M period.
- The staff of Bidder will always remain in contact with the Junior Engineer, Assistance Engineer/Electrical Supervisor, in charge of the Plant deployed by the ABC council and follow their instruction.
- Unsatisfactory and inefficient running of the plant and unnecessary and excessive usage of spare, consumable, etc. supported by the reasons which are under control of Bidder will be highly objected. In such cases ABC's decision will be final and binding to the Bidder.
- It is required that at least once in every one month a technical expert other than the Monthly Staff of the Bidder will visit the plant and will suggest if required, to improve the efficiency and working of the plant etc. No separate payment will be made for such visits. The visit must be recorded and outcome of the visit/minutes of the meeting should be signed by ABC authorities without which the visit shall not be considered.
- Bidder will comply with all safety rules and regulations and all inter disciplinary as followed by the ABC council.
- The ABC council will not be responsible for any accident /injury to the staff of the Bidder. Further the ABC council will not provide any insurance or medical facility to the staff of Bidder. The responsibility lies with the Bidder.
- All Central/State Government / Semi-Government / Local Body's Rules and Regulations pertaining to this contract shall be followed and observed by the Bidder without any extra cost to the ABC council.
- No accommodation / guesthouse / transportation facility will be provided by ABC council to the Bidder. Operation & maintenance staff will not be allowed any accommodation facility inside the plant premises.
- The Bidder should employ all the staff within 7(seven) days of successful commissioning.
- The Bidder will provide the necessary tools and tackles required for day-to-day maintenance.
- The scope of work also includes cleaning of complete plant area including floor, toilet block railing, door, windows, light fixtures and ceiling etc. The entire premises of the plant area shall also be cleaned and maintain by the Bidder regularly.
- This work is inclusive of but not limited to operation, maintenance, housekeeping, cleaning, removing sludge by its own carrier arrangement & disposes it off as per ABC's instructions.

Preparing data recording, correspondence work to ABC council and Government departments, etc. All this work should be done as per standard practices and by following labour, factory, electrical, and all other old and new law and order, Indian standards etc. as applied of Local, State and Central Government of India.

- Right is reserved by ABC council for suspension, dismissal, termination of any officer / staff employed by Bidder. He shall have taken prior permission to employ or to terminate his personnel.
- No watch and ward, safety insurance, security, storage, housing accommodation etc. will be provided by ABC council. This will be responsibility of Bidder.
- Consumable items like rubber bush, graphite packing, rubber sheet, nut-bolts, material require for cleaning and housekeeping etc. are to be brought by the Bidder.
- Electricity charges including diesel in case of power failure required for operation & maintenance of the Plant shall have to be borne by the Bidder. The Bidder should provide all other consumables like polyelectrolyte, chlorine, oil & grease etc. All the formalities to all Government authorities for factory, electrical, etc. for obtaining no objection certificate, water consent, hazardous waste concern, approval etc. shall be done by the Bidder.
- Monitoring should be done as per guidelines provided by ABC council. Bidder has to maintain all the parameters of effluent within stipulated limit or he will be penalized for not maintaining the prevalent discharge standards of State Government and as amended from time to time. All expenditure incurred for the same like, suit fee, court fee, case fee, or the penalty as decided by Engineer of ABC council and penalty charged by relevant government authority will be charged to Bidder and deducted from his bills, security Deposit etc.
- Bidder shall have to test the effluent / influent at his own cost at the government approved laboratory as per schedule mentioned in bid document. The same be verified by and checked by ABC council whenever required.
- No equipment shall remain ideal or un-attended or damaged for the period of 3 (three) days. If any equipment is not repaired, rectified and or replaced within 3 (three) days, the Bidder will be penalized with no limit at the rate of INR 2000/- (Indian rupees two thousand) per day delay per each individual equipment of the plant.
- If the Fecal Sludge & Septage treatment plant remains non-functional for more than 3 consecutive days, the Bidder will be penalized at the rate of INR 10000/- (Indian rupees ten thousand) per day delay beyond 3 days.
- The payment of O&M charges will be made as per the tender conditions. The other terms and condition described in these complete tender documents, wherever applicable shall remain unchanged. In case of any discrepancy the decision of ABC council will remain final & binding on the Bidder.
- During O&M Period, Bidder has to supply all the spares, at his cost during preventive, major-

minor breakdown, replacement and maintenance work. No extra payment will be made for such maintenance on any ground. The payment for the same will be made strictly as per tender document irrespective of the number of break down / minor, major repairs replacements. During the O&M Period, the Bidder will have to enter into annual maintenance agreement with manufacturers of all major mechanical equipment.

- Maintenance of garden, lawns, plants, bushes, plantation of new plants, lawns etc. and feeding, gardening, cleaning etc. is in the scope of the Bidder. No separate payment will be made for the same.
- The Bidder during his O&M Period will have to follow all the guidelines set by relevant government authority of XYZ state for operation & maintenance of Fecal Sludge & Septage treatment plant.
- Operation and maintenance of all General facilities and utility services including all other components of work done under this Contract.
- The Bidder shall also dispose of the sludge, screenings, grit and any other material, as per specifications and to the satisfaction of the ABC council. It is to be noted that all costs during the O&M Period, including the cost of power and chemicals are to be borne by the Bidder.
- Within his quoted cost, the Bidder is to ensure that guarantees are maintained during the O&M Period for quality of treated effluent, treated septage, consumption of chemicals and for automation.
- The Bidder shall provide on job training to the local body staff as per specifications.
- At the end of every year of operation & maintenance period, an assessment of the condition of the plant has to be done by the Bidder through third party inspection at his own cost and based on that assessment the Bidder shall, at no extra cost to the ABC council, repair and re-condition all the mechanical equipment in the concluding year of the O&M contract to a condition so that they are in running condition with regular preventive and recommended maintenance as per manufacturer's recommendations or as per CPHEEO manual.
- Variability of Throughput: If the quantity of treated septage from the Plant increased in the existing system without impacting the annual fixed costs to the Bidder, the Bidder shall comply with such requirements.

### **3. OUTPUT AND OPERATIONAL GUARANTEES**

The Bidder is fully responsible for treating all the fecal sludge and septage reaching at the receiving chamber. The performance of the Bidder shall be treated as unsatisfactory if he fails to treat the septage or does not maintain the guarantees set out in the Contract except in event of any force majeure condition or fails to fulfil other conditions of the contract.



**4. Treated Effluent Quality**

The Bidder shall operate the Fecal Sludge & Septage treatment plant in such a way that the treated effluent and septage quality attains parameters as prescribed in this Contract.

**5. Treated Sludge Disposal**

The bidder will be responsible for disposal/ reuse of treated sludge after treatment as per prevailing norms.

**6. Chemical Requirements**

All chemicals consumed to operate the FSSTP as per this Contract will be borne by the Bidder.

**7. TESTS TO BE CARRIED OUT DURING O&M PERIOD**

Sampling and testing to be carried out as per CPHEEO guideline. Tests are to be carried out under the supervision of qualified staff and as per instructions of the Engineer-in-Charge. The responsible employee of the contractor will indicate the details of sample locations timings on the sample template.

The Bidder should get analysed / checked the untreated as well as treated septage and effluent samples and tested in approved government laboratory at his own cost. The MPCB Vigilance testing charges for samples directly collected by MPCB are also to be borne by the Bidder.

During routine monitoring, samples of influent, effluent are analysed based on the Analysis Schedule given in the following Table for the given parameters.

Sr. No.	Description of Sample	Frequency	Location of Sampling	Type of Sample	Test parameters
1	Influent septage	Two times in a month	Before screening	Composite	Temp, pH, BOD, COD, TSS, VSS, Alkalinity, Sulphate, Faecal Coliform, Total Coliform
2	Treated Effluent Wastewater	Two times in a month	After Treatment unit	Composite	Temp, pH, BOD, COD, TSS, VSS, Alkalinity, Sulphate, Faecal Coliform, Total Coliform
3	Treated Septage/Sludge	Two times in a month	After treatment unit	Grab	Moisture content, NPK Value
4	Treated Septage/Sludge	One sample in every Six months	After treatment unit	Grab	Helminth Eggs

### **8. Staff**

The Bidder shall mention the number and nature of personnel's required for O&M in his bid. Non-employment of those personnel during O&M as per the Bid will lead to imposition of penalty as mentioned in Contract data.

### **9. SAFETY /SECURITY**

The Bidder shall take all safety precautions under various Acts/Rules under central/State Govt. from time to time and he shall be responsible for safety of its staff and the consequences thereof. The Bidder shall deploy round the clock security personnel at entrance of Plant's premises and in the compound for the safety of the Plant and premises for the safety of the Plant, equipment and personnel during this period.

