WATCO

OFFICE OF THE MANAGING DIRECTOR,
GROUND FLOOR, UNNATI BHAWAN, SATYANAGAR,
BHUBANESWAR, ODISHA – 751007.
Telefax: - +91-674-2571444
E-mail watcoodisha@gmail.com

DETAILED TENDER CALL NOTICE (DTCN)
FOR
"DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS".

ESTIMATED COST: Rs.609.87 Lakh

Bid Identification No. WATCO (W)- 21(3)/2026-27 Dtd. 16.10.2026

COST OF TENDER PAPER: 10,000/- + GST @ 18%
(Rupees Ten Thousand plus eighteen percent GST) only

OCTOBER-2026

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SECTION-1

WATER CORPORATION OF ODISHA
OFFICE OF THE MANAGING DIRECTOR,
GROUND FLOOR, UNNATI BHAWAN, SATYANAGAR,
BHUBANESWAR, ODISHA – 751007.
Telefax: - +91-674-2571444
E-mail – watcoodisha@gmail.com

NOTICE INVITING TENDER (NIT)

NATIONAL COMPETITIVE BIDDING THROUGH e-Procurement

Bid Identification No- WATCO (W)- 21(3)/2026-27 Dtd. 16.10.2026

The **Managing Director, WATCO, Bhubaneswar** on behalf of Governor of Odisha invites **Percentage Rate Bids** through **e-Procurement** in conformity with the terms and conditions of the Detailed Tender Call Notice (DTCN) in **TWO BID SYSTEM** (Part-I: General & Technical Bid and Part-II: Price Bid) from **"The Construction Firms, Companies having "A" Class or "Special" Class Contractors license/ "A" Class or "Special" Class Contractor"** registered with the Odisha State Government and Contractors of equivalent grade/class registered with Central Government/ any other State Government/ MES/ Railways having experience and expertise in Design, Construction, Testing & Commissioning of Similar Type of Works and fulfilling minimum eligibility criteria as stated hereunder and other detailed qualifying requirements given in the DTCN to be eventually drawn up in the **Standard P1 Contract Form of Odisha PWD**. The bid should be submitted on-line in the website ***www.tendersodisha.gov.in*** by eligible class of contractors. The bidders should have the necessary Portal Enrolment (with his own Digital Signature Certificate). Contractors registered elsewhere but not registered with Government of Odisha can also participate in the e-procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of work / signing of the Agreement as per prevalent registration norms of the State.

Sl. No.	Name of the work	Value of Work (Rs. Lakh)	Bid Security (EMD) (Rs. Lakh) (Online/BG)	Class of Contractor	Period of Completion	Cost of Bid Document + GST @ 18% (In Rs.) (Online)
1	2	3	4	5	6	7
1.	DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS	**609.87**	**6.10**	**The Construction Firms, Companies having "A" Class or "Special" Class Contractors license/ "A" Class or "Special" Class Contractor**	**12 (Twelve) Months**	**11800/-**

2. Mode of Submission of tender: Tender should be submitted online in **www.tendersodisha.gov.in**.

3. The bidders desirous to participate in bidding must possess compatible Digital Signature Certificate of Class-II or Class-III and should follow the changes/ modifications/ addendum to DTCN if any.

4. The original documents i.e., Affidavits, Undertakings & Certificates as per the Schedules and Annexure of DTCN that have been uploaded by the bidder in the e-tender website should be submitted for verification during evaluation. The Technical Bid will be opened on **Dt.19.11.2026 at 12:30 PM.**

5. **Critical Dates:-**

SN	Description	Critical Dates
(i)	Period of availability of tenders on-line :	**From 5:00 PM of Dt.28.10.2026 to 5:00 PM of Dt. 17.11.2026**
(ii)	Last date & time of seeking clarification :	**5:00 PM of Dt. 06.11.2026**
(iii)	Las date & time of Submission of BG hardcopy :	**5:00 PM of Dt.18.11.2026**
(iv)	Last date & time of bidding on-line :	**5:00 PM of Dt. 17.11.2026**
(v)	Date & time of opening of Technical Bid :	**12:30 PM of Dt. 19.11.2026**

