Name of work

Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.

BID DOCUMENT

Office of the Superintending Engineer IWD,
Indian Institute of Technology, Kanpur

Indian Institute of Technology Kanpur

Contents

It is certified that this document contains page 99 pages starting with page no 1

Superintending Engineer
Institute Works Department
IIT, Kanpur-208016 (U.P.)

Name of work: - **Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.**

The bidder Shall upload the following documents and submit the soft copy of the same mentioning the page no against each document as required in the NIT at CPP portal (Providing tick on specified document)**.**

Sl. No	Particular	Document required as per NIT	Attached as page No(s).
1.	EMD scan copy		
2.	GST Registration Certificate or GST Undertaking		
3.	EPF Registration		
4.	ESIC Registration		
5.	PAN card		
6.	Affidavit for not being blacklisted/debarred/restrained		
7.	Performance report of works executed		
8.	Structure and Organization of the Agency		
9.	Declaration on Details of the Bidder(s)		
10.	Details of Similar Nature of Works Completed, project under execution and Bidding capacity		
11.	Declaration about Site Inspection		
12.	Letter of Transmittal		
13.	CPWD-8		
14.	Tender Certificate		
15.	Tender Acceptance Letter		
16.	Copy of Financial turnover from CA along with audited balance sheets certified from CA/bank UDIN No for current 3years.		
17.	Solvency certificate CA/Bank **		
18.	Net Worth certificate from certified chartered accountant		
19.	Integrity pact duly signed with seal bearing the NIT No. The copy of same is to be uploaded		
20.	Any other documents		

** Bank Solvency: Preferably of the Current Financial Year, but not older than one year.

1. Notice Inviting e-Tenders

The Superintending Engineer, IWD, IIT Kanpur invites on behalf of Board of Governors of IIT Kanpur online item rates tender from eligible specialized agencies satisfying the eligibility criteria mentioned in the document.

NIT No: 41/Civil/D3/2025-26

1	Name of work	:	Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.
2	Estimated cost (inclusive of GST)	:	Rs 1,57,81,949/-
3	Earnest Money Deposit (Rs.)	:	Rs. 3,15,639/-
4	Duration of contract	:	Part A- Six (06) Months Part B – Five (05) Years
5	Last Time & date of submission of bids (Up to)	:	As per CPP portal data (https://eprocure.gov.in/eprocure/app)
6	Opening of bids	:	As per CPP portal data (https://eprocure.gov.in/eprocure/app)
7	Time allowed for sub- mission of requisite documents by lowest bidder	:	Within One week of opening of financial bids

The bid forms and other details may be downloaded from Central Public Procurement Portal (http://eprocure.gov.in/eprocure/app). Aspiring bidders who have not enrolled / registeredin e- procurement should enroll / register themselves before participating through web site http://eprocure.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at "Instructions for online bid submission."

Bidders can access quotation / tender documents on the website (for searching in the NIC site), kindly go to quotation search option and type 'IIT'. Thereafter, click on "GO" button to viewall IIT quotations. Select the appropriate quotation / tender and fill them with all relevant information and submit the completed Quotation / Tender document online on the websitehttp://eprocure.gov.in/eprocure/app. as per the schedule given in the next page.

Note: No manual bids will be accepted. All bids (both Technical & Financial) should be submitted in the e-procurement portal.

Applicants are advised to keep visiting the above-mentioned websites from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications completein all respect including updates thereof, if any. An incomplete application may be liable for rejection.

Superintending Engineer
Institute Works Department
IIT, Kanpur-208016 (U.P.)

1. Information and Instructions for Bidders for E-Tendering

The Superintending Engineer, IWD on behalf of Board of Governors of Indian Institute ofTechnology Kanpur invites online item rate tenders from eligible specialized agencies satisfying the eligibility criteria mentioned in the document.

2.1 Schedule

1	Name of organization	:	Indian Institute of Technology, Kanpur
2	NIT No.	:	41/Civil/D3/2025-26
3	Location	:	Indian Institute of Technology, Kanpur
4	Tender / Quotation type (open / limited /EOI / Auction / Single	:	Open
5	Tender / Quotation category (services / works	:	Works
6	Type of Contract (work / supply / auction/ service / buy / empanelment / sell	:	Works
7	Form of contract (CPWD-7/8)	:	CPWD-8
8	Work Category (civil / electrical / fleet / management / computer system	:	Civil
9	Is multi-currency allowed?	:	No
10	Date of publishing / issue / start	:	As per CPP portal
11	Document download start date	:	As per CPP portal
12	Document download end date	:	As per CPP portal
13	Date & time of pre-bid meeting	:	As per CPP portal
14	Venue of pre-bid meeting	:	As per CPP portal
15	Last date & time of uploading of bids	:	As per CPP portal
16	Date & time of opening of Technical bids	:	As per CPP portal
17	Bid Validity Days	:	90 days after opening of technicalbid
18	Earnest Money Deposit (EMD)	:	Rs. 3,15,639/-
19	No. of Bids / Covers (1 / 2 / 3 / 4)	:	2
20	Address for communication	:	Office of Superintending Engineer, IWD,

			IIT, Kanpur-208016 (U. P.) Contact no. 0512-259-6253, 0512-259-6718
21	Email address	:	seiwd@iitk.ac.in

The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

1. Information and instructions for bidders posted on website shall form part of bid document.
2. The bid document consisting of drawings, specifications, schedule of quantities of items to be executed, schedule of stages for payment as applicable and the set of terms & conditions of the contract to be complied with and other necessary documents can be seen and downloaded free of cost from www.eprocure.gov.in/eprocure/app
3. But the bid can only be submitted after the EMD hard copy submission and Submission of Integrity Pact.
4. Those contractors not registered on the website mentioned above, are required to get registered beforehand. Only e-bids shall be accepted in CPPP portal through e-tendering processes.
5. The intending bidder must have valid Class-III digital signature to submit the bid.
6. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
7. Contractor can upload documents in the form of PDF format.
8. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in pink colour and the moment rate is entered; it turns sky blue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).

   However, if a tenderer quotes nil rates against each item in item rate or does not quote any amount of the tender or any section/ sub head in item rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
9. The "Eligibility/technical Bid" shall be opened first on due date and time as per the evaluation scheme. The "Financial Bid" of bidders qualifying the technical bid shall be opened on a later date as to be announced in CPP portal.
10. The bidders are advised to visit the site before submission of bids to have more clarity about the site conditions and availability of space for execution of the work.
11. All modifications/addendums/corrigendum's issued regarding this bidding process shall

be uploaded on website only.

12. The department reserves the right to reject any or all bids without assigning any reason thereof and may restrict the list of qualified bidders to any number deemed suitable by it, if too many bids are received satisfying the minimum laid down criteria.

13. The rates for all items of work, shall unless clearly specified otherwise, include cost of all operations and all inputs of labour, material, T&P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all other taxes (inclusive of GST), cess, duties, levies etc. required for execution of the work.

14. The specialized works shall be in compliance with 3 star GRIHA rating and as per environmental policies of Institute. Noting extra shall be payable on this account.

15. The enlistment / registration of the contractors, (if applicable) should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

16. The description of the work is as follows: "Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14."

17. The work is estimated to cost Rs. 1,57,81,949/-. However, this estimate given is mere approximation for guide.

18. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD8 which is available as a Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

19. The time allowed for carrying out the entire work will be Part A- Six (06) Months, Part B – Five (05) Years from the date of start as defined in Schedule "F" or from the first date of handing over of the site, whichever is later, in accordance with the phasing as detailed in special conditions of contract in the bid document.

20. The site for the work will be handed over as per the special terms and conditions of the document.

21. An approval programme of completion submitted by the contractor after award of work based on the milestone given in the tender.

22. The bid document consisting of NIT, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website www.eprocure.gov.in/eprocure/app free of cost.

23. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

24. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he/she need not re-enter rate of all the items) but before last time and date of submission of bid as notified.

25. Copy of documents as specified in the bid shall be scanned and uploaded to the e-tendering website within the period of bid submission.

26. The bid submitted shall be opened at as per the details provided in the CPP portal at IWD office. The date of opening of Financial Bid shall be informed through web site after the opening of financial bid

27. The bid submitted shall become invalid if:

    i) The bidder is found ineligible.

    ii) If the bidder does not deposit original EMD to the office of Executive Engineer, Div-III, Central office, IWD, IIT Kanpur

    iii) The tender uploaded without Integrity Pact.

    iv) The bidder does not upload scanned copies of all the documents stipulated in the bid document.

28. However, if a tenderer quotes nil rates against each item in item rate or does not quote any percentage above / below / at par on the total amount of the tender or any section/ sub head in item rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

29. The contractor whose bid is accepted will be required to furnish performance guarantee of 5% of tendered value within the period specified in Schedule F. This guarantee shall be in the form of Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.

30. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the contractor shall be suspended for two years and shall not be eligible to bid for IITK tenders from the date of issue of suspension order.

31. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If applicable and also ensure the compliance of afore said provisions by the sub-contractors, if any engaged by the contractor for the said work and program chart (Time and Progress) within the period specified in Schedule 'F'.

32. Intending Bidders are advised to inspect and examine the sites and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, making proper arrangements to the site for smooth operation, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. Bidder shall be deemed to have full knowledge of the sites whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water,

electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Institute and local conditions and other factors having a bearing on the execution of the work.

33. Intending Bidders are advised to get familiarized with the specifications /rules related (i.e., Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.) to the work as approved by the competent authority and various policies related to C&D waste and other environmental guidelines of the institute pertaining to the. Bidder shall be deemed to have full knowledge of such rules and regulations whether he has read it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. In case of reduction of scope of work or no work is possible to carry out on account of such issues, no cost shall be payable to them. Submission of a bid by the bidder implies that he has read this notice and all other documents and has made himself aware of the Institute Regulations and other factors having a bearing on the execution of the work.

34. The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without assigning any reason. Bids in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

35. Canvassing whether directly or indirectly, in connection with bids is strictly prohibited and the bids submitted by the bidders who resort to canvassing will be liable to rejection.

36. The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

37. The contractor shall not be permitted to bid for works in the Institute Works Department responsible for award and execution of contracts, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive) in IWD. He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Office of IWD/ Institute Works Department. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

38. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is

allowed to work as a contractor for a period of one year after his retirement from Government services without the prior permission of the Government of India in writing. This contract is liable to be canceled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's services.

39. The bids for the work shall remain open for acceptance for a period of Ninety (90) days from the date of opening of bids. If any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Institute shall, without prejudice to any other right or remedy, be at liberty to suspend the bidder for one year

40. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 7 days from the stipulated date of start of the work, will sign the contract.

41. The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto

42. Standard C.P.W.D. Form 8 or other Standard C.P.W.D. Form as applicable.

43. The bid document will include the following components:

    (a) CPWD-8 and CPWD-6 including Schedule A to F for all the components of the work, Standard General Conditions of Contract for CPWD 2023 as amended/modified up to last date of submission of the bid.

    (b) General / specific conditions, specifications applicable to all components of the work.

44. The eligible bidders shall quote item rates after considering all the components of the work.

45. After acceptance of the bid by competent authority, the Executive Engineer, IWD shall issue letter of award on behalf of the Board of Governors to the contractor. After the work is awarded, the contractor will have to enter into one agreement with Executive Engineer, IWD. One such signed set of agreement shall be handed over to Engineer-In-Charge as applicable.

46. Entire work under the scope of bid shall be executed under one agreement.

47. The requirement of technical staff given in various specialized works is as per requirements given in clause 32 of NIT document. The actual deployment of these technical staff will be as per execution of work and direction of the Executive Engineer, IWD, IIT, Kanpur.

48. The bill for work components shall be facilitated by Engineer-in-Charge to the

contractor.

49. The Final bill must be submitted to the Office of IWD, IIT Kanpur and the bills shall be based on milestones.

50. The work shall be treated as complete when all the components of the work are complete.

51. It will be obligatory on the part of bidder to sign the contract document for all components before the first payment is released.

52. In case of reduction in scope of work no claim on account of reduction in value of work, loss of expected profit, consequential overheads etc. shall be entertained.

53. A team of officers from Indian Institute of Technology Kanpur may visit the office/ site of work of bidders for establishing their credibility and verification of submitted documents

54. The mentioned work is urgent as requested by client/Institute and to be completed strictlyin given time schedule as per special terms and conditions. The contractor has to deploy the labour and supervisory staff in shifts to meet the targeted completion date. The workmay be executed in extended shifts or two shifts. The rates quoted by the contractor will be deemed to be inclusive of any extra expenditures on account of this reason. Nothing shall be paid on this account.

55. The competent authority on behalf of the Board of Governors reserves the right to terminate the contract if,

    a) Any violation of labour law has been observed.

    b) Any of the construction workers engaged in the works under this contract is found also engaged in Service Contracts of the Institute at the same time.

56. The competent authority on behalf of the Board of Governors reserves the right to disqualify an agency for

    a) Non-compliance of Institute orders

    b) Violation of Institute policies as established by the Competent Authority in the best interests of the Institute.

2.2 Instructions for Online BID Submission

This tender document has been published on the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app) The bidders are required to submit softcopies of their bids electronically on the CPP portal, using valid Digital Signature Certificates (DSC). The instructions given below are meant to assist the bidders in registering on the CPP portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP portal.

More information useful for submitting online bids on the CPP portal may be obtained at http://eprocure.gov.in/eprocure/app).

2.2.1 Registration

1. Bidders are required to enroll on the e-procurement module of the Central Public Procurement portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link, "click here to enroll". Enrolment on the CPP portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for the accounts.
3. Bidders are advised to register their valid e-mail address and mobile number as part of the registration process. These would be used for any communication from the CPPP portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (class 2 or class 3 certificates with signing key usage) issued by any certifying authority recognized by CCA India (e.g. Sify / TCS / nCode/ eMudhra etc.) with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6. Bidder then logs in to the site through the secured log-in by entering their user ID Password and the password of the DSC / eToken.\

2.2.2 Searching for tender documents

1. There are various search options built in the CPP portal to facilitate bidders to search active tenders by several parameters. These parameters could include tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP portal
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. The tenders can be moved to the respective "My Tenders" folder. This would enable the CPP portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each other; in case they want to obtain any clarification/help from the Helpdesk.

2.2.3 Preparation of bids

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to under-stand the documents required to be submitted as part of the bids. Please note the number of covers in which the bid documents have to be submitted. Any deviations from these may lead to rejection of the bids.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black &white option.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g., PAN card copy, annual reports, auditor's certificates, etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

2.2.4 Submission of bids

1. Bidder should log into the site well in advance for bid submission so that he / she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. A standard BOQ Format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the white colored [unprotected] cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

   OR

   In some cases, financial bids can be submitted in PDF format as well (in lieu of BOQ).
4. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

5. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done.
6. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
7. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date &time of submission of the bid with all other relevant details.
8. Add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

2.2.5 Assistance to bidders

1. Any queries relating to tender document and the terms and conditions contained therein should be addressed to the tender inviting authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP portal in general may be directed to the 24 x 7 CPP Portal Help Desk.

2.2.6 General instruction to bidders

1. The tenders will be received online through portal https://eprocure.gov.in/eprocure/app. In the technical bids, the bidders are required to upload all the documents in PDF format.
2. Possession of a valid class II / III Digital Signature Certificate (DSC) in the form of smart card / e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the website https://eprocure.gov.in/eprocure/app under the link "Information about DSC".

   Tenderers are advised to follow the instructions provided in the "Instructions to the tenderer" for the e-submission of the bids online through the Central Public Procurement Portal for e-procurement at https://eprocure.gov.in/eprocure/app.

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2.3 List of documents to be scanned and uploaded within the period of bid submission

The following mandatory documents to be submitted with online bid submission:
The Online bids (complete in all respect) must be uploaded online in two Envelops as explainedhere: -

2.3.1 Envelope - 1: Technical Bid

The following mandatory documents to be provided as a single PDF file in the same sequenceas listed for an eligible bid:

1. EMD scanned copy shall be submitted along with the technical bid and original have to be submitted in the office of the tender inviting authority **
2. GST Registration Certificate
3. EPF & ESIC Registration
4. Copy of PAN card
5. Affidavit for not being blacklisted/debarred/restrained as per 5.1
6. Performance report of works executed as per 5.2
7. Structure and Organization of the Agency as per 5.3
8. Declaration on Details of the Bidder(s) as per 5.4
9. Details of Similar Nature of Works Completed, project under execution and Bidding capacity as per 5.5
10. Declaration about Site Inspection as per 5.6
11. Letter of Transmittal as per 5.7
12. CPWD-8 as per 5.8
13. Tender Certificate as per 5.9
14. Tender Acceptance Letter as per 5.10
15. Financial Information as per 5.11
16. Solvency certificate as per 5.12 (minimum 40% of estimated cost put to tender) Or Net Worth Certificate from certified Chartered Accountant with UDIN No. as per 5.13(minimum 10% of estimated cost put to tender)

17. Integrity Pact should be signed and scanned copy of the same shall be uploaded along with technical bid.

** Earnest **money in the form of Demand Draft of pay order or Banker's** Cheque or Deposit at Call Receipt or Fix Deposit Receipt drawn in favor of **"The Director, IIT Kanpur" shall be scanned and uploaded to the e**-Tendering website by the bidder within the period of bid submission. The hardcopy of earnest deposit receipt (EMD) shall be submitted in the office of Executive Engineer Div-III, central Office IWD, IIT Kanpur before the Date & time of opening of technical bids as specified in the bid document. In absence of EMD in hard copy the bid shall be rejected.