### **10. Responsibility for damages**

The Bidder shall ensure that the staff employed takes all necessary precautions while carrying out the work either in shift duties or any general shift as per Indian Electricity Rules/Factory Act/CPHEEO Manual, or manufacturer's special instruction for safety / gas handling. The staff should use gas masks, oxygen apparatus, gum boots, safety belts and safety lamps, etc. while carrying out the work in bar screens, sumps etc.

### **11. REPORTING**

The Bidder at its own cost will prepare and print daily and monthly reports (in approved ABC format) of pumping/treatment and project performance and submit to the ABC council and will assist the department in preparing the necessary documents for their purpose and record as per proforma given from time to time. The reports shall contain, inter-alia, the following:

- Raw Septage quantity and quality and effluent quality as per the monitoring format and other tests as specified in this section shall be submitted to Engineer-in Charge. Treated quality of septage and effluent as per monitoring format and shall be submitted to Engineer-in-charge. The plant manager shall verify the daily record as well as the calculations and shall be responsible to generate further data using these.
- A description of the maintenance work carried out in the reporting period.
- A report on major failures, if any, their causes and remedial actions taken.
- Sludge quality and quantity (daily basis) in the reporting period.
- Power and chemicals consumed in the reporting period.
- An inventory of the chemicals and spare parts available at the end of the reporting period.
- O&M staff deployed by the Bidder during the reporting period.
- Any major repair works, if any.
- Bidder is required to maintain separate register/computerized records at all sites of following information:
  - i. Pumping register

- ii. Quantity of septage/ sewage treatment and performance register
  - iii. Working hours register
  - iv. Electric break down register
  - v. Maintenance register
  - vi. Staff attendance register
- Equipment breakdown, repair record and extent of repair.
  - Chlorination equipment and chlorine toner operating and using register.
  - Self-reporting by Fecal sludge and Septage Treatment Plant operator as per form given in annexure-4.

## **12. Site Order Book**

Site order book shall be kept by the Engineer-In-Charge at the Plant site. Orders entered in this book by the ABC council or his authorized representative shall be held to have been formally communicated to the Bidder. The Engineer-In-Charge or his authorized representative shall sign each order as it is entered and will hand over the duplicate to the Bidder or his agent, who shall sign the original in acknowledgment of having received the order.

### **13. Release of Hazardous Substances or Hazardous Waste (If Any)**

The Bidder shall be responsible for fulfilling all requirements associated with any release of any substance into the environment (from the Plant or the Site) as required by Applicable Law or by any legal entitlement including but not limit to the notification or reporting of releases / hazardous substances or hazardous waste. The Bidder shall prepare a memorandum evidence such notification or reporting and provide copies thereof to the ABC council, along with any documents provided to the relevant regulatory agency regarding such release.

The Bidder shall process and obtain the clearance of all such agencies as required for the purpose, including all clearances during O&M Period. He shall be fully responsible to comply with all requirements of laws including hazardous substances, emission standards for air, discharge standards for effluent oil, sub-soil pollution. The Operator shall not release any hazardous/toxic materials inside the premises.

### **14. Technical Audit**

The ABC council has the right to conduct a technical audit of the Plant and to perform any analysis or inspection he deems necessary. The Bidder shall at his cost provide all assistance the ABC council required to complete these inspections. Such audits may cover all or any of the obligations of the Bidder, including without limitation,

- Verification of the system capacity and save for normal wear and tear during the O&M Period.
- Verification of the performance standards and useful life of the individual assets of the Facility, save for normal wear and tear during the O&M Period.
- Verification of the capacity of the Plant to meet output standards during the residual life of the Plant and save for normal deterioration expected during such residual life.
- Sampling, testing and verification of the output standards for treated septage / effluent.

### **15. Operation and Maintenance Manual**

- The Bidder shall prepare a detailed program (referred to as O&M Manual) covering the operation and maintenance of the treatment plants as a whole.
- The O&M Manual shall include the daily, weekly, monthly, quarterly, half yearly and annual checks and remedies if necessary to be performed for effective operation of the plant, elaborate detail, all operating and maintenance procedures and policies which are required, advisable and /or necessary for the FSSTP facility to achieve full compliance with the operational guarantees and to achieve maintenance and repair standard for the Facility which will ensure compliance with the maintenance specifications. The O&M manual shall include *interalia* full explanation of all plant procedures and processes.
- Without limiting the generality of the foregoing the O&M Manual shall include descriptions, procedures and shall comply with the requirements, set forth in the provisions of the Bid Documents.

- The draft of the O&M Manual shall be subject to the review and approval of ABC council, which shall have the right to make any changes and revisions to the O&M Manual as it may deem appropriate. The Bidder shall revise such draft O&M Manual prior to the commencement of the O&M period.
- At the end of the construction period, the Bidder shall revise the draft O&M Manual to reflect any updates, changes or revisions it deems appropriate, inter-alia based on its experience and as necessary to reflect any modifications or adjustments to the plant. Without limiting the above, the Bidder shall annually fully review, revise, update and modify the draft O&M Manual as may be necessary or appropriate. Any revision to the draft O&M Manual shall be subject to the review and approval of ABC council.
- ABC council shall have the right to require revisions to the draft O&M Manual as it may deem appropriate. The Bidder shall prepare and submit to ABC council, for its review and approval, 30days prior to the proposed date of commencement of O&M, a revised draft O&M Manual which reflects all changes, revisions and modifications. The Bidder shall prepare the O&M Manual, as approved by the ABC council, prior to the start of O&M.

#### **16. TRANSITION PLAN – Taking Over**

- (1) The transition plan shall include,
  - (a) plans to transfer the Fecal Sludge & Septage treatment plant to the subsequent operator as designated by the ABC council;
  - (b) transition plans with respect to the Operator’s personnel including a plan for transition of the Operator’s personnel to a subsequent operator;
  - (c) a proposed process for the transfer of all Contract records to the ABC council;
  - (d) plans to transfer operations and maintenance functions to the subsequent operator; and
  - (e) a program to train staff of the ABC council in all aspects of the operation and maintenance of the Plant and the facilities.

#### **17. Taking Over after completing of O&M Period of 3 Years**

The Plant will be taken over by ABC council on satisfactory completion of the O&M Period of the plant provided that

- The plant /equipment are in good, smooth running condition.
- The result of the treated effluent/septage quality for last 3 (three) months of operation of the plant is within the limits specified.
- In case of major repairs /replacement of equipment, the performance guarantee for such unit/equipment is extended by 6 (six) months from the date of putting back in to satisfactory operation of such unit/equipment In case such putting back is at the end of completion of O&M period.

DBOT Tender Document for Fecal Sludge & Septage Treatment Plant at City ABC, XYZ

- All records of operation and maintenance are handed over to ABC council in proper condition.
- The third party Inspection of the plant viz: Civil units, mechanical units/equipment, electrical units/equipment, instruments & all other Major& minor units/machines has to be carried out & the defects unsatisfactory working performances of the equipment/ machines are to be corrected by the Bidder at his own cost. The necessary third party inspection agency shall be appointed and payment shall be borne by the Bidder.
- The Bidder should repaint the plant including all civil structures, mechanical, electrical equipment's/ units /structures as per the tender specifications.

In case taking over is delayed on account of Bidder's failure, the O&M period will be extended further till it meets the requirement without any extra cost to ABC council. The Bidder will also be penalized for such delays.

## **Section-7 Price Bid and Terms of Payment**

## Section-7 Price Bid and Terms of Payment

**1. Price Bid**

**a.** The Price Schedules are divided into separate Schedules as follows:

Schedule A: Price quoted for Design, drawings and all necessary approvals from various government departments etc. before start of execution of the project; and construction and commissioning Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer-In-Charge

Schedule B: Price quoted for Operation & Maintenance of Fecal Sludge & Septage treatment plant and allied works etc. complete for a period of \_\_\_ years

(Note: For Schedule B Contractor has to quote the bid amount for \_\_\_ years of operations and maintenance.)

**b.** Bidder must submit the price bid online only.

Sr No	Description	Unit	Quote in Rs.
Schedule A	Design, drawings and all necessary approvals from various government departments etc. before start of execution of the project etc. complete and Construction and Commissioning Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer-In-Charge	Number	
Schedule B	Operation & Maintenance of Fecal Sludge & Septage treatment plant and allied works etc. complete for a period of ___ years	Number	

**c.** If a Bidder submits bid asking for payments for the cost of setting up the Fecal Sludge & Septage treatment plant facility, it shall submit with its bid details evidencing that the cost claimed for the payment is based on a realistic assessment of setting up the Fecal Sludge & Septage treatment plant facility. The ABC council shall have the option to seek further details including details of costs of similar contracts executed by the bidder in the past.

**d.** The entered prices are deemed to include the full scope of work as detailed in tender document, including overheads and unforeseen circumstances.

**e.** The Bid Price shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the Bidding Documents.

**f.** The Bid price shall include all kinds of taxes, duties, levies or charges.



## 2. Schedule of payment and condition

Payment schedule for Design, Construction and Commissioning of Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works including all necessary approvals from various government departments etc. including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer-In-Charge and operating it for a period of \_\_\_ years.