6. **Minimum Eligibility Criteria:-**

i) The Construction Firms/ Companies having **"A" Class or "Special" Class** Contractor's license/ **"A" Class or "Special" Class** Contractor should have **Successfully Completed and commissioned work(s) of similar nature** (*with or without ancillary works*) valuing not less than **Rs.182.96 Lakh (30% of the estimated cost put to tender)** in any one year during the last 5 (five) years in any Govt. Sector / Public Sector Undertakings. **However, any one such completed similar nature of work in the year under consideration must cover at least construction, testing, and commissioning of one Sewage Treatment Plant (STP)/Effluent Treatment Plant (ETP)/Septage Treatment Plant (SeTP).** The firm shall have to submit the performance certificate of the works constructed by them for satisfactory performance from appropriate authority i.e., not below the rank of Executive Engineer /Superintending Engineer /equivalent. Weightage @ 10% per year shall be given on the value of the completed work in the preceding years. *However, the Work(s) completed in the current year shall also be considered without any weightage factor on production of certificate from competent authority.*

ii) The Construction Firms, Companies having **"A" Class or "Special" Class** Contractors license**/ "A" Class or "Special" Class Contractors** should have annual financial turnover of not less than **Rs.243.95 Lakh (40% of the estimated cost put to tender)** in any one year in **Civil Construction Works** during last 5 (five) years and the turnover need to be certified with valid UDIN No by a Chartered Accountant. Weightage @ 10% per year shall be given on the annual turnover of the preceding years.

7. Escalation Factor (On Compound basis):

Following enhancement/compounding factors will be used for the costs of works executed and the financial figures to a common base value.

Year before	**Multiplying factor**
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61

8. To arrive at the value of completed works, value of multiple contracts executed in a financial year shall be considered. For this purpose, the completion certificates given by the authorities for any one financial year shall be considered. In case value of works executed in any one financial year is not available in the certificates, the same shall be calculated on a pro-rata basis, considering that the total completed value and the time schedule in days.

9. The Bidder should have not been black listed by any Govt./ Govt. Undertaking on the bid submission date. **Self-declaration certificate** by Bidder in the form of Affidavit is to be submitted.

10. All Bidders/Contractors are bound to register themselves in CDMS Portal developed by State Procurement Cell, Odisha, Bhubaneswar. However, the successful out State Bidders those who are not registered in CDMS Portal, Odisha, are bound to register themselves before signing of agreement.

11. The bid for the work shall remain valid for a period of **120 (One Hundred Twenty) days from the date of opening of Price Bid**. If any Bidder/ Tenderer withdraws his bid/ tender before the said period or makes any modifications in the terms and conditions of the bid, the earnest money shall stand forfeited.

12. Bids from Consortium/ Unincorporated Joint Venture is not acceptable.

13. Other details can be seen in the bidding documents, which is available in website ***www.tendersorissa.gov.in*****.**

14. All amendments, time extension etc. will be uploaded in the website only. Bidders should regularly visit the above website to keep themselves updated.

15. Authority reserves the right to reject any or all the tenders without assigning any reasons thereof.

16. **Name and Address of the Officer Inviting Bids**

OFFICE OF THE MANAGING DIRECTOR, WATCO
Ground Floor, Unnati Bhawan, Satya Nagar,
Bhubaneswar-751007, Odisha, India
Telefax: - +91-674-2571444
E-mail – watcoodisha@gmail.com

Sd/-
Managing Director
WATCO, Bhubaneswar.

CHECK LIST TO BE FILLED UP BY THE BIDDER

Name of the Work: "DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS".