2.3.2 Envelope - 2: Financial Bid

Price bid should be submitted in BOQ format

3. Eligibility Criteria

3.1 Eligibility criteria for contractors

Eligible contractors means eligible specialized agency.

Eligible Bidders

Eligible bidders should also satisfy the following criteria for an eligible bid:

1. Average annual financial turn over:

Average annual financial turnover should be at least 30% of the estimated cost of work put to tender during the last 3 consecutive financial years by the certified Chartered Accountant. Audited turnover statements to be furnished as proof of the same duly certified by chartered accountant along with Profit & Loss Statements.

2. Experience

(Firms/Contractors must have completed satisfactorily)

i) One similar work of 80% value of the estimated cost put to tender Or

ii) Two similar work of 60% value of the estimated cost put to tender Or

iii) Three similar work of 40% value of the estimated cost put to tender

Works completed during last 7 years ending last day of the month previous to the one in which applications are invited.

And

One completed work of similar nature costing not less than the amount equal to 40% of the estimated cost put to tender with Central Government Department / Central Autonomous Body / Central Public Sector Undertakings.

3. Definition of similar work: Similar type of work means "Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) based on MBBR Technology i/c all civil, E&M works complete and comprehensive annual operation and maintenance of STPs based on MBBR technology" (The O&M work shall be deemed eligible if the firm has completed minimum two years of comprehensive annual O&M successfully after commissioning of the STP.) done with any Central Government Department / Central Autonomous Body / Central Public Sector Undertakings /State Government / Establishment of repute in last 7 Year.

4. Bidding Capacity: -Proforma for submission of Details of Eligible Similar Nature of Works Completed* during the Last Seven Years ending previous day of the last date of submission of tenders (Scanned copy of the Performance Reports to be uploaded) The

bidding capacity of the contractor should be equal to, or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula: Bidding Capacity = [A × N × 1.5] − B, where A = Maximum turnover in construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7%, N = Number of years prescribed for completion of work for which bids has been invited. B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited.

Eligible bidders must also satisfy the following conditions and ensure submission of all documents mentioned in 2.3

1. INTEGRITY PACT (Annexure-B): The contractor shall download the Integrity Pact, which is a part of tender document, affix his signature & seal in the presence of a witness and upload the same while submitting the online bids. In absence of duly signed integrity pact the bids shall not be considered for technical evaluation.
2. Legal: Unregistered Partnership Firm and Joint Venture or Consortium are not eligible.
3. Registration: Bidder should be registered with the Income Tax Department (PAN), EmployeesProvident Fund (EPF) Organization, Employees State Insurance (ESI) Corporation & GST. Bidders are not eligible in absence of these documents.
4. Office: Bidders have to establish its local accessible office registered with local GSTIN at IIT Kanpur to run the awarded work.

4. Bid Evaluation and Award

The following process will be followed for the Technical and Financial Bids Evaluation:

4.1 Technical Bid Evaluation

- Technical bids received complete in all respects covering the entire scope of work, will onlybe opened
- The online bids submitted without EMD & integrity pact, if applicable shall be rejected.
- Bidding Capacity
- The technical bid evaluation is done only for bidders who satisfy the minimum criteria by submitting documentary proof supporting eligibility criteria and the bids of agencies who have not submitted these documents are liable to be rejected without notice.
- After evaluation of Pre-Qualification Documents, a list of short-listed agencies will be prepared.

4.2 Financial Bid Evaluation

For financial bids, the following points shall be followed:

- The financial bids of only the qualified and technically acceptable bidders shall be opened at the notified time, date and place in the presence of the qualified bidders or their representatives, if present.
- The bid shall remain valid for Ninety (90) days from date of opening of eligibility bids/Technical bid.

NOTE- The employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:

- Amend the scope and value of contract to the bidder.
- Reject any or all the applications without assigning any reason.

Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

5. Various Forms and Formats

5.1 Affidavit for not being blacklisted/debarred/restrained

Proforma for AFFIDAVIT for not being blacklisted /debarred /restrained (AFFIDAVIT to be submitted on a 'Non-Judicial' stamp paper worth Rs.100/) (Scanned copy of this notarized affidavit to be uploaded at the time of submission of bid)

I/we undertake and confirm that our firm/partnership firm has not been blacklisted and /or debarred /restrained by any Central Govt./ State Govt. Agency/ Autonomous body of the Central or State govt./ PSU etc. Further that, if such information comes to the notice of the Institute, then I/we shall be debarred for bidding in the Institute in future forever. Also, if such information comes to the notice of the Institute on any day before date of start of work, the competent authority shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit / Performance Guarantee.

Signature of bidder(s)

OR

(An authorized Officer of the firm with stamp)

Signature of Notary with Seal

5.2 Performance report on work executed

Proforma of Performance report issued by the concerned department letter head)

(Scanned copy of the Performance Reports to be uploaded at the time of submission of bid)

1. Name of work/project & location:
2. Agreement no.:
3. Estimated cost:
4. Tendered cost:
5. Date of start:
6. Date of completion:
7. Stipulated date of completion:
8. Actual date of completion:
9. Amount of compensation levied for delayed completion, if any:
10. Amount of reduced rate items, if any:
11. Performance Report:
    (a) Quality of work: Outstanding / Very Good / Good /Poor
    (b) Technical Proficiency: Outstanding / Very Good / Good /Poor
    (c) Resourcefulness: Outstanding / Very Good / Good /Poor
    (d) General Behavior: Outstanding / Very Good / Good /Poor

Signature of Executive Engineer or Equivalent

Dated:

5.3 Structure and Organization of the Agency

Proforma of providing Structure and Organization of the Bidding Agency

(To be printed in Company's Letterhead)

(Scanned copy of the Structure and Organization Document to be uploaded at the time of submission of bid)

1. Name & address of the bidder:
2. Telephone no./Telex no./Fax no.:
3. Email address for Communication:
4. Legal status of the bidder (attach copies of original document defining the legal status):
   (a) An Individual:
   (b) A proprietary firm:
   (c) A firm in partnership:
   (d) A limited company or Corporation:
5. Particulars of registration with various Government Bodies (attach attested photocopy)

   Organization / Place of registration Registration No.

   1.
   2.
   3.
6. Names and titles of Directors & Officers with designation to be concerned with this work.
7. Designation of individuals authorized to act for the organization
8. Has the bidder, or any constituent partner in case of partnership firm, ever been convicted by the court of law? If so, give details.
9. Any other information considered necessary but not included above.

Signature of bidder(s)

5.4 Declaration on Details of the Bidders

Proforma of Declaration on Details of the Bidders
(To be printed in Company's Letterhead)

(Scanned copy of the Performance Reports to be uploaded at the time of submission of bid)

DECLARATION

I/We,..... hereby declare that all the information and data furnished by our organization with regard to this tender specification are true and complete tothe best of our knowledge. I/we have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

Particulars of the bidder as per following details:

1.	Name of the firm / organization	:	
2.	Type of the firm / organization: Public Ltd, / Private Ltd./ Registered firm	:	
3	Registered office	:	
4	Address of office	:	
5	Contract people	:	
6	Name & designation	:	
7	Land line & mobile no.	:	
8	Email	:	
9	PAN No.	:	
10	GST No.	:	
11	EPF Registration No.	:	
12	ESI Registration No.	:	
13	EMD/FDR/DD No. & Date	:	
14	Registration details with the Govt. Department (CPWD, BSNL, MES, UPPWD, Central PSUs.)/ Specialized Agency	:	
15	Validity of the registration with the Govt. department	:	
16	Tendering limit as per the registration details	:	
17	Has the applicant ever been required to suspend any project for a period of more than six months continuously after Commencement of work?	:	If so, give the name of the project and reasons of suspension of project
18	Has the applicant ever been convicted by a court of law?	:	YES / NO, If yes give details of the case
19	Details of any litigation in which the	:	

	applicant is / was involved.		
20	All forms submitted as desired in the bid	:	Yes / No
21	Undertaking regarding no subletting of work.	:	

We further declare that our organization has not been blacklisted /delisted or put to any holiday by any Institutional agency **/** Govt. Department **/** Public Sector Undertaking in the last three years.

Signature of Bidder(s) with seal

Dated:

5.5 Details of Similar Nature of Works Completed, project under execution and Bidding capacity

Proforma for submission of Details of Eligible Similar Nature of Works Completed* during the Last Seven Years ending previous day of the last date of submission of tenders (Scanned copy of the Performance Reports to be uploaded)

The bidding capacity of the contractor should be equal to, or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula: Bidding Capacity = $[A \times N \times 1.5] - B$, where

A = Maximum turnover in construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7%. N = Number of years prescribed for completion of work for which bids has been invited. B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited.

The contractor needs to submit the supporting documents for calculation of A & B as above.

For calculation of B, information is to be supplied in the following tabular format:

Table B- Projects under execution or awarded.

Sr. No	Name of work / project and location	Owners or sponsoring organization	Const of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Uptodate percentage progress of work	Slow progress if any, and reasons thereof	Name and address / tele-phone number of officers to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Certified that the above list of work is complete and no work has been left out and that the information given is correct to my knowledge.

Table B1- Similar Nature of work completed

Sr. No	Name of work / project and location	Owners or sponsoring organization	Const of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ arbitration cases pending /in Progress with details*	Name and address / tele-phone number of officers to whom reference may be made	Whether the work was done on back to back basis Yes/No
1	2	3	4	5	6	7	8	9	10

* Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of bidder(s) with seal

Dated:

5.6 Declaration About Site Inspection

Declaration about Site Inspection

(By Bidder)

To
The Superintending Engineer,
Institute Works Department,
IIT, Kanpur-208016 (U.P.)

Subject: Submission of Tender for the work of "Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14."

Dear Sir/Madam,

It is hereby declared that as per terms and conditions of this tender document, **I /** We the bidder inspected and examined the subject site and its surrounding and satisfy myself / ourselves as to the nature of the ground and sub-soil (so far as is practicable), the forms and nature of the site./ ourselves before submitting the bid, the accommodation which may require and all necessary information as to risks, contingencies and other circumstances which may influence or affect our bid have been obtained. I/We the bidder shall have full knowledge of the site and no extra charge consequent upon any misunderstanding or otherwise shall be claimed in later date. I /We bidder shall be responsible for arranging and maintaining at own cost all materials,tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by me/us implies that I **/** We have read this notice and all other contract documents and has made myself /ourselves aware of the scope and specifications of the work to be done and local conditions and other factors having a bearing on the execution of the work.

Sincerely

(Duly authorized signatory of the Bidder)

5.7 Letter of Transmittal

To
The Superintending Engineer,
Institute Works Department
IIT, Kanpur-208016 (U.P.)

Name of Work: Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.

Dear Sir/Madam

Having examined details given in Notice and bid document for the above work, I/we hereby submit the relevant information.

5.7.1 I/We hereby certify that all the statements made and information supplied in the enclosed forms and accompanying statement are true and correct.

5.7.2 I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.

5.7.3 I/We also authorize the Superintending Engineer, IWD, Indian Institute of Technology Kanpur or his representative(s) to approach individuals, employers, firms and corporation to verify our competence, work experience, and general reputation.

5.7.4 I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible completed works:

Sl. No.	Name of work	Amount	Certificate issued by
1			
2			
3			

CERTIFICATE

It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I/We shall be liable to be debarred, disqualified/ cancelation of enlistment in case any information furnished by me/us found to be incorrect.

Signature(s) of Bidder with seal

Enclosures: Date:

5.8 CPWD-8

CPWD-8

ITEM RATE TENDER & CONTRACT FOR WORKS

Tender for the "Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14."

1. To be uploaded as per details uploaded in CPP portal at www.eprocure.gov
2. To be opened in the presence of tenderers who may be present at the time of opening inthe Executive Engineer, IWD, IIT Kanpur.
3. The pre-qualification/Technical bid shall be opened first on due date and time as mentionedabove. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.

TENDER

(To be signed in Company's Letterhead)

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, General Conditions of Contract (For construction works) 2023, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Board of Governors within thetime specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials asare provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for Ninety (90) days from the due date of its opening and not to make any modification in its terms and conditions.

I/We have deposited EMD for the prescribed amount in the office of concerned Executive Engineer as per the bid document

If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said Board of Governors or his successors, in office shall without prejudice to any other right or remedy, be at liberty to take action as per GCC 2023. Further, if I/We fail to commence work as specified, I/We agree that Board of Governors or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and

conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clauses 12.2 and 12.3 of the tender form.

Further, I/We agree that in case of forfeiture of Earnest Money or performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in Indian Institute of Technology Kanpur in future forever. Also, if such a violation comes to the notice of Indian Institute of Technology Kanpur before date of start of work, the Executive Engineer, IWD shall be free to forfeit the entire amount of Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information / derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety & integrity of IIT Kanpur.

Signature(s) of Contractor(s) with seal

Dated:

Address

Occupation

5.9 Tender Certificate

(To be given on Company Letter Head)

Date: .....

To,
Superintending Engineer,
IWD, IIT,
Kanpur-208016(U.P.)

Sub: Certificate of compliance as per Rule 144 (xi) GFR's 2017
Tender Reference No: .....

Name of Tender / Work: .....

Dear Sir,

1. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

2. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all the requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.].

Yours Faithfully,

(Signature of the Bidder(s), with Official Seal)

5.10 Tender Acceptance Letter

(to be give on company letter head)

To,
The Superintending Engineer
IWD, IIT, Kanpur

Sub: Acceptance of terms & conditions of tender. Reference no.

Name of Tender / Work: .....

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: ..... as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No..... to..... (including all documents like annexure(s), schedule(s), etc.,), which form part of the contract agreement and I / weshall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organization too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

5.11 Financial Information

Proforma for providing Financial Information

1. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department. (Copies to be attached).

Financial Years	2020-21	2021-22	2022-23	2023-24	2024-25
Gross Annual turnover on construction works					
Profit/Loss (standalone financial turnover)					

2. Financial arrangements for carrying out for proposed work.

Signature of Chartered Accountant with Seal

Signature of bidder(s)

* The bidder should give information strictly in above format.

5.12 **Banker's** Certificate from a scheduled Bank

Proforma of **Banker's** Certificate from a Scheduled Bank
(To be printed in Bank's Letterhead)
(Scanned copy of the Certificate to be uploaded at the time of submission of bid)

This is to certify that to the best of our knowledge and information that M/s./Sh..... having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement up to a limit of Rs ..... (Rupees .....). This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

.....
(Signature for the Bank)

NOTE:

1. Bankers certificates should be on letter head of the Bank, addressed to tendering authority.
2. In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

5.13 Net Worth Certificate by certified Chartered Accountant (minimum 10% of estimated cost put to tender)

Proforma of Net Worth Certificate by certified Chartered Accountant
(To be printed in Letterhead of Chartered Accountant)
(Scanned copy of the Certificate to be uploaded at the time of submission of bid)

This is to certify that as per the audited Balance Sheet and Profit & Loss statement of the account during the financial year ....., the net worth of M/s./Sh.....(Name & Registered Address of individual/firm/company) as on 31.3.2025 is Rs..... (Rupees .....) after considering all liabilities. It is further certified that the net worth of the company has not eroded by more than 30% in the last three years ending on 31.3.2025.