### SCHEDULE A1. MILESTONE PAYMENT BREAK-UP FOR DESIGN, DRAWINGS and APPROVAL

<b>Design, Detailed Engineering Drawings and Approval (20% of Price quoted for Schedule A in price bid)</b>		
1	On obtaining all necessary approvals for the proposal from designated government departments before start of execution of the project	50%
2	On submission of final working engineering drawings for FSSTP including Process and Hydraulic Design Calculation, Layout Plan, Hydraulic Flow Diagram, structural design, design for Mechanical, Electrical, Instrumentation components etc.	50%

### SCHEDULE A2. MILESTONE PAYMENT BREAK-UP FOR CONSTRUCTION AND COMMISSIONING

<b>Construction/ erection/ installation and commissioning of Fecal Sludge &amp; Septage treatment plant and trial run for 1 month (80% of Price quoted for Schedule A in price bid)</b>		
1	Construction/erection/ installation of pre-treatment unit etc. complete as per technical design specification and approved by Engineer-In-Charge	15%
2	Construction/erection/ installation of storage/ stabilization unit etc. complete as per technical design specification and approved by Engineer-In-Charge	15%
3	Construction/erection/ installation of solid- liquid separation unit etc. complete as per technical design specification and approved by Engineer-In-Charge	15%
4	Construction/erection/ installation of solid treatment unit etc. complete as per technical design specification and approved by Engineer-In-Charge	15%
5	Construction/erection/ installation of liquid treatment unit etc. complete as per technical design specification and approved by Engineer-In-Charge	15%
6	Supply/erection/ installation of Piping, Mechanical, Electrical & Instrumentation works along with spares as specified etc. complete as per technical design specification and on testing, commissioning and satisfactory trial runs etc. as approved by Engineer-In-Charge	15%
7	On successful completion of trial run of septage treatment unit etc. as approved by Engineer-In-Charge	10%

### **B. Operation & maintenance of Fecal Sludge & Septage treatment plant and allied works etc. complete for a period of 3 years**

The total price quoted for Part B by the bidder will be divided in 36 equal monthly instalments. The contract value quoted by the Bidder will include cost of O&M of Fecal Sludge & Septage treatment plant

and allied works and all other costs including labour, material and others, as needed. No claims for additional payment will be entertained. The payment would be made as follows:

- a.** Monthly payment will be made to the Contractor against submission of invoice and performance report as per clause 11 (Reporting) in operation services of section-6 (Scope of work). In case the output standards of the treated septage and effluent do not meet prevalent discharge standards of State Government and as amended from time to time, 20% (twenty percent) of the running bill will be deducted. In case of failure to achieve the output standards more than 5 times, the entire amount payable will be withheld. In Case of non-compliance ABC council will take action as per Clause 66 of Section-5 Conditions of Contract – A. General Conditions
- b.** ABC council will open an escrow account in a nationalized bank to ensure timely monthly payment to contractor. This account will have a deposit equal to at least three months of payment.

## **Section-8 Technical Specifications**

## Section-8 Technical Specifications

### GENERAL

The \_\_\_ m<sup>3</sup>/day capacity of the Fecal Sludge & Septage treatment plant shall comply with the guidelines contained in —Manual on Sewerage and Sewage Treatment Latest Edition published by the Central Public Health & Environmental Engineering Organization (CPHEEO), Ministry of Urban Development, Government of India.

- The special attention of the bidder is drawn to the relevant sections and clauses of the National Building Code of India, CPHEEO Manual & State Govt. PWD specifications and latest BIS Codes (Latest editions along with amendments) and should follow them strictly in addition to the specifications & conditions stipulated in this volume.
- Materials and workmanship shall comply with the relevant Indian Standards (**latest versions** with amendments), or with the requirements of any other authoritative standard approved by the Engineer-in-Charge which shall be no less exacting in the opinion of the Engineer-in-Charge than the corresponding standard quoted here in.
- All standards, tentative specifications, specifications, codes of practice referred to herein shall be the latest editions including all applicable official amendments and revisions.
- If no standard is indicated, the relevant Indian Standard, if any, shall apply. Indian standards are published by BIS.
- Handbook (1990) shall be followed, wherever not specified in this “Volume II: Technical Specifications”, State Govt. PWD specifications (1990 or latest version with all amendments) and IS specifications shall be applicable in case of discrepancy Engineer-in-Charge’s decision will be final & binding. Specifications for different Materials as per IS codes.
- The Technical Standards and Specifications contained in this contract shall be read along with the following standard specifications (latest versions) published by the Bureau of Indian Standard listed below:

The list is not exclusive and the operator shall be responsible to follow the appropriate standards:

- i) IS 6280 – 1971 – Sewage Screens
- ii) IS 8413 – 1982 – Biological Treatment Equipment – Part II and its modifications
- iii) IS 10037 – Part I – 1981 & Part II & III – 1983 – Sludge dewatering equipment’s
- iv) IS 10261 – Requirements for settling tank for wastewater
- v) IS 105533 – Part I, II, III – Chlorination Plants
- vi) IS 5600 – 1970 - Sewage and Drainage Pumps
- vii) IS 6279 – 1971 – Grit Removal devices

## Technical Specifications

Technical specifications for Fecal Sludge & Septage treatment plant to be read in conjunction with scope of work, design criteria and other technical details:

### List of Important Indian Standards:

The following list includes various Indian Standards which are IMPORTANT and are referred to in the general specifications and used in construction works. These standards are to be strictly adhered to unless otherwise is applicable in the relevant context. These standards are to be followed both in respect of materials and construction of civil engineering works included in the tenders.

Though the list of Indian Standards includes the year of Publication of the standard, it may not in all cases be the latest. It is obligatory that only the latest edition of the standard is referred to and followed, along with all amendments and revisions issued with respect to the standard under consideration. This list is not exhaustive but contains only the standards that are very frequently used on the construction works. If a standard exists for a particular item of material or equipment or code of practice the same shall be followed whether the same is included in this list, specifications, other parts of the tender documents or not.

All standards which the Bidder intends to use but which are not part of the above Standards or other listed Reference Standards, shall be submitted to the Engineer for consent before any design against that standard proceeds.

### A: CIVIL SPECIFICATIONS

#### Specifications Referred

The specifications contained herein are not exhaustive and for such items of works which may arise and which are not covered by this specification, or by the relevant Indian Standards, the provisions in the P.W.D. Handbook Vol. I and II (latest edition) shall apply. A list of few important Indian Standards is given below: Wherever reference to the Indian Standards mentioned below or otherwise appears in this specification, it shall be taken as a reference to the latest version of the standard.

Relevant IS Code	Description
<b>GENERAL</b>	
IS 4082	Stacking & storage of construction materials and components at site – Recommendations
IS 1200	Method of measurement of building and civil engineering work.(All Parts)
IS 1141	Seasoning of Timber – Code of practice
<b>EARTH WORK and Excavation</b>	
IS 3674	Safety code for excavation work
IS 3385	Code of practice for measurement of civil engineering works
IS 1498	Classification and identification of soils for general engineering purposes.
IS 1200	Method of measurement of earth work

Relevant IS Code	Description
IS 2720	Part II - Determination of Moisture Content Part VII - Determination of Moisture content dry density relation using light compaction Part VIII - Determination of Moisture Content Dry Density using heavy compaction Part XXVIII - Determination of Dry Density of soils, in place, by the sand replacement method Part XXIX - Determination of Dry Density of soils, in place, by the core cutter method.
IS 4081	Safety code for Blasting and related drilling operation
IS 4988 (Part-IV)	Excavators
IS 6313 (Part-I)	Anti-Termite Construction Measures
IS 6313 (Part-II)	Anti-Termite measures in buildings (pre-constructional)
IS 6313 (Part-III)	Anti-Termite measures in buildings for existing buildings
IS 6940	Methods of test for pesticides and their formulations
IS 8944	Chlorpyrifos emulsifiable concentrates
IS 8963	Chlorpyrifos – Technical specifications
IS 12138	Earth moving equipment
<b>MORTARS</b>	
IS 269	Specification for 33 grade ordinary Portland cement
IS 455	Specification for Portland slag cement
IS 650	Specification for standard sand for testing of cement
IS 1269	Specification for 53 grade ordinary Portland cement
IS 12330	Specification for sulphate resisting Portland cement
IS 1542	Specification for sand for plaster
IS 2116	Specification for sand for masonry mortar
IS 2250	Code of practice for preparation and use of masonry Mortar
IS 3025	Method of sampling and test for water
IS 6925	Methods of test for determination of water-soluble chlorides in concrete admixtures
IS 3406	Specification for masonry cement
IS 3812 (Part-I)	Specification for flyash for use as pozzolana in cement mortar and concrete
IS 3812 (Part-II)	Specification for flyash for use as admixture in cement mortar and concrete
IS 8041	Rapid hardening Portland cement
IS 8042	Specification for white cement
IS 8112	Specification for 43 grade ordinary Portland cement
IS 1298	Methods of test for determination of free lime in portland cement
IS 6452	High alumina cement for structural use
IS 1489	Portland Pazzolana Cement
IS 4031 (Parts-1 to 13)	Methods of physical tests for hydraulic cement.
IS 4032	Method of chemical analysis of hydraulic cement.
<b>CONCRETE and Allied WORK</b>	