Sl. No	Particulars	Reference to Clause no.	Whether furnished		Reference to Page no.
			Yes	No	
01.	Cost of Bid Document + **GST @ 18% = Rs.11,800/- (Online remittance)**	As per NIT			
02.	Bid Security (EMD) for **Rs.6.10 lakh (Online remittance)/BG in the form of Schedule-M**	Clause 23.1, Section 2(B) of DTCN			
03.	Copy of valid Contractor's Registration Certificate	Clause (a)v., Section 2(A) of DTCN			
04.	Copy of valid GST Registration Certificate / GSTIN	Clause (a)iii., Section 2(A) of DTCN			
05.	Copy of PAN Card	Clause (a)iv., Section 2(A) of DTCN			
06.	No Relationship Certificate	Clause (a)vii., Section 2(A) of DTCN			
07.	Self-declaration certificate by the bidder in the form of Affidavit for **No Criminal Case pending at the time of Biding**	Clause 6, Section 2(B) of DTCN			
08.	Self-declaration certificate by the bidder in the form of Affidavit- declaring that in last 3 financial years they have not applied for/ are undergoing Corporate Debt Restructuring (CDR) /Strategic Debt Restructuring (SDR) or facing recovery proceedings from Financial Institutions or those are facing Sickness and under consideration of Board for Industrial and Financial Reconstruction (BIFR)	Clause 8.4, Section -2(B) of DTCN			
09.	Self-declaration certificate by the bidder in the form of Affidavit- for not being blacklisted by any Govt./ Govt. Undertaking	As per NIT			

10.	Letter for Submission of Tender	Section -2(D) of DTCN			
11.	Tender Declaration	Section -2(E) of DTCN			
12.	Information Regarding Tenderer	Section -3 of DTCN			
13.	Declaration by the tenderer	Section -4 of DTCN			
14.	Work schedule in the form of Bar Chart	Clause 7.14, Section-7 of DTCN			
15.	Structure & Organization	Schedule-A			
16.	Financial Statement	Schedule-B			
17.	List of Tools, Plants & Equipments	Schedule-C			
18.	Works Experience -	Schedule-D			
(a)	List of similar works executed during last 5 years	Schedule-D (Item-3)			
(b)	Works in hand-Approximate value of existing commitment and ongoing works.	Schedule-D (Item-4)			
(c)	Bid Capacity Calculation Sheet	Schedule-D (Item-5)			
19.	Information regarding current litigation, debarring / expelling of the tender or abandonment of the work by the tenderer	Schedule-E			
20.	Electrical License/ MoU with Electrical Contractor for execution of electrical works	Schedule-F			
21.	Affidavit / Declaration	Schedule-G			
22.	Solvency Certificate from a Schedule Bank	Schedule-H			
23.	Bank Guarantee towards Bid Security (If allowed)	Schedule-M			

CONTRACT DATA

A. GENERAL INFORMATIONS

<table>
<tr><th>SN</th><th>Item</th><th>Details</th></tr>
<tr><td>1</td><td>Bid Identification No.</td><td>WATCO (W)- 21(3)/2026-27 Dtd. 16.10.2026</td></tr>
<tr><td>2</td><td>Name of the Work</td><td>“DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS”.</td></tr>
<tr><td>3</td><td>Officer inviting tender</td><td>MANAGING DIRECTOR, WATCO, Bhubaneswar</td></tr>
<tr><td>4</td><td>Accepting Authority</td><td>Managing Director /Director (Project) WATCO / Vice Chairman, WATCO/ Board of Directors, WATCO</td></tr>
<tr><td>5</td><td>Estimated Cost</td><td>Rs.609.87 Lakh</td></tr>
<tr><td colspan="3">B. BID INFORMATION</td></tr>
<tr><td>6</td><td>Intended completion period/Time period assigned for Completion</td><td>12 (Twelve) Calendar Months</td></tr>
<tr><td>7</td><td>Last Date & time of submission of Bid</td><td>5:00 PM of Dt. 17.11.2026</td></tr>
<tr><td>8</td><td>Cost of Bid Document (To be Remitted Online)</td><td>Rs.10000.00 + 18% GST</td></tr>
<tr><td>9</td><td>Bid Security (EMD) (To be Remitted Online/ BG)</td><td>Rs.6.10 Lakh</td></tr>
<tr><td>10</td><td>Additional Performance Security</td><td>In the shape as mentioned at Clause 23 of Section-2(B)</td></tr>
<tr><td>i)</td><td>Amount</td><td>
<table>
<tr><th>Sl No.</th><th>Incremental Basic of Additional Performance Security.</th><th>Additional Performance Security to be deposited by the Successful bidder</th></tr>
<tr><td>i</td><td>Where the accepted bid price is such that the ROPL is up to (-) 10%.</td><td>No Additional Performance guarantee / Security percentage is required.</td></tr>
<tr><td>ii</td><td>Where the accepted bid price is such that the ROPL is below (-) 10% but not below (2) 20%.</td><td>The additional performance security percentage shall be incremented by 0.2% for every percentage of ROPL below (-) 10%; for avoidance of doubt, if ROPL is (-) 13%, then APS shall be @ 0.2% x</td></tr>
</table>
</td></tr>
</table>