.....
(Signature of the Chartered Accountant)

.....
(Name of the Chartered Accountant)

.....
(Membership No. of ICAI)

.....
(Date & Seal)

6 Proforma of Schedules

Operative schedules shall be supplied separately to each intending tenderer

SCHEDULE "A"	Schedule of Qty	Uploaded separately

SCHEDULE 'B'

Schedule of materials to be issued to the contractor:

S. No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
1	2	3	4	5
NIL				

SCHEDULE 'C'

Schedule of Tools and Plants to be hired to the contractor

S. No.	Description	Hire charges per day	Place of issue
1	2	3	4
----------NIL ----------			

SCHEDULE "D"	Extra schedule for specific requirements/document for the work, if any:	As attached in tender form.
SCHEDULE "E"	Schedule of component of other Materials, Labour, POL etc. for price escalation	N. A.
SCHEDULE "F"	Reference to General Conditions of contract.	
Name of Work:	Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14.	
Estimated cost of the work:	Rs. 1,57,81,949/ -	
Earnest money	Rs. 3,15,639/-	
Performance Guarantee	5% of the tendered value of the work	
Security Deposit	2.5% of the tendered value of the work	

General rules and direction:

Officer inviting tender	Superintending Engineer, IWD, IIT, Kanpur

Definitions:

2(vi)	Engineer-in-charge	
	For civil item works	Executive Engineer, IWD, IIT Kanpur
2(viii)	Accepting authority	Superintending Engineer, IWD, IIT Kanpur
2(x)	Percentage on cost of materials and labour to cover all overheads and profits	15%
2(x)(b)	Standard Schedule of Rates: Civil Items of Work:	D.S.R. 2023-GST with up to date correction Slips
2(xi)	Department	IWD, IIT Kanpur
9(ii)	Standard CPWD contract Form:	GCC maintenance 2023, CPWD form-8 as modified & corrected up to date. (Whether correction vide latest circulars are in corporate or not in this document). The following condition pertains to GST of clause 37 & 38 of General Condition of contract and corresponding Amendments should be read as follows: a- The Quoted rates should be inclusive of GST.
Clause 1	i) Time allowed for submission of Performance Guarantee from	7 Days

	the date of issue of letter of acceptance ii) Maximum allowable extension with late fee @0.1% per day of performance guarantee amount beyond the period as provided in i) above	7 Days
Clause 1A	Recovery of Security Deposit	Applicable.
Clause 2	Authority for fixing Compensation under Clause 2	SE, IWD, IIT, Kanpur. Or successor thereof
Clause 2A	Whether Clause 2A shall be applicable	Yes
Clause 5	i) Number of days from the date of issue of issue of letter of acceptance for reckoning date of start ii) Time allowed for execution of work	15 days Part A- Six (06) Months Part B – Five (05) Years
i)	Number of days from the date of issue of letter of acceptance for reckoning date of start	15 days
ii)	Mile stone	Time allowed for execution of work along with the amount to be withheld in case of non-achievement of milestone are shown in Tables 6
Authority to decide	Extension of time	SE, IWD, IIT, Kanpur. Or successor thereof
Clause 6A	Computerized Measurement of bills	APPLICABLE
Clause 7	Payment on intermediate certificate to be regarded as Advances	APPLICABLE
Clause 10A	Material to be provided by the contractor	APPLICABLE
Clause 10B (ii), (iii)	Whether clause 10-B (ii) and 10-B (iii) shall be applicable.	NOT APPLICABLE

Clause 10 C	Component of labour expressed as percentage of value of work	NOT APPLICABLE
Clause 10 CA	Materials covered under this clause Nearest Material for which All India Wholesale Price Index is to be Followed	NOT APPLICABLE
Clause 10 CC	Increase/Decrease in Price of materials/wages	NOT APPLICABLE
Clause 11	Work to be Executed in Accordance with Specifications, Drawings, Orders etc.	CPWD Specifications of all Civil items (CPWD Civil specification vol.1 and vol.2, 2019), with correction Slips issued up to the last date of receipt of tenders and as per NIT for Civil Works.
Clause 12: Type of work		Original work.
Clause 12.2 & 12.3: Deviation limit beyond which clause 12.2 & 12.3 shall apply for Building works		Yes
Clause 16	Competent Authority for deciding reduced rates: For Civil items	S.E., IWD IITKANPUR
Clause 17	Defect liability period	One year
Clause 18	List of mandatory machinery, tools & plants to be deployed by the contractor at site	As per site requirement
Clause 32	Requirement of Technical Representative(s)	As per table 9
The details of appointed engineers/technical staffs have to be verified and approved by Engineer- in-charge		

Table 6
Major milestones of the project

Sl. No.	Description of Milestone (Physical)	Time allowed from date of start	Maximum duration of work	Amount to be withheld in case of non-achievement of the milestones (% of composite tendered amount)
1.	Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) with sewage handling capacity 200 m3 per day based on MBBR Technology as per technical details & specifications given in Annexure 'A' in tender document:	24 weeks	24 weeks	1 %
2.	Annual comprehensive maintenance & operation of sewage treatment plants (200 KLD capacity based on MBBR technology) as per BOQ	25 week	Five years	1%

The detailed program chart approved by the engineer-in-charge shall indicate how the resources will be deployed by the contractor to maintain desired progress and for the completion of the work within the specified period. If the submitted program is approved, the milestone shall be redefined accordingly by the Superintending Engineer, IWD Indian Institute of Technology Kanpur. The amount to be withheld in such a case, for non-achievement of milestone(s), shall remain unaltered i.e., 1% of tendered amount

1.	Time allowed for execution of work	Part A- Six (06) Months Part B – Five (05) Years

Table 7
Authority to decide

1.	Extension of time (EOT)	SE, IWD IIT Kanpur
2.	Rescheduling of milestones	SE, IWD, IIT, Kanpur
3.	Shifting of start in case of delay in handing over of site.	SE, IWD, IIT, Kanpur

7. Terms & Conditions of Contract

7.1 General Commercial & Technical Conditions:

1. The work shall be generally carried out in accordance with tender specifications and the following speciation rules, unless otherwise specified the latest amended edition of all such codes/specification/manuals on the last date of submission of the tender would be applicable.

a) CPWD General Specifications for Electrical Works Part I Internal – 2023 as amended up to date.
b) CPWD general specification for electrical work part II External 2023 as amended up to date.
c) CPWD general specification for electrical work part IV Sub-Station 2013 as amended up to date.
d) CPWD General Specifications for Electrical Works Part VII D.G. Sets - 2013 as amended up to date.
e) Indian Electricity Act 2003 amended up to date.
f) National Electrical Code 2008 and NFPA (National Fire Protection Association) 70.
g) Indian Electricity Rule 1956 amended up to date.
h) National Building Code 2016
i) BIS codes as applicable.
j) Other standards and codes as applicable in the electrical and mechanical works.

Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed:

(i) Description of the Schedule of Quantities
(ii) Scope of Work
(iii) Technical Specifications and Special Conditions, if any.
(iv) Drawings
(v) CPWD Specifications.
(vi) Indian Standard Specifications of B.I.S.
(vii) Manufacturers' specifications & as decided by Engineer-in-charge.

"In the event of any variation/ discrepancy in the drawings, specifications and tender documents etc. the decision of the Engineer-in-charge shall be final binding and conclusive on the contractor and in the case the contractor have any doubt and the same should be got clarified immediately from the Engineer-in-charge and no claim of the contractor shall be entertained thereafter. Moreover, the agency is not allowed to take benefit out of any clerical/ grammatical mistake in the standard clauses/Schedule of Quantities/Specifications etc. being used in the agreement".

The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

The works to be undertaken by the contractor shall interalia include the following:

i. Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
ii. Obtaining of Statutory permissions where-ever applicable and required.
iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
iv. Warranty obligation for the equipments and/or fittings/fixtures supplied by the contractor.

2. Completeness of Tender:

All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections, foundation as per OEM/CPWD standards etc. as required shall be inclusive in the tender rates. All other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.

3. Works to be arranged by the department:

Unless and otherwise specified in the tender documents, the following works shall be arranged by the Department:

Availability of site shall be ensured by Engineer-In-Charge.

4. Works to be done by the contractor:

Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost of respective items: -

(i) Foundations for STP Tanks & equipment, Pumps, FRP Tank, Feeder pillars etc. wherever required.
(ii) Cutting and making good all damages including road caused during installation and restoring the same to their original finish.
(iii) Sealing of all floor openings provided by contractors for pipes and cables, from fire safety point of view, after laying of the same.
(iv) Painting at site of all exposed metal surfaces of the installation other than pre-Painted, items like fittings, fans, Switchgear / distribution gear items, cubicle Switch board etc. damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.
(v) Maintaining the Cleanliness safety and Hygiene standards as per applicable local bylaws and National standards.
(vi) Testing and commissioning of each of the individual system and Final Integrated System Test (IST) and Handover of complete installation.
(vii) Reports and Documentation submission post IST which includes Pre-commissioning, Commissioning, Test-Reports, IST and SOPs (standard Operating Procedures) for system and Operational manuals.

(viii) Storage space for all equipments, components and materials for the work

(ix) Dismantling of existing ducts/piping etc wherever required & shifting the same to Client/JE store. Nothing extra on account of this shall be paid.

5. Storage and Custody of Materials:

The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space may however be arranged by the department at site, if available.

The contractor shall arrange for proper storage of the electrical installation, Equipment at site. The contractor shall, however, be responsible for proper storage and safe custody of the same till their installation and completion of work to the department.

6. Electric Power Supply and Water Supply:

Power and water supply will be arranged by the contractor at the site for installation purposes. If the Institute provides water & electricity on the request of the contractor, the standard charges for water & electricity shall be deducted from contractor's bill. However, for testing purposes after the complete installation of the items, electricity supply will be made available free of cost to the contractor. Contractor will take due care to ensure the safety of electrical installation during execution of work.

7. Tools for handling and Erecting:

All tools and tackles required for handling of equipments and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the arranged by the contractor at his own cost.

8. Care of Site:

Care shall be taken by the contractor to avoid damage to the existing assets in/building/Campus during execution of the work. He shall be responsible for repairing all damages and restoring the same to their original finish at his own cost. He shall also remove, at his expense, all unwanted and waste materials arising out of his work, from the site. Any expenditure incurred by the department in this condition shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final. While execution of work if any damage to existing services like cables/pipes etc. occurs the same shall be rectified by the agency as per the satisfaction of Engineer –In-Charge. Nothing extra in this regard will be paid.

9. Addition to an installation:

Any addition, temporary or permanent, to the existing electrical installation shall not be made without a properly worked out scheme/design by a qualified Electrical

Engineer to ensure that such addition does not lead to overloading, safety violation of the existing system.

10. Work in occupied buildings/Campus:

(i) The contractor shall be responsible to abide by the regulations or restrictions set in regard to entry into, and movement within the premises.

(ii) The contractor shall not tamper with any of the existing installations including their Switching operations or connections there to without specific approval from the Engineer-in- charge.

11. Drawings:

(i) The work shall be carried out in accordance with the tender document and in accordance with modification thereto from time to time as approved by the Engineer- in-charge.

(ii) After the award of the work, the firm will be required to submit the SLD drawing/Layout for the proposed work including design layout of STP plant & other items as per schedule of work within 20 days. Work will be carried out as per the approved drawings.

12. +Conformity to IE act, IE Rules, and standards:

12.1 All E&M Works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 amended up to date (Date of call of tender unless specified otherwise). List of rules of particular importance to electrical installations under these General Specifications is given in Appendix C for reference.

13. General requirements of components:

13.1 Quality of material: All materials and equipments supplied by the contractor shall be new and the manufacturing date shall not be prior to six month from date of approval of sample/make. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site or as specified in the tender.

14. Inspection of materials and equipments:

14.1 Materials and equipments to be used in the work shall be inspected by the departmental officers. Such inspection will be of following categories:

(i) Inspection of materials / equipments to be witnessed at the Manufacturer's premises in accordance with relevant BIS /Agreement Inspection Procedure.

(ii) To receive materials at site with Manufacturer's Test Certificate(s) for specific part of equipment supplied under the scope.

(iii) To inspect materials at the authorized dealer's go downs to ensure delivery of genuine materials at site.

(iv) To receive materials after physical inspection at site.

14.2 Adequate care to ensure that only tested and genuine materials of proper quality

are used in work shall be ensured by firm. The firm shall ensure that:

(i) Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.

(ii) As and when the order is placed for the fittings/ fixtures, cables, pipes Switchgears, STP and allied Equipments & other main items etc, its copy shall be endorsed to the Engineer-in- charge.

(iii) The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.

(iv) Inspection at factory or at the godown of the manufacturer, as required, shall be arranged by the firm for a mutually agreed date. Certificate for genuineness of the fittings shall have to be provided duly signed by the manufacturer's officer not below the rank of Regional Manager. (Note: - Waiver off inspection can be allowed after taking approval from the competent authority).

(v) Delivery of material shall be taken up only with the consent of the department, after clearance of the material.

(vi) Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.

14.3 Similarly, for fabricated equipments, the contractor will first submit dimensional/GA drawings with details of switchgears & accessories for approval before fabrication are taken up in the factory. Suitable stage inspection at factory also will be made to ensure proper use of materials, workmanship and quality control.

15. Ratings of components:

15.1 All components in the installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installations in which they are used.

15.2 All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current, which will normally flow through them, without their respective ratings being exceeded.

16. Conformity to standards:

16.1 All components shall conform to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.

16.2 Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance.

17. Workmanship:

17.1 Good workmanship is an essential requirement to be complied with. The entire

work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.

17.2 Proper supervision/skilled workmen: The contractor shall engage suitably skilled/licensed workmen of various categories for execution of work supervised by supervisors / Engineer of appropriate qualification and experience to ensure proper execution of work. They will carry out instructions of Engineer-in-charge and other senior officers of the Department during the progress of work.

17.3 Use of quality materials: Only quality materials of reputed make as specified in the tender will be used in work.

17.4 Fabrication in reputed workshop: The electrical panel shall be fabricated in a factory/ workshop having modern facilities like quality fabrication, seven tank process and powder/epoxy paint plant, proper testing facilities, manned by qualified technical personnel. These shall be as per make/ item approved.

17.5 The required civil work shall be carried out as per relevant IS standards and CPWD specifications. The contractor shall obtain prior approval of all the drawings/design of various components of civil work from Engineer-In- Charge before execution.

18. Testing:

All tests prescribed in this General Specification, to be done before, during and after installation, as part of pre-commissioning stage, shall be carried out, and the test results shall be submitted to the Engineer-in-charge in prescribed Performa, forming part of the Completion Certificate.

19. Completion plan and completion certificate:

19.1 After the successful testing & commissioning of the STP i/c all allied works, the contractor shall submit an application to the Engineer-in-charge for issuing a completion certificate.

19.2 Completion As-built drawings/plan drawn to a suitable scale in CAD format indicating the following, along with three blueprint copies of the same shall be submitted along with the completion application.

(i) General/design layout of STP and allied accessories, route of cable, piping, location of level switches, flow meters and pressure gauges etc.

(ii) All structural/Architectural drawings i/c sections details of RCC tanks, foundations etc.

(iii) Reports and Documentation, post IST which includes Pre-commissioning, Commissioning, Test-Reports, IST and SOPs (standard Operating Procedures) for system and Operational manuals shall also be submitted along with the drawings.

20. Guarantee:- The installation will be handed over to the department after necessary testing and commissioning. The equipments or components, or any part thereof, so found defective during the guarantee period shall be forthwith rectified/ repaired or replaced free of cost, to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the

risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

The contractor shall submit the relevant test certificates/warrantee certificates at the time of supply of equipment/Material.

21. Supply of fittings, fixtures & other material:
The procurement of material for the works will be programmed as per the progress of work in consultation with Engineer-in-Charge. The firm will be required to submit a detailed program and prior to the procurement will seek approval of the department. The direction of the department regarding timing & necessity of getting such material will be final & binding on the firm.

22. For each E & M services the defect liability period shall be for 12 months after a final certificate of completion of work / Handed over to the client has been given for entire project (Major and Minor components) by the Engineer-on-Charge or from the actual date of completion of work.

23. Payment Terms: The following percentage of contract rates shall be payable against the stage of work shown herein

I) Civil Work:
   a) 70% after successful completion of all civil work as per schedule of work/quantity to the satisfaction of Engineer-In-Charge.
   b) Balance 30% after installation, testing and commissioning of the plant as per items of the schedule of work at specified locations in all respect.

II) E&M Work:
   a) 70% against supply, as per items of the work schedule, after delivery at site in good condition along with test certificates from OEM's of all major items .
   b) 20% after installation, testing and commissioning of the plant as per items of the schedule of work at specified locations in all respect.
   c) Balance 10% will be paid only after submission of test reports of treated sewage from STP from any Govt. approved/IITK lab.

24. All materials to be used on this work shall be ISI marked & shall be got approved from the Engineer-in-Charge before installation at site unless otherwise not covered under ISI.

25. Water & Electricity required for execution of work shall be arranged by the contractor at his own cost. However for testing of system, electricity shall be given by the department at one point only free of cost.

26. The contractor shall take all precautions for safety of the workmen. If any accident / miss- happening occur the department shall not be responsible for the same. If any compensation is to be paid to the victim the firm shall pay the same

and no claim in this account shall be entertained by the department

27. All T & P required for the execution of work i.e. digging of trenches, handling of materials and testing of installation shall be arranged by the contractor at his own cost and nothing extra shall be paid on this account.
28. Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The Contractor shall keep at his own cost all such publications including relevant Indian Standard Codes applicable to the work at site.
29. All material shall only be brought at site as per program finalized with the Engineer-in- Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

30. SAMPLE OF MATERIALS: - All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the approval from Engineer-in-Charge. Wherever brand/quality of material is not specified in the item of work, the contractor shall submit the samples as per List of Preferred Makes for approval of Engineer-in-Charge. For all other items, ISI Marked materials and fittings shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant Specifications or IS codes for the approval of Engineer-in- Charge.

7.2 Timely Completion

1. The work included in this tender is of urgent nature.
2. The work of all components must be started simultaneously and has to be delivered togetheror early within the given time schedule.
3. The contractor has to deploy the labor and supervisory staff in shifts to meet the targeted completion date. The work may be executed in extended shifts or two shifts.
4. Number of days from the date of issue of letter of acceptance for reckoning date of start shall be as per Schedule. If the Contractor commits default in commencing the executionof the work as aforesaid, the performance guarantee shall be forfeited.
5. The detailed program chart approved by the engineer-in-charge shall indicate how the resources will be deployed by the contractor to maintain desired progress and for the completion of the work within the specified period. If the submitted program is approved, the milestone shall be redefined accordingly by the Executive Engineer of IWD, IITK. The amount to be withheld in such a case, for non-achievement of milestone(s),shall remain unaltered. Any delay in achieving the milestone must be compensated within the limitations of time imposed in the Contract document
6. The contractor shall procure the required materials in advance so that there is

sufficient time for testing of the materials and approval of the same before use in the work, as required.