Relevant IS Code	Description
IS 383	Specification for coarse and fine aggregate from natural source for concrete
IS 303	Coarse and fine aggregates from natural sources for concrete
IS 2430	Methods for sampling of aggregates for concrete
IS 2386	Method of test for aggregates for concrete
(a) Part-I : Particle size and shape	
(b) Part-II : Estimation of deleterious materials and organic impurities	
(c) Part-III : Specific gravity, density, voids absorption and bulking	
(d) Part-IV : Mechanical properties	
(e) Part-V : Soundness	
IS 2505	General requirements for concrete vibrators – immersion type
IS 2506	General requirements for concrete vibrators – screed board concrete vibrators
IS 2645	Specification for integral water proofing compounds for cement mortar and concrete
IS 7861 (Part-I)	Code of practice for extreme weather concreting (Part-I) recommended practice for hot weather concreting
IS 7861 (Part-II)	Code of practice for extreme weather concreting (Part-II) recommended
IS 9103	Specification for concrete admixtures
IS 460	Test sieves
IS 1607	Methods for dry sieving
IS 1834	Hot applied sealing compounds for jointing concrete
IS 4990	Specification for plywood for concrete shuttering work
IS 9013	Method of making, curing and determining compressive strength of accelerated cured concrete test specimens
IS 8142	Method of test for determining setting time of concrete by penetration resistance.
IS 9284	Method of test for abrasion resistance of concrete
IS 2770	Methods of testing bond in reinforced concrete
<b>REINFORCED CEMENT CONCRETE WORK</b>	
IS 1904	Structural safety of buildings, shallow foundation
IS 1893	Criteria for earthquake resistant design of structures
IS 432 (Part-I)	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement part-I mild steel and medium tensile steel bars
IS 432 (part-II)	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement part-II hard drawn steel wire
IS 456	Code of practice for plain and reinforced concrete
IS 516	Method of test for strength of concrete
IS 1199	Method of sampling and analysis of concrete
IS 1200 (Part-II)	Method of measurement of building and civil engineering work – concrete work
IS 1200 (Part-V)	Method of measurement of building and civil engineering work –

Relevant IS Code	Description
	concrete work (Part 5 – Form work)
IS 1566	Specification for hard drawn steel wire fabric for concrete requirement
IS 1599	Method of bend test
IS 1343	Code of practice for Prestressed Concrete
IS 1786	Specification for high strength deformed steel and wires for concrete reinforcement
IS 1791	Specification for batch type concrete mixes
IS 2438	Specification for roller pan mixer
IS 2210	Criteria for the design of reinforced concrete shell structures and folded plates.
IS 5525	Recommendation for detailing of reinforcement in reinforced concrete works
IS 2502	Code of practice for bending and fixing of bars for concrete reinforcement
IS 2751	Recommended practice for welding of mild steel plain and deformed bars for reinforced construction
IS 3414	Code of practice for design and installation of joints in building
IS 4326	Code of practice for earthquake resistant construction of building.
IS 4014	Code of practice for steel tubular scaffolding.(parts-I & II)
IS 2571	Code of practice for laying in-situ cement concrete flooring
IS 4925	Batch plants specification for concrete batching and mixing plant
IS 5892	Specification for concrete transit mixer and agitator
IS 7242	Specification for concrete spreaders.
IS 4926	Ready – Mixed Concrete
IS 6523	Specification for precast reinforced concrete door, window frames
IS 2514	Specification for concrete vibrating tables
IS 3366	Specification for pan vibrators
IS 4656	Specification for form vibrators for concrete
IS 11993	Code of practice for use of screed board concrete vibrators
IS 7251	Specification for concrete finishers
IS 2722	Specification for portable swing weigh batchers for concrete (single and double bucket type)
IS 2750	Specification for steel scaffoldings
IS 10262	Recommended guidelines for concrete mix design
IS 13311 (Part-I)	Indian standard for non-destructive testing of concrete. Method of test for ultrasonic pulse velocity
IS 13311 (Part-II)	Indian standard for non-destructive testing of concrete. Method of testing by rebound hammer.
IS 3370	Concrete structures for storage of liquids
IS 1568	Wire gauge for general purposes
IS 1139	Hot rolled mild steel and medium tensile steel deformed bars for concrete reinforcements



<b>Relevant IS Code</b>	<b>Description</b>
IS 2502	Code of practice for bending and fixing of bars for concrete reinforcement
IS 2751	Code of practice for welding of mild steel bars used for reinforced concrete work
SP-16 (S&T)-1980	Design Aids for Reinforcement Concrete to IS:456-1978
SP-24	Explanatory Handbook on IS:456-1978
SP-34 (S&T)-1987	Handbook on Concrete Reinforcement and Detailing
<b>STEEL WORK</b>	
IS 226	Structural steel
IS 2062	Steel for general structural purpose
IS 800	Code of practice for use of structural steel in general in steel construction
IS 806	Code of practice for use of steel Tubes in general building construction
IS 808	R.S. beam, channel and angel sections
IS 814	Covered electrodes for metal arc welding of structural steel
IS 816	Code of practice for use of metal arc welding for general construction in mild steel
IS 818	Code of practice for safety and healthy requirements in electric and gas welding and cutting operations
IS 822	Code of procedure for inspection of welds
IS 1038	Steel doors, windows and ventilators
IS 1081	Code of practice for fixing and glazing of metal (Steel and aluminum) doors, windows and ventilators
IS 1148	Hot rolled steel rivet bars for structural purpose
IS 1161	Steel tubes for structural purposes
IS 1200 (Pt. VIII)	Method of measurements of steel work and iron works
IS 1363	Black hexagon bolts, nuts, and lock nuts (dia 6 to 39mm) & black hexagon screws (dia 6 to 24mm)
IS 1367	Technical supply conditions for threaded steel fasteners
IS 1821	Dimensions for clearances holes for bolts and screws
IS 2074	Ready mixed paint, air drying redoxide zinc chrome priming
IS 3954	Hot rolled steel channel sections for general engineering purposes
IS 4736	Hot – dip zinc coating on mild steel tubes
IS 4923	Hollow steel sections for structural use – specification
IS 6248	Metal rolling shutters and rolling grills
IS 7205	Safety code for erection of structural steel work
IS 7452	Specification for hot rolled steel sections for doors, windows and ventilators
<b>BRICK WORK</b>	
IS 712	Specifcation for building limes
IS 1077	Common burnt clay building bricks
IS 1200 (Part 3)	Method of measurements of brick works
IS 2180	Heavy duty burnt clay-building bricks

Relevant IS Code	Description
IS 2212	Code of practice for brick work (1 <sup>st</sup> Revision)
IS 3495	Method of test for burnt clay building bricks
IS 5454	Methods of sampling of clay building bricks
IS 13757	Specification of burnt clay fly ash bricks
IS 2691	Burnt clay facing bricks
<b>MARBLE WORK</b>	
IS 1122	Method of test for determination of true specific gravity of natural building stones
IS 1124	Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones
IS 1130	Marble (blocks, slabs and tiles)
IS 4101 (Part-I)	Code of practice for external facing and veneers: Stone facing
IS 14223 (Part-I)	Polished Building Stones ( Part-I) Granite
<b>WOOD WORK AND P.V.C. WORK</b>	
IS 204 (Part-I)	Specification for tower bolts (ferrous bolt)
IS 208	Specification for door handles
IS 287	Recommendations for maximum permissible moisture contents of timber used for different purpose
IS 303	Specification for plywood for general purposes
IS 401	Code of practice for preservation of timber
IS 453	Specification for double acting spring hinge
IS 710	Specifications for Marine Plywood
IS 1003 (Part-I)	Specification for timber paneled and glazed shutter Part-I (Door shutters)
IS 1003 (Part-II)	Specification for timber paneled and glazed shutter Part-II (Window and ventilator shutters)
IS 1200 Part-XIV	Method of measurement of building and civil engg. Work glazing
IS 1200 Part-XII	Wood work and joinery
IS 4020	Methods of test for wooden flush doors
IS 10451	Steel sliding shutters
IS 10521	Collapsible gates
IS 1328	Specification for veneered decorative plywood
IS 1341	Specification for steel butt hinges
IS 1659	Specification for block boards
IS 1823	Specification for floor door stopper
IS 1868	Specification for anodic coating on aluminium and its alloy
IS 2046	-do- Decorative thermosetting synthetic resin bonded laminated sheet
IS 2095	Specification for gypsum plaster board
IS 2202 (Pt I)	Specification for wooden flush door shutter, solid core type (plywood face panels)
IS 2209	Specification for mortice lock (Vertical Type)
IS 2547	Specification for gypsum plaster
IS 3097	Specification for veneered particle board
IS 3564	Specification for door closer (hydraulically regulated)