				(13-10) = 0.6% of accepted bid price.
		iii	Where the accepted bid price is such that the ROPL is below (-)20% but not below : (-)30%.	The additional performance security percentage shall be incremented by 0.3% for every percentage of ROPL below (-)20% in addition to 2% of the accepted bid price; for avoidance of doubt, if ROPL is (-)24%, then APS shall be @ 0.3% x (24-20) +2% = 1.2% + 2% = 3.2% of accepted bid price.
		iv	Where the accepted bid price is such that the ROPL is below (-) 30% or more.	The additional performance security percentage shall be incremented by 0.5% for every percentage of ROPL below (-) 30% in addition to 5% of the accepted bid price; for avoidance of doubt, if ROPL is (-) 37%, then APS shall be @ 0.5% x (37-30) + 5% = 3.5% + 5% = 8.5% of accepted bid price.
		ROPL: - Rounding Off of Percentage Less (ROPL)		
		As per Govt. of Odisha, Works Department OM No.17941/W, Bhubaneswar Dt.08.10.2026 on Amendment of Codal & Contractual Provisions.		
ii)	Pledged in favour of	**General Manager, WATCO Division, Kataka.**		
iii)	Payable at	**Kataka**		
iv)	Type of Instrument	**As specified in the Bid document**		
11	The Financial years of last five years	**2021-22 to 2025-26**		
12	Bid validity period	**120 days from the date of opening of Price Bid**		
13	Currency of Contract	**Indian Rupees**		
14	Language of Contract	**English**		
C. Agreement Information				
15	Execution of agreement	**The successful bidder is to execute the agreement with General Manager, WATCO Division, Kataka representing Managing Director, WATCO, Bhubaneswar.**		

SECTION- 2(A)
DETAILS OF THE DOCUMENTS TO BE FURNISHED FOR ONLINE BIDDING

(a) Scanned copies of the following documents to be up-loaded in appropriate place in PDF format in the website **www.tendersodisha.gov.in**.

i. **Remittance of Cost of Bid Document (Online).**
ii. **Remittance/submission of Bid Security (EMD) Online/ in shape of BG**
iii. **GST Registration Certificate / GSTIN**.
iv. PAN Card.
v. Contractor's Registration Certificate.
vi. Affidavit regarding correctness of certificates.
vii. Affidavit regarding no relation certificate.
viii. Work experience certificate from the authority not below the rank of Executive Engineer/ Superintending Engineer.
ix. Annual Turnover Certificate from Chartered Accountant for last five financial years with break-up of **Construction Works & Total Works** for each financial year.
x. Section-2(D), Section-2E, Section-3 & Section-4
xi. Any other relevant required document, if any. (Refer Checklist)

(b) Scanned Copies of the Certificates/Formats showing details of information to be furnished as per the enclosed formats should be uploaded in appropriate place after converting the same to PDF.