7.3 Rates

1. Unless otherwise provided in the schedule of quantities of the work the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building (Inclusive of GST) and nothing extra shall be payable to him on this account.

2. The rates for all items of work shall, unless clearly specified otherwise, include cost of all labours, materials and other inputs involved in the execution of the item irrespective of whether they have been specifically mentioned in the tender document or not.

3. In case the same item (s) appear more than once in the schedule of work / BOQ under the same sub head or among the different subhead of works, the lowest rate quoted for that item (s) shall be considered for the particular item(s) wherever appeared in any part of BOQ / Schedule of works for the purpose of tender evaluation although web generated e-price bid may incorporate different quoted rate for same item(s) as per the quoting pattern of the tenderer. The tendered amount thus worked out shall be final &shall be binding on the contractor.

4. The rates quoted by the contractor will be deemed to be inclusive of any extra expenditure of this reason. The contractor has to increase the manpower or other tools etc. to do the work as per requirement of the work at his own expenses. Nothing shall be paid on this account.

5. The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.

6. Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

7. All materials shall only be brought at site as per advice and prior approval of the Engineer-in- Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

8. Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to approved manufacturers specifications where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested from approved labs wherever required at his own cost.

9. The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the client department. No extra payment shall be made on this account.

10. The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, preparatory works, working during monsoon, working at all depths, height, lead, lift and location etc until / unless specified otherwise and any other incidental works required to complete this work. Nothing extra shall be payable on this account.

7.4 Quality and Workmanship

1. The contractor shall be entirely responsible and answerable for all the works done by him regarding quality, adherence to the laid down specifications, terms and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.

2. The materials having ISI mark shall have precedence over the one conforming to IS Specifications.

3. The proposed is for Institute premises and quality of work is paramount importance. The contractor shall have to engage well experienced skilled labour and deploy modern T & P and other equipment to execute the work.

4. Samples of all materials and fittings to be used in the work in respect of brand manufacturer and quality shall be approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.

5. All materials used in the work shall be new and of good quality, conforming to the relevant specifications as per good engineering practice. All the materials proposed to be used in the work should be approved from Engineer in Charge before use in work.

6. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS/ISI mark for the particular material. Any material/fitting whose sample has not been approved in advance and any other unapproved material brought by the contractor shall be immediately removed as soon as directed. Where the make of any particular material is not specified in the Contract document, the material shall be supplied as per makes desired by the engineer-in-charge.

7. It will be the responsibility of the contractor / bidder to ensure use of genuine materials in the work. The department reserves the right to get (any / all materials / components) inspected by the manufacturer or their authorized representatives at any stage of the execution of work. If any of the materials, supplied and used in work is found spurious at any stage, then the department reserves the right to ask the contractor to replace it by genuine one and make suitable recovery till it is done, even

if any payment against that material is already made.

8. No material to be brought and used at site without the prior knowledge & approval of Engineer-in-Charge.

9. The department may ask for any valid document like manufacturer's test certificate, document for purchase of the material, document for import/shipment of imported materials etc. as deemed fit by the engineer-in- charge to ascertain genuinely of material supplied by/used in the work by the contractor. The contractor shall remain bound to submit all such documents to the department failing which payment may not be made or if already paid may be recovered/ withheld from subsequent running account payment.

10. All equipment and their components, and all the materials to be used in the work shall be suitable for the environmental conditions at the location of the work.

11. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.

12. The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.

13. The contractor shall arrange carrying out of all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including fee for testing. The said cost of tests shall be borne by the contractor/department in the manner indicated below.

    a) By the contractor, if the results show that the test does not conform to relevant CPWD Specifications / BIS code or specification mentioned elsewhere in the documents.

    b) By the department, if the results conform to relevant CPWD Specifications / BIS code or specification mentioned elsewhere in the documents.

14. Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.

15. The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.

16. BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate or test certificate from approved testing laboratory to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.

17. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.

18. All the material brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.

19. The contractor shall be fully responsible for the safe custody of the materials issued tohim even if the materials are in double lock and key system.

7.5 Natural calamity:

No payment will be made to the contractor for any damage caused by rain, snow fall, floods, dampness, fire, sun or any other natural cause whatsoever during the execution of work. The damage to the work due to above reason, if any, shall have to be made good by the contractorat his own cost and no claim on this account shall be entertained.

7.6 Stocking and Disposal of Materials & Debris

1. The contractor shall take instructions from the Engineer-in-Charge regarding collectionand stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc. are to be constructed.

2. After completion of work the agency shall remove materials and debris etc. from site asper the direction of Engineer-in-Charge, at no extra cost.

3. Contractor's job will also include removing of all malba and debris arising in the processof painting including washing of floor to remove stains of paint, at no extra cost.

4. The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and

coordinated mannerand shall perform it in proper sequence to the complete satisfaction of others.

5. For construction/renovation works which are likely to generate malba/rubbish to the tune of more than a tempo/truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at their own cost to the notified/specified dumping ground and under no circumstances these shall be stacked/dumped, even temporarily outside the construction.

6. Dismantled but useful materials/components/equipment, if any, should be returned to the Institute as per the direction of Engineer-in-Charge.

7.7 Painting

1. Contractor will thoroughly clean all paint marks left here and there due to spilling and splashes of paint at no extra cost.

2. Contractor will first submit the shade cards of relevant make of paint to IIT for approval of color before procuring the paint in bulk.

3. No mixing will be allowed with Stainer to achieve a particular color. Contractor will procure direct colour paint of approved shade and apply directly.

4. Contractor shall have to brought at least 50% quantity of total premium acrylic smooth exterior silicon additives paint and water proofing cement paint and shall deposit it in the custody of concerned site Engineer before start of work. The consumption shall be monitored by the Institute. All empty drums shall have to be kept till completion of the work.

5. Contractor has to make a sample of exterior painting on the surface of wall and after getting approval from the competent authority. The contractor has to finish the rest of work accordingly as per satisfaction of Engineer-in-charge.

7.8 Safety and Security

1. The contractor has to follow all safety norms as laid down in National Building Code of India. All the workers shall be equipped with the required safety gadgets while working at site such as ISI marked helmets, Shoes and safety belts, gumboots, gloves etc.

2. The contractor, the authorized representative(s), workmen etc., shall strictly observe orders pertaining to fire precautions prevailing in the area.

3. The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.

4. Contractor will arrange proper metal ladders, M.S. double scaffolding (for working, painting, etc. at higher levels) at his own cost and will take all safety measures like double harness safety belt, mechanized electrically operated platform etc. If it is observed that work is proceeding without adequate safety precautions, work may be stopped by Engineer-in- charge and in such cases, contractor will be solely responsible for delay and

its consequences thereof.

5. The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.

6. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night speed limit boards red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work.

7. It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.

8. The Institute shall not have any responsibility or liability in case of any accident injury to the personnel to the contractor at work site or to the general public at the work site due to mishandling equipment by the personnel of the contractor or any other similar reason. The responsibilities and liabilities for such accidents and incidents shall be borne by the contractor.

7.9 Approach to Site

1. The tenderer shall see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by thecontractor at his own cost.

2. Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.

7.10 Water and Flooding

1. The contractor shall have to arrange water of desirable quality for the construction purpose for which he may have to install water purifier at site or might have to bring/ purchase water from outside as per decision of Engineer-in-charge. Nothing extra shall be paid on this account.

2. For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do it and nothing extra shall be paid except otherwise provided in the items of schedule of quantity.

3. In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained not withstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any.

4. The water charges (for water connection) shall be borne by the contractor.

7.11 Acts and Laws

1. The Contractor shall keep himself fully informed of all acts and laws of the Central & StateGovernments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector / MC etc. and any other statutory bodies shall be adhered to, by the contractor, during the execution of work.
2. The Contractor shall also adhere to all traffic restrictions notified by the local authorities.
3. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges, as applicable) payable to suchauthorities for carrying out the work, shall be borne by the Contractor.
4. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Institute and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself/herself or by his/her employees or his/her authorized representatives. Nothing extra shall be payable on these accounts.
5. The fee payable to statutory authorities for obtaining the various permanent service shallbe borne by the Institute.

7.12 Labour and Laws

1. The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works, at his site office.
2. Huts for labour are not permitted within the premises of the Institute. No extra cost shallbe payable even if the contractor provides such accommodation at a place as is acceptable to the local body.

7.13 Nondisclosure Agreement.

1. The Agency shall take all precautions not to disclose, divulge and/or disseminate to any third party any confidential information, proprietary information on the Institute business or security arrangements (including but not limited to the Assignment instructions, Schedules and other subsequent Arrangements) and/or business of the Institute. The obligation is not limited to any Scope and the Agency shall be held responsible in case of beach of the confidentiality of Institute's information.
2. If the Agency receives enquiries from Press/Media/Radio/Television or other bodies / persons, the same shall be referred by the Agency to Institute immediately on receipt of such queries.

7.14 Indemnification:

1. The agency shall be directly responsible to indemnify the Institute against all charges, dues, claims, etc. arising out of the disputes relating to the dues and employment of the personnel deployed and further for any claim/compensation against all damages and accidents caused due to negligence on the part of the agents, employees and other personnel of the agency.

2. That the contractor shall keep the IITK indemnified against all claims whatsoever in respect of the employees deployed by the contractor. In case any employee of the contractor so deployed enters in dispute of any nature whatsoever, it will be the primarily responsibility of the contractor to contest the same. In case IITK is made party and is supposed to contest the case, IITK will be reimbursed for the actual expenses incurred towards Counsel Fee and other expenses which shall be paid in advance by the Contractor to IITK on demand. Further, the contractor shall ensure that no financial or Any other liability comes on IITK in this respect of any nature whatsoever and shall keep IITK indemnified in this respect.

7.15 Force Majeure:

If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosion, epidemics quarantine restriction, strikes, lockouts or acts of god (hereinafter referred to as events) provided notice of happenings of any such event, is served by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination thereof. Provided the Party satisfies Institute adequately of the measures taken by it. Neither party shall, by reason of such event, be entitled to terminate this contract, nor shall either party have any claim for damages against the' other in respect of such non-performance or delay in performance. Further, the services under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of Institute as to whether the services have to resume or not shall be final and conclusive, provided further, that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, Institute may at his option, terminate the contract.

7.16 Dispute resolution

1. The institute reserves the right to amend rules whenever and wherever considered necessary and appropriate. The same shall be intimated to the agency in due course.

2. Any dispute arising out of and in relation to this agreement shall be referred to the arbitration by sole arbitrator to be appointed by Director of the Institute. The arbitration would be conducted and governed by and under the provisions of

Arbitration Act, 1996 and its amendments. Any legal dispute will be subject to jurisdiction of Kanpur Courts only and no other court shall have the jurisdiction.

3. Any dispute arising out of and in relation to this agreement shall be referred to the arbitration by sole arbitrator to be appointed by Director of the Institute. The arbitration would be conducted and governed by and under the provisions of Arbitration Act, 1996. Any legal dispute will be subject to jurisdiction of Kanpur Courts only and no other court shall have the jurisdiction.

7.17 Arbitration

1. Except as otherwise provided anywhere in this Agreement, if any dispute, difference, the question of disagreement or matter, whatsoever, arises between the parties, as to the meaning, operation or effect of the Agreement or out of or relating to the Agreement or breach thereof, the same shall be referred to a Sole Arbitrator, to be appointment by the Director of the Institute at the time of the dispute.

2. If the Arbitrator, to whom the matter is originally referred, dies or refuses to act or resigns for any reasons from the position of arbitration, it shall be lawful for the Director of the Institute to appoint another person to act as Arbitrator in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by its predecessor, provided both the parties consent to this effect, failing which, the arbitrator shall be entitled to proceed on the matter de- novo.

3. It is a term of the Agreement that the party invoking the arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration under the clause.

4. It is a term of the contract that the cost of arbitration shall be borne by the parties themselves.

5. The place of the arbitration shall be Kanpur Nagar, Uttar Pradesh, India.

6. Subject as aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications, amendments or re-enactment thereof and rules made the reunder and for the time being in force, shall apply to the arbitration proceeding under this clause.

7. Except as otherwise provided anywhere in this Agreement, the Arbitration proceedings shall be conducted in English and the Agreement shall be constructed, interpreted and governed by the law of India, for the time being in force.

7.18 Jurisdiction of Courts

The court(s) at Kanpur Nagar, Uttar Pradesh, shall have the exclusive jurisdiction to try any as all the disputes(s) between the parties arising out this Agreement.

8. Scope of work

The Institute desires to install a STP of 200 KLD along with all associated civil, E&M works in the institute. This project aims to complete such installation work on a timely basis.

8.1 **Part 'A':** Design, supply, installation, testing and commissioning of 200 KLD Sewage Treatment Plant (STP) based on MBBR technology equipped PVC UV stabilized plastic media for bacteria growth to treat the sewage water as per the design conditions. The STP includes all the tanks, accessories, pipes etc. in the scope of this item as per the design condition and details of sewage and effluent mentioned below:

Raw sewage parameter at inlet:

PH : 6.5 - 8.5
BOD : 250-300 mg/l
TSS : 200-450 mg/l
COD : 200-550 mg/l
Oil & grease: 50-140 mg/l

Treated effluent parameter as per PCB norms.

pH : 6.5-8.5
BOD : < 10 mg/l
TSS : < 10 mg/l
COD: <30 mg/l

Total Nitrogen ≤ 10 mg/l Toal Phosphorus ≤ 1 mg/l
The treated effluent shall be odorless, and other obnoxious matters.

8.1.1 Civil work:

I. The volume/Size of the tanks etc. is minimum and can be modified to suit the design parameters without any extra cost. All the RCC tanks of M25 grade should have minimum cement content @ 330 kg/cum and minimum reinforcement @ 130 kg/cum.

II. All the tanks and water retaining structures to be waterproofed inside and outside with suitable durable material as decided by the Engineer- in-charge.

III. Complete with excavation, PCC, Centering and shuttering, reinforcement, RCC work, Brick work, plastering from inside using water proofing compound, levelling and dressing of the site, disposal of excess soil and malba generated during construction/ SITC of Plant for all leads :

IV. FILTER FEED TANK of CAPCITY 50 KL in civil with RCC M25 grade with depth not more than 3.00 m, Size as per design/site

V. All civil work like foundations for STP tank and pumps/ plant i/c required shade for motors/pumps placed outdoor as per the design of OEM and approval of Engineer-in-Charge

VI. TRATED WATER TANK of CAPCITY 50 KL in civil with RCC M25 grade with depth not

more than 3.00 m, Size as per design/site

VII. Anoxic Tank in RCC M25 construction, Size as per design, Approximate size: 2.0Mx1.4Mx 4.0M Depth – 01 No.

VIII. Panel/pump Room of approx. size 4.0x 5.00 x3.0 Meters with CC floor, Acrylic smooth emulsion paint, acrylic paint exterior grade, flush door, MS windows, Water proofing of roof with brick Koba and required electrical wiring, switches & sockets, lights & fan(s) with Complete testing and approval of engineer- in Charge.

8.1.2 E&M work: The scope of work includes Fabrication, Supplying, Installation, Testing, commissioning with Electrical & mechanical works and associated civil works including providing general arrangement drawings, sectional drawings with equipment placement, preparation of report/as- built drawings as per pollution control board requirement. Treated effluent shall be as per norms of NGT/CPCB/local body amended till date or as per standards mentioned above whichever is stringent. The detailed scope of E&M work is as follows:

I. Anoxic Mixer: Supplying, Installation, Testing and Commissioning of energy efficient 3 blades SS MOC submersible mixer for Anoxic tank, RPM of 80-100 with minimum 3 HP motor suitable for operation on 3 phase, 415 Volt, 50 Hz AC supply as required. 1 Job

II. Raw sewage handling pump (1W+1S in Equalization Tank): Supply, installation, testing and commissioning of continuous duty submersible centrifugal non-clogging pumps for sewage handling of 3 HP, 50 mm delivery size, flow 312 LPM @ 19 M Head, 415 volt, 3 phase, 25 mm solid handling along with all interconnecting pipelines, suitable size valves, suction and delivery header of an approved make of suitable capacity, bend and lifting chain arrangement for service & maintenance complete in the sewage collection tank complete etc. as reqd. - 2 Nos

III. Air Blower with motors(1W+1S): Supplying, Installation, Testing and Commissioning of twin type rotary air blowers capable of delivering 300 cum/hr of Air and 0.50 kg/cm2 pressure driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of 7.50 HP/suitable capacity with accessories MS base plate, safety valves, suction filter, NRV, PRV, anti-vibration pad, V – belt, Belt guard, Drive and driven pulleys Suitable for 415 ± 10% volts, 3 phase, 50 Hz AC supply as required.- 2 Nos

IV. Air Diffuser: Supplying, Installation, Testing and Commissioning of bubble diffuser with Tubular Membrane set of EPDM/Silicon with anti-fungal treatment of size 63mm X 610 mm Long to provide clog free oxygen for Equalization tank, media tank, aeration and sludge holding tank for providing aeration minimum diffuser 30 nos. (size 63mm X750mm or more as per OEM requirement.