Relevant IS Code	Description
IS 3847	Specification for mortice night latch
IS 5930	Specification for mortice latch
IS 7196	Specification for hold fast
IS 8756	Specification for mortice ball catch for use in wooden almirah
IS 9308 (Part-II)	Specification for mechanically extracted coir fibres (Mattress coir fibres)
IS 12817	Specification for stainless steel butt hinges
IS 12823	Specification for wood products – Prelaminated particle Boards
IS 14900	Specifications for transparent float glass
IS 4021	Timber door, windows and ventilator frames.
IS 2191	Wooden flush door shutters (cellular and hollow core type)
<b>FLOORING</b>	
IS 777	Glazed earthen ware tiles
IS 1200 (Part-XI)	Method of measurement of Building and Civil Engineering work (Part 11) paving, floor finishes, dado and skirting
IS 1237-Edition 2.3	Specification for cement concrete flooring tiles
IS 1443	Code of practice for laying and finishing of cement concrete flooring tiles
IS 2114	Code of practice for laying in-situ terrazzo floor finish
IS 3622	Specification for sand stone (Slab & Tiles)
IS 4457	Acid and / or alkali Resistant tiles
IS 5318	Code of practice for laying of hard wood parquet and wood block floors
IS 5766	Code of practice for laying of burnt clay brick floor
IS 13630 (Part-1 to 15)	Methods of Testing for ceramic tiles
IS 13712	Specification for ceramic tiles, definition, classification characteristic and marking
IS 15622	Specification for pressed ceramic tile.
<b>ROOFING</b>	
IS 277	Galvanized steel sheets (Plain and corrugated)
IS 651	Glazed stoneware pipes and fittings
IS 1200 (Pt IX)	Method of measurements of building and civil engineering work : Part-9 Roof covering (including cladding)
IS 1200 (Pt X)	Method of measurements of building and civil engineering work : Part-10 ceiling and lining
IS 2095 (Pt-1)	Gypsum plaster boards (Pt. 1) plain Gypsum plaster boards
IS 2935	Specification for flat transparent sheet glass
IS 459	Corrugated and semi corrugated asbestos cement sheet
<b>FINISHING WORKS / PLASTERING</b>	
IS 1542	Sand for plaster
IS 1661	Code of practice for cement and cement-lime plaster finishes on walls and Ceilings
IS 1625	Code of practice for preparation and use of lime mortar in buildings
IS 2250	Code of practice for preparation and use of masonry mortars

Relevant IS Code	Description
IS 712	Building limes
IS 1635	Code of practice for field slacking of lime and preparation of putty.
IS 427	Distemper, dry colour as required
IS 428	Distemper, oil emulsion, colour as required
IS 6278	Code of practice for white washing and colour washing
IS 106	Ready mixed paint, brushing, priming for enamels for use on wood.
IS 102	Ready mixed paint, brushing, red lead, non- setting, priming
IS 123	Ready mixed paint, brushing, finishing, semi-gloss, for general purposes
IS 1477	Code of practice for painting of ferrous metals in buildings
IS 2074	Ready mixed paint, red oxide-zinc chrome priming
IS 2339	Aluminium paint for general purposes in dual container
IS 2932	Enamel, synthetic, exterior, type 1
	(a) under coating,
	(b) finishing, colour as required
IS 2394	Code of practice for application of lime plaster finish
IS 137	Specification for ready mixed paint, brushing, matt or eggshell flat finishing interior to Indian Standard colour as required
IS 1131	Specification for enamel, interior
	(a) under coating
	(b) finishing.
IS 129	Specification for ready mixed paint, brushing, grey filler for enamel for use over primers
IS 533	Specification for gum spirit of turpentine (oil of turpentine)
IS 101	Methods of tests for ready, mixed paint, & enamels
IS 124	Specification for ready mixed paint, brushing, finishing semi glass.
<b>(Part I) general purposes</b>	
IS 2933	Enamel, Exterior
<b>(a) Under Coating</b>	
<b>(b) Finishing</b>	
IS 63	Whiting for paints
IS 133	Enamel, interior, undercoating & finishing colour as required
IS 2395	C.P. for painting concrete, masonry & plaster surfaces
IS 5410	Cement Paint
IS 5411	Plastic emulsion, Paint Part- I for interior use
IS 419	Specifications for putty for use in window frames
<b>ROAD WORK</b>	
IS 164	Ready mixed paint for road marking
IS 278	Specification for galvanized steel barbed wire for fencing
IS 1838 (Pt.1)	Specification for performed filters for expansion joint in concrete pavements and structures (non extruding and resilient type / bitumen impregnated fibre)

Relevant IS Code	Description
IS 73	Paving bitumen with bitumen felts
IS 73-1992	Specification for paving bitumen
IS 1203	Method of testing tar and bituminous material Determination of penetration
<b>CONSTRUCTION SAFETY</b>	
IS 3696	Safety code for scaffolds and ladders.(Parts-I & II)
IS 7969	Safety code for handling and storage of building materials
IS 8989	Safety code for erection of concrete framed structures.
<b>WATER SUPPLY, SANITARY INSTALLATIONS &amp; DRAINAGE</b>	
IS 771 (Pt.1)	Specification for glazed fire clay sanitary appliances : part 1: General requirements
IS 1172	Code of practice for basic requirements for water supply, drainage and sanitation
IS 1703	Water fittings – copper alloy float valves (horizontal plunger type) – Specification
IS 1729	Cast iron / Ductile iron Drainage Pipes and pipe fittings for Over ground non-pressure pipe line Socket and Spigot Series
IS 1795	Specification for pillar taps for water supply purposes
IS 2326	Specification for Automatic Flushing Cisterns for Urinals (Other than plastic cisterns)
IS 2548 (Part-1)	Plastic seats and covers for water closets Part 1 : Thermo set seats and covers – Specifications
IS 2548 (Part-2)	Plastic seats and covers for water closets Part 2 : Thermoplastic seats and covers specification
S 2556	Vitreous sanitary appliances (vitreous chine) – Specifications
IS 2556 (Part-1)	Part-1: General requirements
IS 2556 (Part-2)	Paart-2 : Specific requirements of wash-down water closets
IS 2556 (Part-4)	Part-4 : Specific requirements of wash basins
IS 2556 (Part-6)	Part-6 : Specific requirements of Urinals & Partitions plates
IS 2556 (Part-7)	Part-7 : Specific requirements of accessories for sanitary appliances
IS 2963	Specification for copper alloy waste fittings for wash basins and sinks
IS 3076	Specification for low density polyethylene pipes for potable water supplies
IS 3306	Specification for chemically resistant glazed stoneware pipes and fittings
IS 4827	Specification for electroplated coating of nickel and chromium on copper and copper alloys
IS 4984	Specification for high density polyethylene pipes for potable water supplies
IS 4985	Unplasticised PVC pipes for potable water supply – Specifications
IS 5329	Code of practice for sanitary pipe work above ground for buildings
IS 5434	Non-ferrous alloy bottle traps for marine use
IS 5455	Specification for cast iron steps for manholes

Relevant IS Code	Description
IS 7231	Plastic flushing cisterns for water closets and urinals – Specifications
IS 13983	Stainless steel sinks for domestic purposes – Specifications
IS 774	Specification for flushing cistern for water closets and urinals
IS 775	Specification for cast iron brackets and supports for wash basins and sink.
IS 778	Specification for cast copper alloy gate and check valves for water works.
IS 651	Specification for salt glazed stoneware pipes and fittings.
IS 3597	Method of test for concrete pipes
IS 1239	Mild steel tubes and tubulars
IS 1711	Self closing taps
IS 1726	Cast iron manhole covers and frames intended for use in drainage works
IS 1742	Code of practice for building drainage
IS 2065	Code of practice for water supply in buildings
IS 2470	Code of practice for design and construction of septic tank
IS 2693	Non-ferrous waste fittings for wash basins and sink
IS 4127	Code of practice for laying of glazed stoneware pipes
IS 4346	Washers for water taps for cold water services
IS 778	Gun metal gate, globe and check valves for water services
IS 7634	Laying and jointing for polythene pipes and PVC pipes (Part I to III)
IS 8008 Part I	Specification for injection Moulded HDPE fittings for potable to IV) water supplies
IS 3844	Code of practice for installation of internal fire hydrants in multi storey buildings
IS 780	Specification for sluice valves for water works purposes (50 to 300 mm size)
IS 781	Specification for cast copper alloy screw down bib taps and stop valves for water services
IS 782	Specification for caulking lead
IS 909	Underground fire hydrant, sluice valve type – Specification
IS 2692	Ferrules for water services – Specification
IS 15450	PE-AL-PE Pipes for hot and cold water supplies – Specifications
IS 15778	Chlorinated Polyvinyl Chloride (CPVC) pipes for potable hot and cold water distribution supplies – Specifications
IS 1230	Cast iron rain water pipes and fittings
IS 1626	Asbestos cement building pipes, gutters and fittings (Spigot and socket type)
IS 2527	Code of practice for fixing rainwater gutters and downpipes for roof drainage
IS 458	Pre-cast concrete pipes (with and without reinforcement)
IS 783	Code of practice for laying concrete pipes
IS 1728	Specification for Cast Iron Manhole Covers and Frames