Schedule A - Structure & Organisation.
Schedule B - Financial statement
Schedule C - List of tools, plant & equipment proposed to be deployed in the work.
Schedule D - Work experience
Schedule E - Information regarding current litigation/debarment etc.
Schedule F - Information on Electrical License/Collaboration.
Schedule G - Declaration.
Schedule H - Solvency Certification from Bank
Schedule I - Any other information.
Schedule J - Format for Seeking Clarification
Schedule K - Form of Bank Guarantee for APS
Schedule L - Project Completion
Schedule M - Form of Bank Guarantee for Bid Security

(The details of the Format is enclosed in the DTCN)

(c) Uploaded documents of valid successful bidders will be verified with the original before acceptance of offer.

(d) DTCN is not to be uploaded by the bidder. The bidder has to only agree / disagree on the conditions in the DTCN. The bidders, who disagree on the conditions of DTCN, cannot participate in the tender.

(e) Cost of Bid Document will be remitted on online mode by the Bidder, falling which the bidder will be disqualified

(f) Cost of Bid security (EMD) will be remitted on online mode/ through BG by the Bidder, falling which the bidder will be disqualified

SECTION- 2(B)
INSTRUCTIONS TO BIDDERS
A. GENERAL

1. **Definitions:**

(a) "Employer" means the **WATCO, BHUBANESWAR** a Government of Odisha owned company represented by the **MANAGING DIRECTOR** or his authorized representative with whom the selected Bidder signs the contract for the services.

(b) "Contractor" / Bidder / Firm / Engineer Firm / Company carry the same meaning through out the DTCN and Contract.

(c) "Contract" means the contract/ agreement signed by the parties along with all attached documents listed in the DTCN (Tender Document Part -I & II).

(d) "Data Sheet" means such part of the Instructions to Contractor as are used to reflect assignment conditions and evaluation of the bid.

(e) "Day" means a calendar day.

(f) "Government" means the Government of Odisha.

(g) "Instructions to Bidders (Section-2(B) of the Part-I of DTCN) means the document which provides all information needed to prepare their proposals.

(h) "NIT" (Section-1 of the DTCN) means the Letter of Invitation being sent by the Employer.

(i) "Personnel" means professionals and support staff provided by the Contractor and assigned to perform the services in full or in any part thereof.

(j) "Proposal" means the Technical Proposal (Tender Document Part I – General & Technical Bid) and the Financial Proposal (Tender Document Part II – Price Bid).

(k) "DTCN" means the Detailed Tender Call Notice prepared by the Employer for the selection of contractor which includes Part-I & II.

(l) "Govt". means Govt. of Odisha or Govt. of India as the case may be.

2. **Introduction / Selection Procedure:**

The Employer named in the Data Sheet will select a contract firm to execute the work as described in the scope of work and in the Data sheet.

The Contractor shall bear all costs associated with the execution of the work on **Percentage Rate Bid.** The Employer is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to contract award without thereby incurring any liability to the Contractor.

3. **Location of the Project:**

The place of action is at **Shishu Bhawan Hospital** of **Kataka** District in the **State of Odisha.**

4. Source of Funding:

The work will be funded by **WATCO**

5. **Eligibility:**

5.1. A Bidder shall be deemed to have the nationality of India.

5.2. A Bidder shall be **Construction Firms, Companies having "A" Class or "Special" Class Contractors license/ "A" Class or "Special" Class Contractor** registered with the Odisha State Government and Contractors of equivalent grade/class registered with Central Government/ any other State Government/ MES/ Railways.

5.3. Registered Contractor of **"A" Class or "Special" Class Contractor** of Odisha State PWD or equivalent class of CPWD / Railway / MES / Central or other State Govt. Proof of registration is to be furnished along with the tender.

6. **History of Litigation and Criminal Record:**
If any criminal cases are pending against the Contractor (him/her/partners) at the time of submitting the tender, then the tender shall be summarily rejected.