V. Piping/ valves and accessories: Providing and fixing all piping and isolation control valves, check valves, multiport valves for making the system complete UPVC Schedule 40

and MS pipe Class 'C' pipes including all necessary fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pip/ceiling wall/ ceiling with suitable clamp/support frame ap per site requirement complete as required. The outlet from treated water transfer pump shall be connected to the available treated water grid up to a distance of 50 meters.

VI. Chlorine/hypo dosing Pump: Supplying, installing, testing and commissioning of chlorine dosing system consisting of one HDPE tank of 100 liters capacity for storage of chlorine dosing solution with a positive displacement diaphragm dosing pump having variable flow rate of 0-6 lph- 2 Nos

VII. MBBR Tanks: MBBR 1 & 2 MS tanks with 3mm FRP/epoxy anticorrosive paint with diffused aeration system and diffusers arrangement for aeration with MBBR media. Overall volume 50 m3 Total Height 2.5 (Meter). The MS Sheet thickness will not be less than 6 MM

VIII. MBBR Media: Supplying, Installation, Testing and Commissioning of MBBR media of PP/PVC self- supporting, cylindrical shaped structure with fins having specific gravity of 0.90- 0.95gm/cm3 for enhanced Dwelling space for bacterial growth installed in Aeration tank as required. SIZE 16 X 22 MM - 1 Job/50 Cum approx.

IX. Tube Deck/ Secondary Tube Settling Media/Lamella system: Supplying, Installation, Testing and Commissioning of Tube settling media complete with MS tank or lamella system complete with lamella plates and MS tank as per design and approval of Engineer-in- Charge. - 1 Job

X. Filter Feed pump – (1W+1S): Supplying, installation, testing, commissioning of single/multistage Centrifugal type, mono block, self-priming pump having discharge rate of minimum 20 m^3/hr at a head of 30 meters, with CI impeller of an approved make and complete with valves, suction and delivery headers capable of handling clear water complete with TEFC induction motor class B insulation, mounted on a common structural base plate with gun metal isolation cock and suitable anti vibration pads for pump foundation, motor of suitable/3 HP to match with the capacity of the Pressure Feed pump to work on 400/440 volts, 3 phase, 50 Hz AC supply with suitable rpm.- 2 Nos

XI. Treated Water Transfer pump – (1W+1S): Supplying, installation, testing, commissioning of single/multistage Centrifugal type, mono block, self-priming pump having discharge rate of minimum 20 m^3/hr at a head of 30 meters, with CI impeller of an approved make and complete with valves, suction and delivery headers capable of handling clear water complete with TEFC induction motor class B insulation, mounted on a common structural base plate with gun metal isolation cock and suitable anti vibration pads for pump foundation, motor of suitable/3 HP to match with the capacity of the Pressure Feed pump to work on 400/440 volts, 3 phase, 50 Hz AC supply with suitable rpm.- 2 Nos

XII. Multigrade sand Filter: Supplying, installing, testing and commissioning of vertical type Multigrade sand Filter capable of filtering 20 cum/hour of water at prescribed filtration rate of 15 cum/sq.m/hr. The filter shall comprise of MSEP (Mild steel Epoxy

paint) shell, suitable for test pressure of 6 kg/sq.cm. complete with required no's of butterfly valves, connected frontal Mild steel heavy class piping, flanges, pedestal, access cover, bed plate with strainers/ lateral pipe distribution, pressure gauge, first charge of filter media as required. (Minimum Size 1000 MM X 1800 MM)-1 Set

XIII. ACTIVATED CARBON FILTER: Supplying, installing, testing and commissioning of vertical type Activated carbon filter capable of filtering 20 cum/hour of water at prescribed filtration rate of 15 cum/sq.m/hr. The filter shall comprise of MSEP (Mild steel Epoxy paint) shell, suitable for a test pressure of 6 kg/sq.cm., Complete with required no. of butterfly valves, connected frontal Mild steel heavy class piping, flanges, pedestal, access cover, bed plate with strainers/lateral pipe distribution, pressure gauge, first charge of filter media having activated carbon etc. as required. (Minimum Size 1000 MM X 1800 MM)- 1 Set

XIV. SLUDGE RECYCLE PUMP – (1w+1s): Supplying, Installation, Testing and Commissioning of Centrifugal, mono block/screw sludge recycle pump to recycle sludge to Aeration Tank & excess sludge to sludge tank having discharge rate of minimum 6 m3/hrs. at a head of 10-12 meters suitable for operation on 3phase 415 Volt 50 Hz AC supply. - 2 Nos (Make- Roto/Myto)

XV. Hydraulic operated Filter press: Supplying, installing, testing and commissioning of Hydraulic operated Filter press with 3 HP Motor having 1440 RPM for sludge removal having specification as below: - Size: 18 x18, No. of plates: 17, MOC: PP+MS, Cake Holding Capacity: 120 Liters. Filtration Area: 6.20 M2, Operating Pressure Bar: 4.0-5.0 Tightening Mechanism : Hydraulic

XVI. INSTRUMENTATION: Supplying, Installation, Testing and Commissioning of following complete as required:

a) PRESSURE GAUGES: Supplying, Installation, Testing and Commissioning of Bourdon / Diaphragm type pressure gauges to Indicate the Pressure having range of 0 to 4 Kg/ cm2 for Pumps & 0 to 1.0 Kg/cm2 for Blowers etc as required. - 1 Job

b) LEVEL SWITCHES: Supplying, Installation, Testing and Commissioning of level switches to Indicate the low & High level inside the tanks as required – 1 Job

c) ELECTRO MAGNETIC FLOW METER (1 For Sewage pump outlet & 1 for ACF outlet): Supplying, installation testing and commissioning of micro- processor based Electromagnetic Flow meter for 200 KLD plant capacity Suitable for 2-15 m3/hr with flow rate for sewage water with pulsed DC excitation having automatic Zero Correction with Bi Directional flow measurement, compact instrument version with measuring sensor (primary) and Amplifier integrated in 1 Mechanical unit, IP 65 Protection measuring pipe material SS:304, electrode material SS:316 with 16 Character into 2 Lines LCD 63 alphanumeric display for flow rate, totalize, diagnostic message, flow alarms with high and low flow program, Indicator; enclosure - cast aluminum, weather proof; mounting-field(direct on sensor); supply power 230volt ac etc. complete as required. – 2 Nos.

XVII. CONTROL PANEL for 200 KLD STP: Design, Installation, testing and commissioning of the following integrated, cubicle type, dead front, extensible, sheet steel PLC based with touch screen & in built remote controlling operation control panel anchoring to the foundation. The panel shall be suitable for 500 volts, 50 cycles, 4 wire, supply, quoted price shall include, 25 mm thick rubber mats, wiring, cable tray, control wiring and copper earthing from control panel to various equipment like motor starters pump motors etc. The panel shall have separate compartments for bus bar and cable alleys. the following components and accessories shall be mounted within each control panel.

a. One No amp's TP incoming MCCB complete with following:

   i. 0-500 volts 96x96 square mm voltmeter with selector switch and fuses 2 SET
   ii. 0-500 amps 96x96 square mm ammeter with 100/5 amps ratio CT,s and selector switch 1 SET
   iii. Phase indicating lamps with toggle switches.
   iv. Indication lamps for ON/OFF/TRIP status of motors

b. Aluminum bus bar sleeve type, rated at 200 amps for three phase & neutral.

c. Outgoing Feeders/Starters of suitable rating with auto manual selector switch, all safety gears such as single-phase preventer, dry run protection, reverse phase, relay with suitable relay range etc. as per standard practice and direction of engineer in charge

d. Supplying and laying of XLPE insulated PVC sheathed armored Al./copper conductor cables of suitable ratings for various pumps/motors in pipe/on wall/on cable tray as per site requirement including necessary terminations etc.as required. -1 Lot

8.2 Part B: Annual comprehensive maintenance & operation of sewage treatment plants (200 KLD capacity based on MBBR technology) along with sand & carbon filters which includes replacement/top up of media of filters periodically, repairing & maintenance of all pumps & motors, and pumping the recycled water for use at desired location i/c all spares, consumables and , replacement/repairing of defective and damaged parts of the plant as required to run the plant round the clock to provide prescribed quality of treated water from STP. (For 5 Years after completion of Part A i/c DLP)

The scope of work for Part-B of the contract is for comprehensive O&M of the plant and shall come into effect from the next day of completion of Part A but not limited to the followings:

1. Operate the STPs & its maintenance during round the clock.
2. Undertaking electrical & mechanical repairs of pumps, motor, starter and the connecting cables i/c taking out and lowering after servicing.
3. Protecting the sump wells and STPs against theft and trespass.
4. The contractor should always maintain the plant premises neat & clean.
5. Maintaining close liaison with the Engineer-in-charge for receiving instructions.
6. Any other work assigned by the Engineer-in-charge.
7. Hypochlorite/Bleaching powder dosing in the treated water before supply for horticulture purpose and low-end use. (The bleaching powder of approved brand and manufacturer to be purchased by the contractor for the period of not more than three months at a time. The cost of bleaching powder shall be included in the quoted rates.
8. Any other consumable/ spares required for smooth running of plant shall be provided free of cost by the contractor. A daily transition record of all shall have to be maintained by the contractor.
9. The Plants shall be operated round the clock. The manpower shall be deputed as per requirement for efficient working of the plant. The minimum wages revised by Govt. after part B of the contract comes into effect, shall be reimbursed on actual basis. No contractor's profit shall be payable on the arrear due to revised minimum wages.
10. The services shall be operated & maintained all 365 days in the year and shall not be closed on holidays, weekends, festivals etc. If necessary, the contractor will have to retain his staff in the campus overnight if there is any disturbance in the city.
11. Only electricity shall be provided free of cost, all other consumables, all major & minor spares shall be inclusive in the quoted rate to run the plants uninterrupted.

12. Other than routine maintenance work, the plant shall be restored within 48 hrs in case of minor breakdown and 72 hrs to one weak in case of major breakdown, failing which a penalty of Rs. 10,000/-per weak shall be levied till the final restoration of plant.

13. The contractor must arrange the quarterly visit of the technical person from the manufacturer to assess the performance of the plant and shall submit its reports with all technical input to the Engineer-in-charge, failing which the necessary recovery may be made.

14. The minimum wages as applicable in the Institute shall be payable to the worker. The wages shall have to be paid within 10th day of every month failing which a penalty of Rs. 2500/- per day shall be recovered till the date of actual payment to the worker. The monthly bills for the work under part-B shall be submitted by the contractor for payment.

NOTE: The scope of work is indicative and shall not be limited to the scope mentioned above. Any other requirement necessary for O&M of the plant shall be considered inclusive in the quoted rates. The contractor should be able to execute the work comprehensively to Operate the plant as per the terms and conditions of the contract.

8.3 ;TECHNICAL SPECIFICATION FOR ELECTRICAL & MECHANICAL WORKS

INTRODUCTION

The STP is to be constructed as a composite work such that the scope includes Design, construction, supply, erection, testing, commissioning of 200 KLD STP including all civil, electrical, mechanical, instrumentation and all other allied Works.

This part of the requirements sets out the general standards for mechanical equipment to be used by the contractor for the work. Any item not mentioned herein but required for completion of work shall have to be taken into account by the contractor. Reference to any specific items does not necessarily imply that it is to be included in the works. All equipment used for the works shall, unless otherwise specified, comply with the provisions of this chapter.

The contractor has to submit the list and schedule of all design/drawings/calculation / QAP/ etc. within 30 days of issue of award letter.

GENERAL

Material

All materials incorporated in the work shall be the most suitable for the duty concerned and shall be new & from reputed/approved make or approved quality and of first-class commercial quality, free from imperfection and selected for long life and minimum maintenance. Destructive/Non-destructive

tests, if called for, shall be carried out. All the moving parts of the plant, or shaft and spindles or faces etc. In contact with them shall be corrosion resistance materials. All parts directly in contact with various chemicals shall be completely resistant to corrosion, or abrasion by these chemicals, and shall maintain their properties without aging due to the passages of time, exposure to light or any other causes. All material shall confirm the material as per BIS or any equivalent standard. All stainless-steel materials used shall be of SS 316 unless otherwise specified.

Workmanship

Workmanship and general finishing shall be of first-class quality and in accordance with the best workshop practice. All welds shall be as per BIS or any equivalent standards. All tolerance and clearance shall be as per good and sound engineering practice. Should the Engineer–in-charge not consider any material acceptable, it shall be replaced.

Design Features

As far as practicable, all proposed designs shall be as per the latest proven concepts and practices. The equipment shall be new, of robust design for a long reliable operating life. These shall be capable of 24 hours operation in a day for 365 days in a year for continuous operation for prolong periods in the climatic and working conditions prevailing at the site and with a minimum of maintenance. Attentions shall be given to extra temperature and the rating of electrical and mechanical equipment, cooling systems and choice of the lubricating system.

The equipment should be designed to provide easy access to and replacement of the component/parts which are subjected to wear without the need to replace whole units. All parts in contact with water/Effluent/chemicals shall have a life from new to replacement for 15 years minimum and new to repair of not less than five years. Design features shall include the protection of equipment against damage caused by vermin, dirt, dust and dampness and to reduce the risk of fire. Equipment shall operate without undue vibration.

The noise level produced by any equipment like pump sets, compressor sets, blowers etc.., shall not exceed 85 dB(A) measured at a distance of 1.86 m from outer surface of source. At the time of operation, the mechanical vibration shall not exceed the limit given in the Table 2-1, at recommended points of the measurement as per ISO10816:1995.

During the commissioning of the plant/ equipment if noise level/vibrations found beyond the permissible limit, contractor to rectify/replace the equipment at no extra cost with in mutually agreed time limit. During the O&M period (O&M is done by contractor) if noise/vibration of equipment found beyond the permissible limit, rectify/replace of the particular equipment shall be the responsibility of contractor.

Table 2-1 : Permissible Equipment Velocity of vibration (in mm/sec)

Sr. No.	Equipment	Permissible Velocity of Vibration (in mm/sec)
1	All rotating equipment without reciprocating parts of motor rating ≤ 15 kW	1.12

2	All rotating equipment without reciprocating parts of motor rating > 15 kW & ≤ 75 kW	1.8
3	All rotating equipment without reciprocating parts of motor rating >75 kW	2.8

Parts shall be designed to withstand the maximum stress under the most severe conditions of normal service. All rotating elements shall be dynamically and statically balanced.

Blower Noise Limits

The blowers supplied under this contract shall be quite in operation. The operator shall guarantee that the total sound power noise emission for the aeration system shall be broadband and free from any total or intermittent components. Under any loading condition from no load to full rated, the blower supplied shall comply with the noise requirements.

Materials of Constructions &Tests

The material of construction for the blowers shall be at least equal in quality to the following:

Casing	CI Conforming to IS : 210 Gr FG 260
Rotor	Alloy Steel
Shaft	Carbon Steel C40/EN 24/19
Timing gear	Cast Alloy steel
Pulley and gear side Plates and covers	CI conforming to IS 210 Gr FG 260
Impeller	As per Manufacturer's std.
Base Plate	Steel, Galvanized
Nuts and Bolts	SS

Submersible Pumps -General

i. Submersible pumps shall be of the single-entry design supplied complete with boltless self-aligning duck-foot assemblies giving automatic connection to the discharge pipe work.

ii. The total head capacity curve shall be continuously rising towards the shutoff with the highest at shutoff.

iii. Pumps shall be suitable for single as well as parallel efficient operation at any point in between the maximum and minimum system resistances.

iv. The pumps shall be designed to handle solid sizes of up to 80 mm. Pumps shall run smooth without undue noise and vibration.

v. The pump set shall be suitable for starting with discharge valve open and/or closed.

vi. The pump set shall be capable of withstanding the accidental rotation in reverse direction. Pump efficiency should be more than 85%

vii. The material of construction for submersible pumps shall be as follows:

Sr. No.	Component	Material
1	Impeller	SS : ASTM A 743 CF8M
2	Casing	CI, IS: 210 Gr FG 260 with 1.5 to 2 % Nickel
3	Shaft	SS : BS:970 AISI Gr 316
4	Bush	Bronze IS 318 Gr LT B2
5	Guide Rail Pipe	SS : BS 970 AISI Gr 316
6	Fasteners and Foundation Bolts	Ss : BS:970 AISI Gr 316

viii. Material test certificates shall be furnished by the Operator and shall have the approval of Engineer- in-charge.

ix. The submerged cable shall be a multi-core flexible cord, Vulcanized rubber insulated with tough rubber sheath and outer PCP sheath to BS6500.

x. Where both thermal protection and moisture-sensitive devices are incorporated within the pump, both devices shall be brought out via separate conductor within the motor cable, although one such conductor may be common.