<b>Relevant IS Code</b>	<b>Description</b>
IS 4127	Code of practice for Laying of Glazed Stone Ware Pipes
IS 12592	Pre-cast Concrete Manhole Covers and Frames-Specifications
IS 5382	Specification for rubber sealing rings for gas mains, water mains and sewers
IS 13592	Unplasticised polyvinyl chloride (UPVC) pipes for soil and Waste discharge system for inside and outside building
<b>ALUMINIUM WORK</b>	
IS 733	Wrought Aluminium Alloys, Bars, Rods and Sections (For General Engineering Purposes) – Specification
IS 737	Wrought Aluminium and aluminium alloy sheet
IS 1285	Wrought Aluminium and Aluminum Alloy, Extruded Round Tube and Hollow sections (for General Engineering Purposes) – Specification
IS 1868	Anodic coating on Aluminium and its alloy – Specification
IS 1948	Specification for Aluminium Doors, Windows and Ventilators
IS 5523	Method of testing anodic coating on aluminum and its alloys
IS 6012	Measurement of coating thickness by Eddy Current Method
IS 6315	Floor springs (Hydraulic regulated) for heavy doors – Specifications
IS 6477	Dimensions of extruded hollow section and tolerances
IS 14900	Transparent Float Glass – Specifications
<b>WATER PROOFING TREATMENT</b>	
IS 3370 (Part 1)	Code of practice for concrete structures for the storage of liquid : Part-1 General Requirements

**B: MECHANICAL SPECIFICATIONS**

The contract includes design, manufacture, testing at works, supply and delivery at site, unloading, storing till the time of erection, installation, testing and commissioning of mechanical equipment as per codes mentioned in the following sections. It shall be designed, assembled and tested to the satisfaction of the Executive Engineer and shall conform to the relevant standards published by the Indian Standards Institution, wherever available, in order that specific aspects under the Indian Conditions are taken care of.

**Reference to specifications/ code of practice**

<b>BIS No</b>	<b>Description</b>
1536	Centrifugally Cast (Spun) Iron pressure pipes for Water, gas and sewage including fittings.
8329	Specifications for Centrifugally Cast (Spun) D.I. Pipes for Water, Gas and Sewage.
9523	D.I. Fittings for pipes for water, gas & sewage
12820	Dimensional requirements of rubber gaskets for Mechanical joints and push on joints for the use With C.I. D.I. Pipes
13382	C.I. Specials for Mechanical and push on flexible joints for pressure pipe lines for water, gas & sewage
7181	Horizontally cast iron double flanged pipes for water, Gas and sewage
1538 (Part 1 to 24)	Cast iron fittings for pressure pipes for water, gas And sewage
5382	Rubber rings for jointing C.I.Pipes, R.C.C. Pipes & AC. Pipes
5382	Rubber rings for jointing P.S.C. pipes
6587	Hemp yarn
638	Rubber Insertion to be used in jointing CIDF pipes
1363	Bolts & Nuts to be used in jointing CIDF Pipes
1363	Unplasticized PVC Pipes for potable water supplies
7834 (Part 1 to 8)	Injection moulded PVC socket fittings with Solvent cement joints for water supplies.
10124 (Part 1 to 13)	Fabricated PVC fittings for potable water supplies
12235 (Part 1 to 11)	Methods of test for unplasticized PVC pipes for potable water supplies
780	Sluice valves for water works purposes (50 to 300 mm Dia size)
2906	Sluice valves for water works purposes (300 to 1200 mm Dia size)



<b>BIS No</b>	<b>Description</b>
3950	Surface boxes for sluice valves
1726	Manhole covers for sluice valves
783	Laying of Concrete pipes
3114	Laying of Cast-Iron Pipes
126 of APSS & 783	Laying of PSC Pipes
12288	Laying of C I Pipes
7634 (Part 3)	Laying and jointing of Unplasticized PVC pipes
IS: 651	Stoneware pipes
IS: 4111 Part I & II	Code of Practice for Ancillary Stonewares in sewerage system
IS: 12592 Part I & II	Precast Manhole covers and frames
IS: 456	Code of Practice for plain and reinforcement concrete
1791	Batch type concrete mixer
4616	Sheep foot roller
3764	Safety code for excavation works
3696 (Part I) 3696 (Part-II)	Safety code for scaffolds and ladders Part-I Scaffolds  Part II- Ladders
5121	Safety code for piling and other deep foundations
7293	Safety code for working with construction machinery
CPHEEO Manual	Government of India Manual on Water Supply and Treatment Government of India Manual on Sewerage and Sewage treatment
4091	Gravel for packing
1785 ( Part I and II)	Hard drawn Steel Wire
226	Structural Steel
1139	Hard rolled mills steel for concrete
1566	Hard drawn Steel Wire
American Society for Testing of Materials	
2494 Part I	British Standard
814	Welding Electrodes
225	Steel Sheets
7322	Guniting

<b>BIS No</b>	<b>Description</b>
3589 and 2041	Welded Joints
223	Tensile Test
Mechanical and Electrical Works	
3043	Earthing
1180	Transformer

## C: ELECTRICAL SPECIFICATIONS

### Introduction:

This section of the specification sets out the standard for items of electrical system to be executed by the Bidder. This section describes the basic system that has to be adopted for the electrical power distribution of Fecal Sludge & Septage treatment plant. The selection of power distribution system equipment ratings and layout of the electrical equipment shall consider ease of installation, maintenance and modular addition of equipment for future expansion. All the components of the electrical system shall withstand the environmental conditions of the local region as described hereafter.

The equipment shall be complete in all respects and device not included in the specifications but essential from code, regulation, statutory requirement, standard practice or operational flexibility point of view shall be included by the Bidder.

### Standards

The equipment standards applicable for the design and installation of the electrical, control, monitoring systems are the relevant Indian standards. Cognizance shall also be taken of International standards i.e. International Electro Technical Commission (IEC) where Indian standard is not available or not clear about the subject.

It shall be designed, assembled and tested to the satisfaction of the Executive Engineer and shall conform to the relevant standards published by the Indian Standards Institution, wherever available, in order that specific aspects under the Indian Conditions are taken care of. Use the latest issue of Standards. Make available at least one copy of Standards for reference during construction.

The applicable standards established by the Bureau of Indian Standards govern the materials and workmanship employed in the manufacture of all equipment/items are:

IS191	Copper –Specification
IS319	Free Cutting Leaded Brass Bars, Rods and Section Specification
IS325	Three phase inductionmotors
IS 335	New insulatingoils
IS374	Electric ceiling type fans and regulators
IS 379	Anhydrous sodium sulphate, pharmaceutical
IS 513	Cold reduced low carbon steel sheets and strips.
IS 694	PVC Insulated cables for working voltage up to and including 1100 V
IS 722	Specification for AC Electricity Meters
IS 732	Code of practice for electrical wiring installations
IS 1079	Hot Rolled Carbon Steel Sheet and Strip Specification
IS1169	Electric pedestal type fans and regulators
IS1248	Direct acting indicating analogue electrical measuring instruments and their accessories

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IS 1255	Code of practice for installation and maintenance of power cables up to and including 33kV rating.
IS 1271	Thermal evaluation and classification of electrical insulation.
IS 1293	Plugs and socket-outlets of rated voltage up to and including 250 volts and rated current up to 16 amperes – Specification.
IS 1544	Cotton calico
IS 1554	PVC insulated (heavy duty) electric cables
IS 1868	Anodic Coatings on Aluminium and its Alloys–Specification.
IS 1897	Copper strip for electrical purposes – Specification.
IS 1944	Code of practice for lighting of public thoroughfare: Part 5 Lighting for grade separated junctions, bridges and elevated roads.
IS 2026	Power transformers
IS 2062	Hot Rolled low, medium and high tensile structural steel IS 2099 Bushings for alternating voltages above 1 000 Volts
IS 2148	Electrical apparatus for explosive gas atmospheres –Flameproof enclosures ‘d’.
IS 2190	Selection, Installation and Maintenance of First-aid Fire Extinguishers –code of practice.
IS 2206	Flameproof electric lighting fittings
IS 2253	Designation for types of construction and mounting arrangement of rotating electrical machines
IS 2309	Code of practice for protection of buildings and allied structures against lightning.
IS 2419	Dimensions for panel mounted indicating and recording electrical instruments
IS 2544	Porcelain post insulators for systems with nominal voltage greater than 1000 V.
IS 2546	Specification for galvanized mild steel fire bucket.
IS 2551	Danger notice plates
IS 2629	Recommended Practice for Hot-Dip Galvanizing of Iron and Steel
IS 2633	Methods for testing uniformity of coating of zinc coated articles
IS 2667	Fittings for rigid steel conduits for electrical wiring
IS 2705	Current transformers
IS 2925	Specification for Industrial Safety Helmets
IS 2993	A.C. motor capacitors
IS 3043	Code of practice for earthing
IS 3070	Lighting arresters for alternating current systems
IS 3156	Voltage transformers
IS 3231	Electrical relays for power system protection
IS 3347	Dimensions for porcelain transformer bushings for use in lightly polluted atmospheres.
IS 3400	Methods of test for vulcanized rubbers IS 3419-Fittings for rigid non-metallic conduits
IS 3427	A.C. Metal Enclosed Switchgear and Control gear for Rated Voltages Above 1 kV and Up to and Including 52 kV.
IS 3480	Flexible steel conduits for electrical wiring
IS 3646	Code of practice for interior illumination
IS 3837	Accessories for rigid steel conduits for electrical wiring
IS 3842	Application guide for electrical relays for ac systems
IS 3854	Switches for domestic and similar purposes.
IS 3975	Mild steel wires, formed wires and tapes for armoring of cables
IS 4759	Hot-dip zinc coatings on structural steel and other allied products
IS 4770	Rubber Gloves – Electrical Purposes –Specification.
IS 4795	Holders for Indicator Lamps for Electronic and Telecommunication Equipment.
IS 5571	Guide for selection of electrical equipment for hazardous areas
IS 5572	Classification of hazardous areas (other than mines)having flammable gases and vapours for electrical installation

IS 5578	Guide for marking of insulated conductors
IS 5621	Hollow insulators for use in electrical equipment
IS 5819	Recommended short-circuit ratings of high voltage PVC cables.
IS 5831	PVC insulation and sheath of electric cables
IS 6229	Method for Measurement of Real-ear Protection of Hearing Protectors and Physical Attenuation of Earmuffs
IS 6600	Guide for loading of oil immersed transformers
IS 6665	Code of practice for industrial lighting
IS 7098	Crosslinked polyethylene insulated PVC sheathed cables
IS 7752	Guide for improvement of power factor in consumer installation
IS 8130	Conductors for insulated electric cables and flexible cords
IS 8224	Electric lighting fittings for division 2 areas
IS 8468	On-load tap changers
IS 8478	Application guide for on-load tap changers
IS 8752	Towing hook for use between trailers of up to 5 tonnes gross mass and transport tractor
IS 8789	Values of performance characteristics for three phase induction motors
IS 8828	Electrical Accessories - Circuit Breakers for Over Current Protection for Household and Similar Installations
IS 9283	Motors for submersible pump sets
IS 9334	Electric motor operated actuators
IS 9537	Conduits for electrical installations
IS 9583	Emergency lighting units
IS 9677	Guide for limits of temperature-rise of the windings of electrical equipment when tested by different methods
IS 9678	Methods of measuring temperature rise of electrical equipment.
IS 9921	Alternating current dis connectors (isolators) and earthing switches for voltages above 1000 V
IS 9974	High pressure sodium vapour lamps
IS 10118	Code of practice for selection, installation and maintenance of switchgear and control gear
IS 10322	Luminaires
IS 10418	Drums for electric cables
IS 10601	Dimensions of terminals of high voltage switchgear and control gear
IS 10810	Methods of test for cables
IS 11037	Electronic type fan regulators
IS 11171	Specification for Dry-Type Power Transformers
IS 11353	Guide for uniform system of marking and identification of conductors and apparatus
IS 12065	Permissible limits of noise level for rotating electrical machines
IS 12615	Energy efficient induction motors- three phase squirrel cage
IS 13340	Power Capacitors of Self-healing Type for AC Power Systems having Rated Voltage up to 650 V – Specification
IS 13341	Requirements for ageing test, self-healing test and destruction test on shunt capacitors of the self-healing type for ac power systems having a rated voltage up to and including 650 V
IS 13346	Electrical apparatus for explosive gas atmospheres-General requirements
IS 13369	Stationary lead acid batteries (with tubular positive plates)in monobloc containers
IS 13383	Methods of Photometry of Luminaires.
IS 13440	Code of safety for methylchloride
IS 13703	Low Voltage Fuses for voltages not exceeding 1000V AC or 1500 V DC.
IS 13779	AC Static Watt-hour Meters, Class1 &2
IS 13849	Specification for portable fire extinguisher dry powder type (constant pressure).
IS 13875	Digital measuring instruments for measuring and control.

IS 13925	Shunt capacitors for ac power systems having a rated voltage above 1000 V.
IS 13947	Low-voltage switchgear and control gear
IS 14697	AC Static transformer operated Watt hour and VAR Hour Meters
IS 14981	Live working-Earthing or earthing and short-circuiting equipment using lances as a short-circuiting device-lance working
IS 14927	Cable trunking and ducting systems for electrical installations
IS 14993	Saddles, pole clamps (stick clamps) and accessories for live working
IS 15086	Surge arresters
IS 15652	Insulating mats for electrical purposes – Specification.

Other applicable standards established by the International Electro technical commission (IEC), NFC etc. govern the materials and workmanship employed in the manufacture of all equipment/items are:

IEC 60076	Power transformers – Part 11: Dry-type transformers.
IEC60335	Household and similar electrical appliances - Safety - Part1: General requirements
IEC60669	Switches for household and similar fixed-electrical installations -Part 1: General requirements
IEC 60751	Industrial platinum resistance thermometers and platinum temperature sensors
IEC 60789	Medical electrical equipment – Characteristics and test conditions of radionuclide imaging devices – Anger type gamma cameras
IEC 60896	Stationary lead-acid batteries – Part 22: Valve regulated types –Requirements.
IEC 60947	Low-voltage switchgear and control gear – Part 1: General rules.
IEC 61537	Cable management - Cable tray systems and cable ladder systems.
IEC61643	Low-voltage surge protective devices – Part 12: Surge protective devices connected to low-voltage power distribution systems – Selection and application principles.
IEC61921	Power capacitors – Low-voltage power factor correction banks.
IEC62305	Protection against lightning - Part 4: Electrical and electronic systems within structures.
IEC 62271	High-voltage switchgear and control gear - Part 101: Synthetic testing.

The Diesel Generating Set with all its components shall comply with latest applicable standards, regulations and safety codes in the locality where this equipment will be installed. The equipment shall conform to the following standards with latest amendments.

Standard No.	Title
IS: I460	Automotive diesel fuel Specification
IS: 2253	Designation for types of construction and mounting arrangement of Rotating Electrical Machines
IS: 4889	Methods of determination of efficiency of rotating electrical machines
IS: 6362	Designation of methods of cooling of rotating electrical machines
IS 8223	Dimensions and output series for rotating electrical machines
IS 12065	Permissible limits of noise level for rotating electrical machines
IS 12075	Mechanical Vibration of Rotating Electrical Machines for rotating electrical machines
IS 14568	Dimensions and output series for rotating electrical machines Part-2
IS/IEC 60034	rotating electrical machines
BS 5000	Specifications for Rotating Electrical Machines of particular types or for

	particular applications
BS 5514	Reciprocating Internal combustion engines- performance Specification for over speeding protection
BS ISO 3046	Reciprocating Internal combustion engines- performance speed governing
BS ISO 8528	Reciprocating Internal combustion engine driven alternating current generating sets

#### D. INSTRUMENTATION & AUTOMATION SPECIFICATION

This part covers the general requirements for the Design, Delivery, Installation, Inspection and Testing and Commissioning of the Instrumentation, Control, Automation / Supervisory Control and Data Acquisition (SCADA) /HMI system.

##### Reference Standards

Unless otherwise approved, instrumentation and Automation shall comply with relevant quality standards test procedures and codes of practice collectively referred to as Reference Standards including those listed below in accordance with the requirements detailed elsewhere in this specification.