Centrifugal Pumps

i). Centrifugal pumps shall have head/quantity characteristics which fall continuously from the maximum pressure at closed valve conditions, and which are steep in order that variation in head shall have a minimal effect on the quantity discharged.

ii). The design speed of any pump with a duty flow greater than 20 l/s shall not exceed 1500 rpm. Pump motor rating shall exceed the maximum pump power consumption over the operational range of the pump by at least10%.

iii). Pump efficiency should be more than 75%.

Chemical dosing Pumps

i). Chemical dosing pumps shall be piston diaphragm or mechanical diaphragm type as specified. Pumps may be simplex or duplex arrangements to suit the capacity or process requirements. The pump design shall incorporate positive stroke return. The maximum stroking speed shall not exceed 100 strokes per minute. Pump, motor and driving arrangement shall be mounted on a robust combined base plate.

ii). Pump liquid ends shall be selected for compatibility with the pumped liquid. Suction and discharge valves shall be the single ball type allowing a free flow self-cleaning action. Ball and seat materials shall be resistant to abrasion.

iii). Pumps shall incorporate a variable stroke mechanism to allow the output to be varied while the pump is running. Stroke adjustment shall be manual or where specified by electrical or pneumatically controlled stroke positioner. A stroke length indicator and digital stroke counter shall be fitted, Pumps shall be driven by a flange mounted IP 55 motor, via an oil bath reduction gearbox and variable

stroke mechanism giving step less adjustment between zero and maximum stroke length. where flow proportional dosing is required the variation of output shall be achieved by varying the speed of the pump motor and not the pump stroke length.

iv). The normal operating range of dosing pump shall be not less than6:1.

v). Mechanical Diaphragm: Diaphragm rigidly coupled to the drive train. Single suction pumps and discharge valves. Glandless. Accuracy: 3% of stoke.

vi). Piston Diaphragm pumps: Diaphragm hydraulically operated by liquid displaced by a plunger and protected from excess pressure via a relief valve. Accuracy: 2% of the stroke.

vii). Material shall be selected to suit the chemical being pumped. Liquid end shall be polypropylene, AISI 316 SS, Glass or Hastelloy C. Diaphragm

viii). Material shall be butyl rubber, PTEE, or Hypalon and glans shall be PTEE or Neoprene.

ix). Each pump shall be provided with inlet and outlet isolating valves and where necessary with pressure relief and non-return valves. Dosing pumps shall be provided with back pressure loading valves and pulsation dampeners in the delivery lines depending on the downstream conditions.

x). A relief valve shall be incorporated in the delivery lines under conditions where the pump discharge pipe may be shut off or where pressure may rise to an excessive point. the relief valve shall be sized to handle the system pressure and to discharge maximum pimp output freely, and shall be located in the discharge line between the pump and the first downstream isolating valve or in the case of dosing pumps the back pressure loading valve. Relief valves when used on the pumps handling non-hazardous chemicals shall discharge the vented liquid to waste. When used on hazardous chemicals the valve outlet shall be piped back to the suction supply tank or bounded area. The open end of the return pipe shall be located where it is visible, so that any relief valve leakage/operation can be detected.

xi). Pump transferring/dosing chemicals to system under pressure shall incorporate a pressure gauge on the pump delivery. Air cocks shall be provided for release or air where necessary.

xii). Unless otherwise specified flushing connection shall be provided at each inlet and flushing shall be manual. When flushing, water shall be discharged either locally through a drain valve or to the point of application of the chemical. Facilities shall also be provided for flushing chemical pump suction and delivery manifolds and delivery lines to point of application.

xiii). Dosing Pumps and motor shall preferably incorporate an integral reduction gearbox drive which shall be totally enclosed and oil bath lubricated. the Gear box shall incorporate the cams for the diaphragm drive and shall provided with filling and drain connections and visible oil level indication.

xiv). Pump efficiencies should be more than 75% and efficiency class of motor should be minimum IE3.

<u>Electromagnetic flow meter:</u>

a) Full bore type Electromagnetic flow meter shall be provided as per approved P&IDs.

The flow meter shall consist of flow sensor (i.e., flow tube), flow transmitter/ flow computing unit and remote flow indicator cum integrator.

b) The electromagnetic flow meter shall be manufactured as per BS EN ISO 6817 standard- measurement of conductive liquid flow in closed conduits, method using electromagnetic flow meters.

c) The flow tube flanges and transmitter housing shall be properly earthed.

d) Flow tube shall have waterproof construction (IP 68) and shall be suitable for installation on underground pipe lines buried directly in the soil and also suitable for above ground pipelines.

e) The transmitter of the flow meter shall be SMART type microprocessor based using digital technology having facilities for configuration of engineering units, flow range and features of memory and self diagnosis.

f) The transmitter shall be mounted separate from the flow tube, connected by a cable.

g) The flow transmitter and flow computation/ evaluation unit shall be mounted in a field mounted metallic field enclosure /cabinet.

h) The electromagnetic flow meter shall have bi-directional measurement feature and with accuracy better or equal to $\pm$ 0.5% of measured value inclusive of linearity, repeatability, pressure effect etc.

i) Flow transmitter/ flow computing unit should be microprocessor based having digital display with flow-rate indications and integrated flow values with the configuration facility from the front face.

j) Material of construction of the wetted parts of flow meters shall be suitable for functioning on treated / raw and chlorinated water applications.

k) Flow tube shall be rugged in construction and shall be suitable for continuous operation.

l) Flow meters shall be suitable for the water turbidity at site during various seasons.

m) The flow meter shall be installed in such a way that it always remains filled with water.

n) To avoid the effects of disturbances in the velocity profile, a straight and uninterrupted run, upstream as well as downstream from the location of the flow meter shall be provided, as required by the flow meter manufacturer.

o) The flow tube shall be installed at a location free from flow turbulence. In order to achieve the same, the flow tubes shall be installed in the pipe section such that straight lengths of pipe without bends or tee connection shall be minimum 5 diameters on upstream and 2 diameters on down streamside.

p) The Contractor shall finalize the exact location of flow transducers in consultation with Purchaser/ Engineer-In-Charge.

q) The flow meter output signals shall contain the data for flow-rate and integrated flow readings.

r) The output signal of the flow meter will be connected to panel mounted Flow Indicator & integrator and PLC.

Pressure Gauge:

a) Pressure Gauges shall be bourdon tube with diaphragm seal type with dial size of minimum 150 mm in diameter and calibrated for the required range. The colour of

dial shall be white. The pointer shall be adjustable & micrometer type. The indicator shall be incorporating with damper and shall have external zero setting mechanism and safety blow out mechanism. The glass shall be shatter proof. The over range protection shall be 25% above maximum pressure. All wetted parts material shall be SS 316.The pressure gauges shall have an accuracy of □1% full scale and weather protection class IP 65.

b) The gauge shall be supplied complete with sensing diaphragm unit, sealing liquid, a pressure indicator and an armored capillary connecting the diaphragm to the pressure indicator.

c) The pressure indicator shall be supported on a rigid support and the capillary shall be well supported to prevent physical damage.

d) Pressure gauges shall comply with IS 3624. Where the gauge is subject to pressure pulsations and/or vibration, it shall be provided with snubber or glycerine filled dial.

e) Unless and otherwise specified the measuring range shall be from 0 to 20 kg/cm² with accuracy of 1% of maximum scale confirming to the IS 3624. The vendor shall submit test calibration certificate along with the pressure indicators.

f) Pressure gauges shall be provided on discharge of each pump and common header of pump discharge.

Pressure Transmitter

a) Pressure Transmitter shall consist of a pressure sensor/transducer/ transmitter and panel mounted digital pressure indicator and any other items required for completing the measuring system. Where the transmitter is subject to pressure pulsations and/or vibration, it shall be provided with snubber.

b) The pressure transmitters shall be designed for operation over 130 % of full range.

Technical Particulars- Pressure Switches:

Sr. No.	Description	Particulars
1	General	
1.1	Make	As per approved
1.2	Item	Pressure Switch
1.3	Fluid	Effluent Water
1.4	Area Classification	Non Hazardous / Hazardous
2	Pressure Sensor	
2.1	Type	Diaphragm / piezoelectric

2.2	Sensor and other wetted parts M.O.C	SS 316
2.3	Process connection	½′ NPT (F)
2.4	Temperature	50 °C Ambient
2.5	Range	As per pump design (Range to be finalized during detailed engineering without any cost implication)
2.6	Accuracy	± 1% of full scale or better
2.7	Range	As per pump design, Adjustable setting over full span and as per P&ID.
2.8	Over range Protection	125% of range
2.9	Body Material of casing	Die Cast Aluminium / non-corrosive
2.10	Set point adjusting scale	Required
2.11	Accessories	Snubber 3 way isolation valve Impulse tubing, fittings All other installation hardware
2.12	Diaphragm Seal M.O.C	SS316
2.13	3 Way Isolation Valve M.O.C	SS316
2.14	Impulse Tube Fitting M.O.C	SS316

Technical Particulars- Level Switch:

Sr. No.	Description	Particulars
1	General	
1.1	Make	As per approved
1.2	Item	Level Switch
1.3	Service	Tank / Sump
1.4	Fluid	Effluent Water
1.5	Area Classification	Non Hazardous
2	Level Switch	
2.1	Type	Displacer
2.2	Flexible Rope MOC	PP / SS316
2.3	Displacer MOC	PP / SS316
2.4	Spring Housing	PP / SS316
2.5	Process connection	Flanged

2.6	Process connection MOC	PP
2.7	Switching Type	Micro switch
2.8	Switching Contacts	2 SPDT, 5A
2.9	Housing material	Die cast aluminium with epoxy coating
2.10	Protection Class	IP65
2.11	Perforated Still well	PP
2.12	Temperature	50 °C Ambient
2.13	Range	As per Sump / Tank design (Range to be finalized during detailed engineering without any cost implication)

8.4 Payment Schedule Civil work			
S. No.	Description	percentage of quoted amount for payment	Amount
1	Design, supply, installation, testing and commissioning of 200 KLD Sewage Treatment Plant (STP) based on MBBR technology as per the details mentioned below to treat the sewage water as per the design conditions. The STP shall consist of the following units and equipment. The volume of the tanks etc. is minimum and can be modified to suit the design parameters without any extra cost. All the RCC tanks of M25 grade should have minimum cement content @ 330 kg/cum and minimum reinforcement @ 130 kg/cum. All the tanks and water retaining structures to be waterproofed inside and outside with suitable durable material as decided by the Engineer- in-charge.		
I.	Complete with excavation, PCC, Centering and shuttering, reinforcement, RCC work, Brick work, plastering from inside using water proofing compound, levelling and dressing of the site, disposal of excess soil and malba generated during construction/ SITC of Plant for all leads:		
1	FILTER FEED TANK of CAPCITY 50 KL in civil with RCC M25 grade with depth not more than 3.00 m, Size as per design/site		
2	All civil work like foundations for STP tank and pumps/ plant i/c required shade for motors/pumps placed outdoor as per design of OEM and approval of Engineer-in- Charge		
3	TREATED WATER TANK of CAPCITY 50 KL in civil with RCC M25 grade with depth not more than 3.00 m, Size as per design/ site		
4.	Anoxic Tank in RCC (M25) construction, Size as per design, Approximate size: 2.0Mx1.4Mx 4.0M Depth – 01 No.		
5.	Panel/pump Room of approx. size 4.0x 5.00 x3.0 Meters with CC floor, Acrylic smooth emulsion paint, acrylic paint exterior grade, flush door, MS windows, Water proofing of roof with brick Koba and required electrical wiring, switches & sockets, lights & fan(s) with Complete testing and approval of engineer- in Charge		
	Total		

8.5 Payment Schedule E&M work			
S. No.	Description	percentage of quoted amount for payment	Amount
1	Designing, Fabrication, Supply, installation, testing, & commissioning of sewage Treatment Plant of capacity 200 KLD based on aerobic, attached growth, moving bed bio reactor (MBBR) technology equipped PVC UV stabilized plastic media attachment for bacteria growth. The STP includes all the tanks accessories, pipes etc. shall be in the scope of this item as per the design condition and details of sewage and effluent mentioned below: Raw sewage parameter at inlet: PH : 6.5 - 8.5 BOD : 250-300 mg/l TSS : 200-450 mg/l COD : 200-550 mg/l Oil & grease: 50-140 mg/l Treated effluent parameter as per PCB norms. pH : 6.5-8.5 BOD : < 10 mg/l TSS : < 10 mg/l COD: <30 mg/l Total Nitrogen ≤ 10 mg/l Toal Phosphorus ≤ 1 mg/l The treated effluent shall be odorless, and other obnoxious matters. The scope of work includes Fabrication, Supplying, Installation, Testing, commissioning with Electrical & Mechanical works & associated civil works including providing general arrangement drawings, sectional drawings with equipment placement, preparation of report/as- built drawings as per pollution control board requirement, arrangement of Raw Sewage & treated sewage for testing. Treated effluent shall be as per norms of NGT/CPCB/local body amended till date or as per standards mentioned above whichever is stringent.		
1.1	Anoxic Mixer		
	Supplying, Installation, Testing and Commissioning of energy efficient 3 blades SS MOC submersible mixer for Anoxic tank, RPM of 80-100 with minimum 3 HP motor suitable for operation on		

	3 phase, 415 Volt, 50 Hz AC supply as required. 1 Job		
1.2	Raw sewage handling pump (1W+1S in Equalization Tank)		
	Supply, installation, testing and commissioning of continuous duty submersible centrifugal non-clogging pumps for sewage handling of 3 HP, 50 mm delivery size, flow 312 LPM @ 19 M Head, 415 volt, 3 phase, 25 mm solid handling along with all interconnecting pipelines, suitable size valves, suction and delivery header of an approved make of suitable capacity, bend and lifting chain arrangement for service & maintenance complete in the sewage collection tank complete etc. as reqd. - 2 Nos		
1.3	Air Blower with motors(1W+1S)		
	Supplying, Installation, Testing and Commissioning of twin type rotary air blowers capable of delivering 300 cum/hr of Air and 0.50 kg/cm2 pressure driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of 7.50 HP/suitable capacity with accessories MS base plate, safety valves, suction filter, NRV, PRV, anti-vibration pad, V – belt, Belt guard, Drive and driven pulleys Suitable for 415 ± 10% volts, 3 phase, 50 Hz AC supply as required.- 2 Nos		
1.4	Air Diffuser		
	Supplying, Installation, Testing and Commissioning of bubble diffuser with Tubular Membrane set of EPDM/Silicon with anti-fungal treatment of size 63mm X 610 mm Long to provide clog free oxygen for Equalization tank, media tank, aeration and sludge holding tank for providing aeration minimum diffuser 30 nos. (size 63mm X750mm or more as per OEM requirement.		
1.5	Piping/ valves and accessories		
	Providing and fixing all piping and isolation control valves, check valves, multiport valves for making the system complete UPVC Schedule 40 and MS pipe Class 'C' pipes including all necessary fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pip/ceiling wall/ ceiling with suitable clamp/support frame ap per site requirement		

	complete as required -1 lot		
1.6	Chlorine/hypo dosing Pump		
	Supplying, installing, testing and commissioning of chlorine dosing system consisting of one HDPE tank of 100 liters capacity for storage of chlorine dosing solution with a positive displacement diaphragm dosing pump having variable flow rate of 0-6 lph- 2 Nos		
1.7	MBBR Tanks		
	MBBR 1 & 2 MS tanks with 3mm FRP/epoxy anticorrosive paint with diffused aeration system and diffusers arrangement for aeration with MBBR media. Overall volume 50 m3 Total Height 2.5 (Meter). The MS Sheet thickness will not be less than 6 MM		
1.8	MBBR Media		
	Supplying, Installation, Testing and Commissioning of MBBR media of PP/PVC self-supporting, cylindrical shaped structure with fins having specific gravity of 0.90- 0.95gm/cm3 for enhanced Dwelling space for bacterial growth installed in Aeration tank as required. SIZE 16 X 22 MM - 1 Job/50 Cum approx		
1.9	Tube Deck/ Secondary Tube Settling Media/ Lamella system		
	Supplying, Installation, Testing and Commissioning of Tube settling media complete with MS tank or lamella system complete with lamella plates and MS tank as per design and approval of Engineer-in- Charge. - 1 Job		
1.10	Filter Feed pump – (1W+1S)		
	Supplying, installation, testing, commissioning of single/multistage Centrifugal type, mono block, self-priming pump having discharge rate of minimum 20 m^3/hr at a head of 30 meters, with CI impeller of an approved make and complete with valves, suction and delivery headers capable of handling clear water complete with TEFC induction motor class B insulation, mounted on a common structural base plate with gun metal isolation cock and suitable anti vibration pads for pump foundation, motor of		

	suitable/3 HP to match with the capacity of the Pressure Feed pump to work on 400/440 volts, 3 phase, 50 Hz AC supply with suitable rpm.- 2 Nos		
1.11	Treated Water Transfer pump – (1W+1S)		
	Supplying, installation, testing, commissioning of single/multistage Centrifugal type, mono block, self-priming pump having discharge rate of minimum 20 m^3/hr at a head of 30 meters, with CI impeller of an approved make and complete with valves, suction and delivery headers capable of handling clear water complete with TEFC induction motor class B insulation, mounted on a common structural base plate with gun metal isolation cock and suitable anti vibration pads for pump foundation, motor of suitable/3 HP to match with the capacity of the Pressure Feed pump to work on 400/440 volts, 3 phase, 50 Hz AC supply with suitable rpm.- 2 Nos		
1.12	Multigrade sand Filter		
	Supplying, installing, testing and commissioning of vertical type Multigrade sand Filter capable of filtering 20 cum/hour of water at prescribed filtration rate of 15 cum/sq.m/hr. The filter shall comprise of MSEP (Mild steel Epoxy paint) shell, suitable for test pressure of 6 kg/sq.cm. complete with required no's of butterfly valves, connected frontal Mild steel heavy class piping, flanges, pedestal, access cover, bed plate with strainers/ lateral pipe distribution, pressure gauge, first charge of filter media as required. (Minimum Size 1000 MM X 1800 MM)-1 Set		
1.12	ACTIVATED CARBON FILTER		
	Supplying, installing, testing and commissioning of vertical type Activated carbon filter capable of filtering 20 cum/hour of water at prescribed filtration rate of 15 cum/sq.m/hr. The filter shall comprise of MSEP (Mild steel Epoxy paint) shell, suitable for a test pressure of 6 kg/sq.cm., Complete with required no. of butterfly valves, connected frontal Mild steel heavy class piping, flanges, pedestal, access cover, bed plate with strainers/lateral pipe distribution, pressure gauge, first charge of filter media having activated carbon etc. as required. (Minimum Size 1000 MM X 1800 MM)- 1 Set		