BS 89-2:1990, EN 60051-2:1989, IEC 60051-2:1984	Direct acting indicating analogue electrical measuring instruments and their accessories.
BS 1042 (Various)	Measurement of fluid flow in closed conduits
BS 1646-1:1979, ISO 3511/I-1977	Symbolic representation for process measurement control functions and instrumentation. Basic requirements
BS EN 837-1:1998	Pressure gauges. Bourdon tube pressure gauges. Dimensions, metrology, requirements and testing
BS EN 60751:1996, IEC 60751:1983	Industrial platinum resistance thermometer sensors
BS 3680 (Various)	Measurement of liquid flow in open channels.
BS 3693:1992	Recommendations for design of scales and indexes on analogue indicating instruments
BS EN 60770-1:2011, IEC 60770-1:1999	Transmitters for use in industrial-process control systems. Methods for performance evaluation
BS 4675-2:1978, ISO 2954-1975	Mechanical vibration in rotating machinery. Requirements for instruments for measuring vibration severity
BS EN 60584-1:1996, IEC 60584-1:1995	Thermocouples. Reference tables
BS 5308 (Various)	Instrumentation cables
BS EN 60529:1992	Specification for degrees of protection provided by enclosures (IP code)
BS ISO 11631:1998	Measurement of fluid flow. Methods of specifying flowmeter performance
BS 5863-1:1984, IEC 60381 1:1982	Analogue signals for process control systems. Specification for direct current signals
BS 5863-2:1980, IEC 60381- 2:1978	Analogue signals for process control systems. Specification for direct voltage signals



BS EN 60654-1:1993, IEC 60654-1:1993	Industrial-process measurement and control equipment. Operating conditions. Climatic conditions
BS 6739:1986	Code of practice for instrumentation in process control systems: installation design and practice
BS EN 60073:2002	Basic and safety principles for man-machine interface, marking and identification. Coding principles for indicators and actuators
BS 1553 (Various)	Specification for graphical symbols for general Engineering
ISA-5.1-1984 – (R1992)	Instrumentation Symbols and Identification
ISA-5.4-1991	Instrument Loop Diagrams
ANSI/ISA-7.0.01-1996	Quality Standard for Instrument Air
ANSI/ISA-18.1-1979 -(R1992)	Annunciator Sequences and Specifications
ISA-26-1968	Dynamic Response Testing of Process Control Instrumentation
ISA-37.1-1975 – (R1982)	Electrical Transducer Nomenclature and Terminology
ISA-37.3-1982 – (R1995)	Specifications and Tests for Strain Gage Pressure Transducers
ANSI/ISA-50.00.01-1975 (R2002)	Compatibility of Analog Signals for Electronic Industrial Process Instruments
ANSI/ISA-51.1-1979 (R1993)	- Process Instrumentation Terminology
ISO 9000 and ISO 9004	Quality Management Systems
IEEE 60587	Power Supply Surge Protection
IEC 61131-3	Programmable Controllers–Programming Languages
IEC 61158-2	Industrial Communication Network-Communication Protocols
BS /ISO 9075	Information technology –Structured Query Language (SQL)
BS 5515	Code of practice for Documentation of Computer Based Systems
BS 7165	Recommendation for Achievement of Quality in Software
BS EN 50081	Electromagnetic Compatibility
ISO 3511	Symbolic representation for process measurement control functions - instrumentation
ISO-OSI	Information technology – 7 Layer Communication Model
IEEE 472-1974	Surge protection.
IEC-8705101	Modbus Protocol Conversion

## Annexures

### Annexure 1: Quality Control tests

Sr. No.	Items	Material test
1	Stone	i) Compressive test ii) Water absorption
2	Trap Metal	i) Crushing value ii) Impact value iii) Abrasion value iv) Water absorption v) Flakiness Index and Elongation index vi) Gradation
3	Bricks	i) Crushing strength ii) Water absorption
4	Flooring tiles	i) Flexural strength ii) Water absorption
5	Glazing tiles	i) Water absorption
6	Cement	i) Compressive strength ii) Initial setting time iii) Final setting time iv) Specific gravity v) Soundness vi) Fitness vii) Standard consistency
7	Steel	i) Weight per meter. ii) Ultimate Tensile stress. iii) Yield stress iv) Elongation v) Bend Test
8	Wood work (Shutters)	i) End immersion tests ii) Knife test iii) Glue adhesion test
9	Cement concrete	i) Mix design ii) Compressive strength
10	Structural steel	i) Weight/Running meter
11	Sand	i) Water absorption and specific Gravity ii) Fineness Modulus iii) Slit Content iv) Bulk age
12	Water	i) P.H. Value for water ii) Chloride and Sulphate content

## Annexure 2: Defect liability for various works

The defect liability for various works included in this tender shall be as below with effect from the date of certificate of completion.

<b>1) Overall Defect liability for any component not listed</b>	<b>Three year</b>
<b>2) Civil Works</b>	<b>Seven Years</b>
<b>3) Pump house ,</b>	<b>Five years.</b>
<b>4) Pumping Machinery.....</b>	<b>Two years</b>
a) Pumping Machinery and other allied mechanical, electrical installations(excluding those provided in the treatment plant Contract), chlorinators.	
<b>5) ESR/MBR</b>	<b>Five years</b>
a) Based on Bidders own design .....	
<b>6) Pipe lines</b>	
a) Pumping mains, gravity mains, leading mains, of pure water	<b>Two Years</b>
b) Distribution System	
The instructions contained in the State Govt. (Public Works Department) resolution dated 14 <sup>th</sup> June 1989 shall hence forth be applicable to all the works for which defect liability periods have been specified as above.	<b>Two Years</b>

## **Annexure 3: Details of availability of land for Fecal Sludge & Septage treatment plant**

## Annexure 4: Self reporting by Fecal Sludge & Septage treatment plant operator

- The contractor has to get forms filled on a daily/monthly basis
- The cost of printing these forms is to be borne by the contractor.
- Three copies of this form would be created:
  - **1<sup>st</sup> copy** would be submitted to **ABC** along with bills.
  - **2<sup>nd</sup> copy** would remain with **contractor**.
  - **3<sup>rd</sup> copy** has to be kept on **site for records**.

**Daily format**  
**Septage quantity received at treatment plant**

*About: This format calculates the quantity of septage received at treatment plant*

Name of Urban Local Body: ABC Municipal Council

Date: \_\_\_\_\_

Sr. No.	Truck number plate details	Capacity of septage sucking machine (Cum)	Volume of septage collected at treatment plant (Cum)
<b>Total daily septage received at treatment plant (Cum)</b>			

**Monthly format  
Septage quantity received at treatment plant**

*About: This format aggregates the daily information of septage received at treatment plant*

Name of Urban Local Body: ABC Municipal Council

Submission date: \_\_\_\_\_

<b>Date</b>	<b>Total number of trips</b>	<b>Volume of septage collected at treatment plant (Cum)</b>
<b>Monthly Average</b>		

**Monthly format**  
**Wastewater Quality: Mandatory tests**

*About: The parameters given below are to be tested mandatory as per frequency mentioned in tender document.*

Name of Urban Local Body: ABC Municipal Council Submission date: \_\_\_\_\_

Name of Laboratory: \_\_\_\_\_

- Parameters to be tested:
- 1)Temp    2) pH    3) BOD    4) COD    5) TSS    6) VSS
  - 7) Alkalinity    8) Sulphate    9) Fecal Coliform    10) Total Coliform
  - 11) Moisture content    12) NPK Value    13) Helminth Eggs

Sr. No.	Sample date	Location of sample	Type of sampling (grab / composite)	Tested parameters (from 1 to 13)	Passed Parameters as per standards (from 1 to 13)

## Annexure 5: Schedule of percentage cost breakup

**Schedule A:** Design, drawings and all necessary approvals from various government departments etc. before start of execution of the project etc complete; and construction and Commissioning Fecal Sludge & Septage treatment plant with all appurtenant structures and allied works complete including testing, trial run for 1 (one) month and commissioning of the plant to the satisfaction of the Engineer-In-Charge)

Sr No	Description of Components	Percentage cost break up (%)
1	Percentage cost for preparation of design, detailed engineering drawings etc for FSSTP to total price bid quoted for Schedule A	
2	Percentage cost for obtaining necessary approval etc. for FSSTP to total price bid quoted for Schedule A	
3	Percentage cost for Construction/ erection/ installation and commissioning of FSSTP and trial run for 1 month to total price bid quoted for Schedule A	

**Schedule B:** Operation & Maintenance of Fecal Sludge & Septage treatment plant and allied works etc. complete for a period of 3 (three) years

Sr No	Description of Components	Percentage cost break up (%)
1	Percentage cost for salary for O&M of FSSTP to total price bid quoted for Schedule B	
2	Percentage cost for electricity charges for O&M of FSSTP to total price bid quoted for Schedule B	
3	Percentage cost for repair and maintenance charges for O&M of FSSTP to total price bid quoted for Schedule B	
4	Percentage cost for Miscellaneous/ others charges for O&M of FSSTP to total price bid quoted for Schedule B	

Note: In this tables , Bidder shall only mention indicative percentage cost break up and not actual bid value in this schedule.



## Annexure 6: Schedule of replacement of key component

Sr No	Name of equipment/ component/ parts/ tool	Unit	Estimated cost	Replacement year/ Duration	Patented component (Yes/ No)  If Yes, remark