1.13	SLUDGE RECYCLE PUMP – (1w+1s)		
	Supplying, Installation, Testing and Commissioning of Centrifugal, mono block/screw sludge recycle pump to recycle sludge to Aeration Tank & excess sludge to sludge tank having discharge rate of minimum 6 m3/hrs. at a head of 10-12 meters suitable for operation on 3phase 415 Volt 50 Hz AC supply. - 2 Nos (Make- Roto/Myto)		
1.14	Hydraulic operated Filter press		
	Supplying, installing, testing and commissioning of Hydraulic operated Filter press with 3 HP Motor having 1440 RPM for sludge removal having specification as below: - Size: 18 x18, No. of plates: 17, MOC: PP+MS, Cake Holding Capacity: 120 Liters. Filtration Area: 6.20 M2, Operating Pressure Bar: 4.0-5.0 Tightening Mechanism : Hydraulic		
1.15	INSTRUMENTATION		
	Supplying, Installation, Testing and Commissioning of following complete as required.		
a)	PRESSURE GAUGES		
	Supplying, Installation, Testing and Commissioning of Bourdon / Diaphragm type pressure gauges to Indicate the Pressure having range of 0 to 4 Kg/ cm2 for Pumps & 0 to 1.0 Kg/cm2 for Blowers etc as required.- 1 Job		
b)	LEVEL SWITCHES		
	Supplying, Installation, Testing and Commissioning of level switches to Indicate the low & High level inside the tanks as required - 1 Job		
c)	ELECTRO MAGNETIC FLOW METER (1 For Sewage pump outlet & 1 for ACF outlet)		

	Supplying, installation testing and commissioning of mirco- processor based Electromagnetic Flow meter for 200 KLD plant capacity Suitable for 2-15 m3/hr with flow rate for sewage water with pulsed DC excitation having automatic Zero Correction with Bi-Directional flow measurement, compact instrument version with measuring sensor (primary) and Amplifire integrated in 1 Mechnical unit, IP 65 Protection measuring pipe material SS:304, electrode material SS:316 with 16 Character into 2 Lines LCD 81lphanumeric display for flow rate, totalze, diagnostic messege, flow alarms with high and low flow program, Indicator; enclosure- cast aluminum, weather proof; mounting- field(direct on sensor); supply power 230volt ac etc. complete as required. – 2 Nos.		
1.16	CONTROL PANEL for 200 KLD STP		
	Design, Installation, testing and commissioning of the following integrated, cubicle type, dead front, extensible, sheet steel PLC based with touch screen & in built remote controlling operation control panel anchoring to the foundation. The panel shall be suitable for 500 volts, 50 cycles, 4 wire, supply, quoted price shall include, 25 mm thick rubber mats, wiring, cable tray, control wiring and copper earthing from control panel to various equipment like motor starters pump motors etc. The panel shall have separate compartments for bus bar and cable alleys. the following components and accessories shall be mounted within each control panel.		
a	One No amp's TP incoming MCCB complete with following:		
i.	0-500 volts 96x96 square mm voltmeter with selector switch and fuses 2 SET		
ii.	0-500 amps 96x96 square mm ammeter with 100/5 amps ratio CT,s and selector switch 1 SET		
iii.	Phase indicating lamps with toggle switches.		
iv.	Indication lamps for ON/OFF/TRIP status of motors		
b.	Aluminum bus bar sleeve type, rated at 200 amps for three phase & neutral.		

c.	Outgoing Feeders/Starters of suitable rating with auto manual selector switch, all safety gears such as single-phase preventer, dry run protection, reverse phase, relay with suitable relay range etc. as per standard practice and direction of engineer in charge		
d.	Supplying and laying of XLPE insulated PVC sheathed copper conductor cables of suitable ratings for various pumps/motors in pipe/on wall/on cable tray as per site requirement including necessary terminations etc.as required. -1 Lot		
	Total		

8.6 List of Preferred Makes for Civil Works (as applicable)

Preferred makes of materials to be used in the work are as under. In case of non-availability of these makes, the Engineer-in-charge may allow use of alternative BIS makes of materials in the work. Non-BIS marked materials may be permitted by the Engineer-in-charge. This is a general list of makes. All makes applicable as per Schedule of Quantities must be as per the Institute preferred make.

Sl. No.	Material description	Manufacturer / Brand Name
1.	Ready Mix Concrete	Ultratech Concrete, ACC Ready Mix and RMC India
2.	Cement (PPC/OPC)	ACC, Ultratech, Vikram, Shree Cement, Abuja, JK Cement, Century Cement, Jaypee Cement & Prism Cement.
3.	White Cement	Birla White, J.K. White
4.	Reinforcement Steel	SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd. and JSW Steel Ltd
5.	Water proofing compounds, admixtures, plasticizer, super plasticizer, curing compounds	Fosroc, ROFF/Dr. Fixit (Pidilite Industries), STP Ltd., Sika, BASF, Ardex Endura & Parma Construction Aids Pvt. Ltd.
6.	Integral water proofing compound with cement (for plaster & mortar)	Fosroc: Conplast 421, Dr. Fixit : LW+, Sika: Sikacim, Asian Paint: SmartCare Vitalia & equivalent product of BASF, STP Ltd., Ardex Endura, Perma Construction Aids Pvt. Ltd.
7.	Water proofing com- pound for bathroom/ toilet /balcony & other wet area	Fosroc: Bush Bond, STP Ltd.: Shalicrete, CICO: Tapecrete, Dr. Fixit : Pidifine 2K, Sika : Topseal 107, Asian Paints: Damp Block 2K & equivalent
8.	Crystalline water proofing compound	Product of BASF, Ardex Endura, Perma Con- struction Aids Pvt. Ltd. Fosroc: Bushbond TGP, Dr. Fixit : Dr. Fixit Krystalline, Sika: Sika 101h, Asian Paints: SmartCare & equivalent product of BASF, Ar- dex Endura, STP Ltd., Perma Construction Aids Pvt.
9.	Grouts, Tile Adhesive	Laticrete, STP Ltd., Kajaria, BASF, Perma, Ardex Endura, JK White & Ferrous Crete.
10.	Structural steel	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd. (RINL), JSW Steel Ltd., Jindal Steel & Power Ltd.
11.	Polycarbonate sheet	GE Plastic, LEXAN & MG Polyplast
12.	Profile steel sheet	Ezydeck of TATA, Lloyd Superdeck, JSW, Jindal
13.	Particle board	Action TESA, Merino, Archidply & Orion Doors
14.	Laminates	Action TESA, Greenlam, Century Ply, Merino, Archidply, Virgo & Orion doors
15.	Flush door shutters	Duro, Century, Durian, Archidply, Green Ply, JAYNA (Jain Wood Industries), Jain Doors Pvt. Ltd., GREENPANEL & Orion Doors Note: Only ISI marked flush door shutters to be used.
16.	Fire rated doors	Signum fire protection, Shakti Metdoor, NAVAIR, Promat, Thrislington, Sukri & Bhawani. If

		fire rated glass is integral part of fire rated door than it should be of one of the following makes: Pyroguard, Saint Gobain, Asahi India, Pilkington & Schott
17.	False ceiling system	Armstrong, USG Boral, Saint Gobain, Aerolite, Interarch, Hi- steel of PR Ceiling Products
18.	Plywood / Veneer	Greenply, Century, Merino, Durian, Archidply, GREENPANEL & Orion Doors.
19.	Melamine polish	Asian Paints melamine gold, Wudfin of Pidilite & Timbertone of ICI dulux.
20.	Floor spring & door closer	Godrej, Dormakaba, Dorset & Kich
21.	Aluminum section	Hindalco, Jindal & Indian Aluminium Co.
22.	Anodized aluminum hardware (Heavy Duty)	Kilon, Alualpha, Classic & Ebco.
23.	Clear / Float/Frosted/Toughen Glass/ Refractive glass	Saint Gobain, AIS & Modiguard
24.	Stainless steel railing, Accessories etc.	JINDAL, Dormakaba, Kich, GEZE, Godrej &Hardwyn
25.	SS fittings for doors & window	Jindal, Dormakaba, Kich, Dorset, Godrej, Ozone & Define
26.	Silicon based water re-pellant /weather sealant	GE Plastics, STP Ltd., Dow Corning, Waker, BASF & Pidilite (Dr. Fixit/ Roff
27.	Poly-Sulphide Sealant	Fosroc, STP Ltd., Pidilite (Dr. Fixit/Roff), Sika & BASF
28.	Mosaic tiles/ChequeredTiles	Ultra Tiles, NITCO, Hyper, Mayur & Pavcon,
29.	Glazed Ceramic Tiles	Kajaria, NITCO, Orient Bell, Johnson, Somany, RAK & Varmora
30.	Vitrified Tiles (Antiskid /Matt /Glazed)	Kajaria, NITCO, Orient Bell, Johnson, Somany, RAK, Varmora & Restile
31.	Paver block & Kerbstone	Pavcon, Hyper, Mayur, KK, Power, Sharda & Navya
32.	Cement Based wallputty	Asian Paints, Birla Wall Care, JK, White & Ber- ger
33.	Oil bound washable distemper / dry distemper	Asian Paints (Professional Acrylic Distemper), Nerolac: Beauty Acrylic Distemper, Berger: Bison Acrylic Distemper& Dulux ICI: Maxilite
34.	1st quality acrylic distemper (washable/ ready mix / Low VOC)	Asian Paints (Tractor Aqua Lock Paint), Berger: Commando or equivalent paints of Nerolac & ICI-Dulux
35.	Acrylic emulsion paints	Asian Paints: (Professional Premium Interior, Emulsion Paint),Nerolac: Beauty Gold, Berger: Rangoli Total Care & ICI Dulux: Super Cover, Indigo
36.	Plastic emulsion paint	Asian Paints: (Apcolite Heavy Duty Premium Emulsion Paint), Nerolac: Impression, Berger: Easy Clean & ICI Dulux: 3 in 1
37.	Premium acrylic emulsion paints (Interior)	Asian Paints: (Royale Luxury Emulsion), Nero- lac: Impression, Berger: Silk & ICI Dulux: Vel- vet Touch, Indigo

38.	Textured exterior paint	Asian Paints, Nerolac, Berger Paints, Ultratech Paints &Luxture
39.	Acrylic smooth exteriorpaint	Asian Paints: (Apex/Professional Premium Ex- terior Emulsion), Nerolac: XL, Berger: Weather Coat & ICI Dulux: Weather Shield, Indigo
40.	Premium acrylic smoothexterior paint with sil- icon additive	Asian Paints: Apex Ultima, Nerolac: XL total, Berger: Weather Coat all Guard & ICI Dulux : Weather Shield Max
41.	Synthetic Enamel Paint	Asian Paints: Apcolite Premium Gloss Enamel, Nerolac: Synthetic Hi gloss, Berger: Luxol Higloss & ICI Dulux: Gloss Synthtic enamel.
42.	Cement Primer	Nerolac, Berger (BP white), STP Ltd., Asian (Decoprime WT) & ICI (White primer).
43.	Steel primer (Red Oxide Zinc Chromate Primer)	Asian Paints, Nerolac, Berger & ICI
44.	Wood primer	Asian Paints (wood primer - White/Pink), Burger, ICI & Nerolac
45.	Epoxy paint	Asian Paints, STP Ltd., Nerolac, Berger, ICI, Kansai, & Akzo Nobel
46.	Fire paint	Asian paint, STP Ltd., Akzo Nobel, PROMAT, & JOTUN
47.	GI/MS Pipe	Tata, Jindal (Hisar) & Prakash Surya
48.	GI Fittings	Unik, AVR & Zoloto
49.	HDPE Pipes	Reliance, Jain Pipes, ORIPLAST & Supreme
50.	DI Pipes & fittings	Electrosteel, Jindal, TATA DUCTURA, Kapil Ansh & & Kesoram
51.	UPVC pipe and fittings	Astral, Supreme, Prince, M/s Skipper Ltd, Ashirwad &Prayag Polymers Pvt. Ltd
52.	SW Pipes (BIS approved)	Anand, Parry & Perfect
53.	Centrifugally Cast(Spun) Iron Pipes & Fittings /Hub less pipes& fittings	NECO, BIC,Kapilansh, SKF, Raj Pattern Makers & Founders Pvt. Ltd. or any other ISI marked make
54.	CI Manhole covers,frames & GI Gratings	NECO, BIC, SKF & Kapilansh,
55.	SFRC Manhole covers &gratings	K K Jain & Pragati
56.	CP brass fittings (Superior range)	Jaquar, Grohe & Roka.
57.	CP brass fittings (Nor- mal Range)	ESSCO (by Jaquar), Parryware, CERA, Kerovit (Kajaria), Johnson & Prayag Polymers Pvt. Ltd.
58.	Sanitary ware, fittings & accessories	Kerovit (Kajaria), CERA, Jaquar, Parryware, Hindware & Prayag Polymers Pvt. Ltd.
59.	Mirror glass	Atul, Modi Guard & Golden Fish
60.	CPVC Pipe & fitting	Astral, Superme, Prince, M/s Skipper Ltd., Ashirwad & Prayag Polymers Pvt. Ltd.
61.	Stainless steel sink	Neelkanth, Niralli, Jyna & Prayag Polymers Pvt. Ltd.
62.	FRP doors shutters &frame	Jayna, Fiberways, Jain Doors Pvt. Ltd. & Selected Product Co,

63.	Extruded polystyrene insulation board	Dowcorning, Supreme, Texas & Analco
64.	Gypsum plaster	Ferrous Crete, Gyproc Saint Gobain, Ultra Tech & J K White
65.	Floor hardener	Ironite, Perma, STP Ltd., Ferrok & Hardonate
66.	Modular Expansion Joint	Herculus, Sanfield India Ltd & Vexcolt
67.	Glass Wool	Dow Corning, UP Twiga & Isover
68.	uPVC door/window/ventilator	Fenesta, Komerling, Rheau, Veka, Duroplast, Aluplast & Advika Profiles Pvt. Ltd. (Fabric- ation and installation will be done by profile
69.	uPVC doors and win-dow hardware	Manufacturer or his authorized fabricator). Roto, Dorset, DNV Accado & Kinlong
70.	AAC block Adhesive	UltraTech, Perma, Ardex Endura & Ferrous Crete
71.	PVC Water Tank	Syntex & Vectus
72.	AAC Block	MAX Blocks, UltraTech, HIL & BILTECH ACE & Gravit
73.	Modular Kitchen	Everyday/Hettich/Steel Art Brand Baskets of AISI 304(18/8); Hettich/Hafele Brand Auto closing, Concealed Hinges; DMS/ Dynasty/ Indoline brand shutter
74.	Aluminum shuttering	Knest, S-form, Durand Forms (India) Pvt. Ltd. & Mivan
75.	MS Tubular windows& Pressed Steel door frames	Jangid Engineering Works, AGFUV, Sen Harvic, Navair Delhi & Sukriti Delhi
76.	Dash fasteners /Anchors	Hilti, Bosch & Fischer

8.7 List of preferred Makes for Major Items (E&M) (as applicable)

S.NO	ITEM	APPROVEDMAKES
1.	Actuators	Marsh/ L&T/Rotork/ Rotex
2.	Agitators/ Mixers	Asia LMI / Fibre & Fibre/Remi
3.	Aluminum Open Channel Gate	Jash/ Yashwant/ Upadhyay/ BIC/EPECPL/ Oriental Castings
4.	Ball Valve	Fouress/ BDK/ Audco/ KSB/ Zoloto
5.	Chain Pulley Block	Indef/Reva/W.H.Brady&Co
6.	CI Sluice Gate	Jash/ Oriental Castings/ Indian Valves Private Ltd.(IVC)/ Bharat Industrial Corporation (BIC)/ Kirloskar/ Kalpana
7.	Electric Hoist	Indef/ Reva/ W.H.Brady & Co.
8.	Instrumentation Level Transmitter, Flow transmitter, Level Switch Air Flow Meter Wastewater Flow Meter Pressure Gauge	ForbesMarshall/ EndressHauser/ ABB/ Emerson/ Toshniwal/ Fuji Fitzer Instruments/ George Fitcher/ Toshniwal Forbes Marshall/ Endress Hauser/ ABB/ Emerson/ Toshniwal H.Guru/ Fiebig/ Emerald

9.	Knife Gate Valves	Fouress / BDK/ Jash/Intervalve/ VAGValves / Audco/ IVC
10.	Sluice Valves, NRV, Reflux Valves, Check Valves ,Butterfly Valves	Kirloskar/ Advance/ Energy/ Audco/ Honeywell
11.	Starter for motors	L&T/Schneider/ ABB/Siemens
12.	Cable glands	Braco/ Comet/ Gripwell/ SMI/ Baliga Lighting
13.	Thimbles	Dowells/ Jainson/Braco/HAX
14.	Push buttons	Siemens/ L&T/ C&S/ Schneider
15.	Capacitor for panel	L&T/ APC/ Schneider
16.	Vibration Isolation Pad	Dunlop/ Emerald/ Resistoflex
17.	Welding Rod	Advani / L&T/Esab Superweld
18.	UF membrane	DOW/OLTREMARE/ GE/KOCH
19.	VFD	Danfoss / SIMENS/ SCHNEIDER/ABB/ FUJI/ ALLENBRAD-LY/ALSTAN
20.	Rubber Gasket	CIC/ Varuna/Ashirvad
21.	Nuts and Bolts	Lakshmi/ Unbrako/GS
22.	Gear Box	RADICON/ ELECON/Kirloskar
23.	Screw Pump	ROTO/ Tushaco/ Ramo/ Positive Metering
24.	Geared Motor	Crompton/ REMI /SEW
25.	M.S. Conduit & Accessories (ISI Marked)	BEC/AKG/ STEEL CRAFT/NIC/ Supreme
26.	PVC Insulated FRLS Copper Conductor Wires 1.1 KV Grade (ISI Marked)	FINOLEX/ POLYCAB / HAVELLS / KEI/GRANDLAY
27.	MCB /Isolator /DB/RCCB/ELCB INDUSTRIAL SOCKETS/MCCB	Legrand / Schneider / ABB/ Siemens /L&T
28.	DWC HDPE Pipe (ISI Marked)	Rex / Duraline /Trupati / Gemini
29.	1.1 KV XLPE (Alumium /Cu) Cable (ISI Marked)	POLYCAB / HAVELLS / RR Cable/ KEI/GRANDLAY
30.	MCCBs	Siemens (3VL)/ Schneider (Master Pact – NSX)/ Equivalent Model of Legrand/ ABB/ L&T (D-Sine)
31.	Current Transformers	Automatic Electric/ Kappa/ L&T
32.	Potential Transformer	Automatic Electric/ Kappa/ L&T
33.	Digital Indicating Measuring Instruments/ Multifunction Meters/ Digital Energy Meter	L&T/Conzerv/Automatic Electric /ABB
34.	Selector Switch	L&T/ Kaycee/ Siemens /ABB/ Automatic Electric/ Kappa/ Schneider
35.	Indication Lamp & Push Button/ Relay/Timer/Contactor/	L&T/ Kaycee/ Siemens /ABB/ Automatic Electric/ Kappa/ Schneider
36.	APFC Relays	L&T / Siemens / Schneider / Ducati/ ABB/ Automatic Electric/ Kappa
37.	Cable Trays & Accessories	Venus/ Slotco/ Pilco/BEC
38.	Capacitor (ISI Marked)	Neptune/ Siemens/ L&T /Schneider
39.	Cable Gland/ Lugs/ Thimbles	Commet/ Jainson/ Dowells/ Raychem/Gripwell
40.	PVC CONDUIT	Polycab/AKG/Finolex/Supreme

41.	UPVC PIPE	PRINCE/SUPREME/AKG
42.	Modular Switch Socket/GI box/ Electronic regulator & accessories/ Face plate	Schneider (Livia)/ Legrand (Arteor)/ ABB (Tvisha)/ MK (Element)/ Cabtree (Athena)
43.	M.S/G.I Pipe	Jindal (Hisar)/TATA/SAIL
44.	BLDC Fans /Exhaust Fans/ Wall Mounted Fans	Crompton/ Havells/ Orient/Almonard/USHA
45.	LED Fittings	Trilux/ Phillips/ Regent Lighting/LT

8.8 Preferred Make list of various components of STP

The preffered make of materails/components to be used in the work are as under. The items shall be used as per the preference given below. In case of non availablity of the make at preference 1, The Engineer- in- charge may allow the makes mentioned at preference 2 & 3.

Sr. No.	DESCRIPTION	Preffered Make		
		1	2	3
1	Submersible/Non submersible pumps	KSB	Wilo	Kirloskar
2	SS MOC Submersible Mixer for Anoxic Tank	CRI	Wilo	Kirloskar
3	Air Blower	Everest	AIRVAC	USHA/A1
4	Air Diffuser	MMAqua	JAY/Airfin	NEERAVI/UNIVERSAL
5	Chlorine Dosing Pump	EDOSE	LMI -ASIA	Milton roy
6	Single/multistage monoblock pumping set: FILTER FEED PUMP	Kirloskar	Wilo	KSB
7	Single/multistage monoblock pumping set: Treated water transfer pump	Kirloskar	Wilo	KSB
8	Multi Grade Sand Filter	Ion exchange india ltd/	Thermax	pentair / Aquanomics
9	Activated carbon Filter	Ion exchange india ltd/	Thermax	pentair / Aquanomics
10	Electrical panel	Mile Stone	Advance	Horizon Power
11	Filter press Hydraulic operated with 3 HP Motor having 1440 RPM for sludge removal	Universal	Sachin/Amar Plastic	Vasu/SD AQUA

12	Digital Flow Meter : Providing & fixing of EM type flow meter: The signal from read out shall be 4-20 m. amps to be received as BAS.	E&H	Krone	Fobres Marshal/Aster
13	Sludge recycling pumps	Roto	Myto	Kirlosker
14	Lamella/ Tube settler	Ion exchange india ltd/	Thermax	pentair / Aquanomics
15	MBBR Media	Ion exchange india ltd/	Thermax	MMAqua/Universal

9.0 Testing Charges

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/MAN/410

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI DATED: 22.10.2021

Subject: Addition of new Para 4.10.2 in CPWD Works Manual 2019 regarding testing charges to be borne by contractor.

It has been noticed that following provisions are sometimes being made in the NITs / Agreements by the NIT approving authorities:

"The cost of test shall be borne by contractor/ department in the manner as below:

i. By the contractor, if the result shows that material does not conform to the relevant codes/ specification.
ii. By the department, if the results show that the material conforms to relevant codes/ specification."

It has been decided by the competent authority that testing charges shall be borne by the contractor in all cases. Accordingly following new para is added in CPWD Works Manual -2019.

Existing Provision	Modified Provision
4.10 Preparation of NIT **4.10.2 No Provision**	**4.10 Preparation of NIT** **4.10.2 Testing charges to be borne by contractor** **Following provision shall be incorporated by the NIT approving authority in the NIT:** **All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The NIT shall have list of approved laboratories for testing as approved by ADG / SDG.**

This issues with the approval of competent authority.

(वी.पी. साहु) 22/10/2021
अधीक्षण अभियंता(सी.एंड एम.)

Issued from file No. CSQ/CM/16(1)/2021 e-file 9116587

प्रतिलिपि: सभी केलोनिवि तथा लोनिवि दिल्ली के अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।(केलोनिवि वेबसाईट के माध्यम से).

Figure 1: Modified provisions in CPWD works manual 2019 regarding testing charges to be borne by contractor.

Pre-Contract Integrity Pact

(Applicable for all tenders of the value above Rs.1 Crore)

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on ____ day of the month of _____ 202__.

BY AND BETWEEN

The Indian Institute of Technology Kanpur represented through **"The Registrar"**, having its office located at G.T. Road, Kalyanpur, Kanpur, Uttar Pradesh – 208016 (hereinafter called the **"BUYER",** which expression shall mean and include, unless ***the*** context otherwise requires, his successors in office and assigns) of the **First Party**;

AND

M/s_____a company incorporated under the Companies Act, 2013 through its representative/authorized signatory (insert name and designation of the officer) vide resolution dated _____ passed by the Board of Directors, having its registered office at_____

_____

(hereinafter referred to as **"The Bidder(s)/Contractor(s)"** which terms or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the **Second Party**;

WHEREAS, the Institute/Buyer has floated the Tender bearing No. 41/Civil/D3/2025-26 _____ (hereinafter referred to as **"Tender/Bid"**) and intends to award, under laid down organization procedures, contract(s) for Designing, providing, installation, testing and commissioning of Sewage Treatment Plant (STP) of capacity 200 m3 per day based on MBBR Technology at Hall of Residence no. 14. (Name of the work/goods/ services). The Institution values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and/or Contractor(s).

AND WHEREAS, the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a body corporate and has been established under the provisions of the Institutes of Technology Act, 1961.

AND WHEREAS, in order to achieve these goals, in consultation with the CVC, the Govt. of India, Ministry of Education has appointed Independent External Monitors (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

NOW, THEREFORE, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Section 1: Commitments of the BUYER

1. The BUYER commits itself to take all measures necessary to prevent corruption and to observe the following principles: -

   (a) No employee of the BUYER, personally or through family members, shall in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

   (b) The BUYER shall treat all Bidder(s) with equity and reason during the tender process. The BUYER shall, in particular, before and during the tender process, provide to all Bidder(s) the same information and shall not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in the tender process or the contract execution.

   (c) The BUYER shall exclude from the process all known persons having conflict of interest.

2. If the BUYER obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the BUYER shall inform the Chief Vigilance Officer, IIT Kanpur and in addition shall initiate disciplinary proceedings.

Section 2: Commitments of BIDDERs

1. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

   (a) The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

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(b) The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

(c) The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign entity or associates, if any. Further details as mentioned in the "Guidelines of Indian Agents of Foreign suppliers" shall be disclosed by the Bidders(s)/Contractor(s). Further, as mentioned in the Guidelines all payments made to the Indian Agent/representative have to be in Indian Rupees only.

(d) BIDDERs shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

(e) The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorised government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

(f) The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

(g) The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

(h) The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

(i) The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

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(j) The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

(k) The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

(l) If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender. The term 'relative' for this purpose would be as defined in Section 2(77) of the Companies Act, 2013.

(m) The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

Section 3: Disqualification from tender process and exclusion from future contracts:

1. If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put their reliability or credibility in question, the Institute/Buyer is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of Business Dealing".

2 Any violation of Integrity Pact would entail disqualification of the bidder(s) and exclusion from future business dealings, as per the existing provisions of GFR-2017, PC Act, 1988 and other Financial Rules/Guidelines etc. as may be applicable to the organization concerned.

Section 4: Compensation for Damages:

1. If the Institute/Buyer has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Institute/Buyer is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

2. If the Institute/Buyer has terminated the contract according to Section 3, or if the Institute/Buyer is entitled to terminate the contract according to Section 3, the Institute/Buyer shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5: Previous Transgression

1. THE BIDDER(S) to disclose any transgressions with any other public/government organization that may impinge on the anti-corruption principle. The date of such transgressions, for the purpose of disclosure by the BIDDER(s) in this regard, would be the date on which cognizance of the said transgression was taken by the competent authority. The period for which such transgression(s) is/are to be reported by the bidders

shall be the last **three years** to be reckoned from date of bid submission. The transgression(s), for which cognizance was taken even before the said period of three years, but are pending conclusion, shall also be reported by the BIDDERS.

2. The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6: Equal Treatment of all Bidders/Contractors/Sub-Contractors:

1. In the case of sub–contracting, the principal/main Contractor shall take the responsibilities of adoption of the Integrity Pact by the Sub-contractor.

2. The BUYER will enter into agreements with the identical conditions as this one with all bidders and Contractors.

3. The BUYER will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7: Criminal Charges against violating Bidder(s)/Contractor(s)/Sub-Contractors:

1. If the Buyer obtains knowledge of the conduct of a Bidder, Contractor or Sub-contractor, or of an employee or a representative or an associate of a Bidder, Contractor or Sub-contractor which constitutes corruption, or if the Institute/Buyer has substantive suspicion in this regard, the Institute/Buyer will inform the same to the Chief Vigilance Officer, IIT Kanpur.

Section 8: Sanctions for Violations

1. Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -

   (i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

   (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason, therefore.

   (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

   (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2%. higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection

with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments already made by the BUYER, along with interest.

(vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall• be liable to pay compensation for any loss ·or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Institute for a minimum period of two years, which may be further extended at the discretion of the BUYER.

(viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

2. The BUYER will be entitled to take all or any of the actions mentioned at para 9.1 (i) to (x) of this Pact also on the Commission by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

3. The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

Section 9: Fall Clause

1. The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub-systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

Section 10: Independent Monitors

1. The IEMs have been appointed by the Ministry of Education in consultation with the Central Vigilance Commission. The details of the IEMs are as follows:

   (a) Mr. Ranvir Singh, IEM1@iitk.ac.in
   (b) Mr. P.V.V. Satyanarayana, IEM2@iitk.ac.in

2. The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

3. The Monitor shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

4. Both the parties accept that the Monitor has the right to access all the documents relating to the project/procurement, including minutes of meetings.

5. As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

6. The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

7. The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8. The Monitor will submit a written report to the designated Authority of BUYER within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. A person signing the IP Pact shall not approach the Court while representing the matter to IEMs and shall await the decision in the matter.

10. The IP would be implemented through a panel of Independent External Monitors (IEMs), appointed by the Ministry. The IEM would review independently and objectively whether and to what extent parties have complied with their obligations under the Pact on receipt of any complaint by them from the Bidder(s).

11. Integrity Pact (IP), in respect of a particular contract, shall be operative from the date IP is signed by both parties. The IEMs shall examine all the representations/ grievances/complaints received by them from the bidders or their authorized representatives related to any discrimination on account of lack of fair play in modes of procurement and bidding systems, tendering method, eligibility conditions, bid

evaluation criteria, commercial terms & conditions, choice of technology/specifications etc.

12. For ensuring the desired transparency and objectivity in dealing with the complaints arising out of the tendering process, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an examination, and submit their joint recommendations to the Management. In case the full panel is not available due to some unavoidable reasons, the available IEM(s) will conduct examination of the complaints. Consent of the IEM(s), who may not be available, shall be taken on the records.

13. In the event of any dispute between the management and the contractor relating to those contracts where Integrity Pact is applicable, in case, both the parties are agreeable, they may try to settle dispute through mediation before the panel of IEMs in a time-bound manner. If required, the organization may adopt any mediation rules for this purpose.

    In case, the dispute remains unresolved even after mediation by the panel of IEMs, the organization may take further action as per the terms & conditions of the contract.

    The fees/expenses on dispute resolution shall be equally shared by both parties.

14. If the Monitor has reported to the Management of the BUYER a substantiated suspicion of an offense under the relevant IPC/ PC Act, the Management of the BUYER will take action after examination of the veracity of the intent of the action.

15. The word **"Monitor"** would include both singular and plural.

Section 11: Facilitation of Investigation

1. In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents, including the Books of Accounts of the BIDDER, and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Section 12: Law and Place of Jurisdiction

1. This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER i.e., Kanpur Nagar.

Section 13: Other Provisions

1. The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

2. Changes and supplements, as well as termination notices, need to be made in writing. Side agreements have not been made.

3. In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of sub-contracting, the principal contractor shall be solely responsible for the adherence to the provisions of IP by the sub-contractor(s).

4. Issues like Warranty/Guarantee etc. shall be outside the purview of the IEMs.

5. This Integrity Pact is deemed as part of the contract.

Section 14: Validity

1. The validity of this Integrity Pact shall be from the date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including the warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

2. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement with their original intentions.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals and executed this Integrity Pact as of the date/month/year first above written in the presence of following witnesses:

For & on behalf of
The Indian Institute of Technology Kanpur
(First Party)
Signed, Sealed and delivered by

Name: **Vishwa Ranjan**
Designation: **Registrar,**
Address: **IIT Kanpur**
(Authorized Signatory)

विश्व रंजन / Vishwa Ranjan
कुलसचिव / Registrar
भारतीय प्रौद्योगिकी संस्थान कानपुर
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
कानपुर - 208 016 (उ.प्र.) भारत
KANPUR - 208 016 (U.P.) INDIA

For & on behalf of
The M/s .....
(Second Party)
Signed, Sealed and delivered by

Name: .....
Designation: .....
Address: .....
(Authorized Signatory vide resolution dated ..... passed by the Board of Directors)

***In the presence of Witness*:**

1. .....(Indenter)
2. .....

1. .....
2. .....