7. The Contractor has to furnish a declaration that no near relatives are working in the cadre of an Assistant Engineer/ Assistant General Manager and above in the Organisation of Public Health Engineering Organisation (PHEO) of State of Odisha.

8. **Other Requirements:**

8.1. Even if the Contractor meets other criteria, his tender shall be summarily rejected if he is found to have misled or made false representation in the form of any of the statements submitted in proof of the eligibility and qualification requirements.

8.2. The tender shall also be summarily rejected if he has a record of performance such as absconding from work, works not properly completed as per contract, inordinate delays in completion, financial failure.

8.3. In addition to the above, even while executing the work, if it is found that he produced false / fake, certificates in his tender, he will be blacklisted.

8.4 The bidders who have in last 3 financial years applied for / are undergoing Corporate Debt Restructuring (CDR)/Strategic Debt Restructuring (SDR) or facing recovery proceeding from Financial Institutions or those are facing Sickness and under consideration of Board for Industrial & Financial Reconstruction (BIFR) are not eligible for qualification. Self declaration Certificate by the bidder in the form of affidavit is to be submitted.

9. **Original Certificates:**
Original documents/certificates shall be produced as and when required to verify the copies of statements and other information furnished along with tender. Failure to produce original documents in time will lead to disqualification.

10. **Cost of Tendering:**
The Contractor shall bear all expenses associated with the preparation and submission of his tender **Managing Director, WATCO, Bhubaneswar** shall in no case be responsible or liable for reimbursement of such expenses.

11. **Site Visit:**
The contractor is advised to visit and examine the site at **Shishu Bhawan Hospital** in the district of **Kataka** and its surroundings and obtain for himself all information that may be necessary for preparing the tender and quoting rates at his cost and responsibility.

B. TENDER DOCUMENTS

12. **Tender Documents :**

12.1. A set of Tender Documents comprising of the General & Technical Bid and the Price Bid includes the following together with all Addenda thereto, which may be issued in accordance with **Clause 2(B)13 and Clause 2(B)14**.

PART- I: GENERAL & TECHNICAL BID

Section	Description
DTCN Part – I: General & Technical- Bid	
Section-1	Notice Inviting Tender (NIT)
	Check List to be Filled up by the Bidder
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DTCN Part – II: Price Bid/BoQ	

12.2. The Contractor is expected to examine carefully all instructions, terms of reference, tender conditions, forms, appendices to tender, addenda in the tender documents. Failure to comply with the requirements of tender submission will be at the contractor's own risk.

13. **Clarification of Tender Documents:**
The Contractor shall carefully examine the tender documents and be fully informed of all the conditions and matters, which may in any way affect the work or the cost thereof. Should a Contractor find any discrepancy in or omission from the specification or any other of the tender documents or should he be in doubt as to their meaning, he should immediately address a clarification online **as per format at Schedule-J**

14. **Amendment of Tender Documents:**

14.1. At any time prior to the dead line for submission of tenders, **Managing Director, WATCO, Bhubaneswar** may for any reason, whether at its own initiative, modify the tender documents by issuing an Addendum.

14.2. Such addenda will be notifying in the website and will be binding upon them.

14.3. In order to afford prospective Contractor reasonable time to take such addenda into account in preparing their tenders, **Managing Director, WATCO, Bhubaneswar** at his discretion, may extend the dead line for the submission of tenders, if necessary.

C. PREPARATION OF TENDER DOCUMENT

15. **Language of the Documents:**
All documents relating to the Tender shall be in the English language.

16. **Documents Comprising the Tender:**

(a) General & Technical Bid (Part-I of Tender Document)

(b) Price Bid (Part-II of Tender Document)

(c) All documents stipulated elsewhere in the DTCN.

17. **Sufficiency of Tender:**
The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the services to be provided and of the prices quoted in the financial bid, which shall cover all his obligations under the contract and all matters and things necessary for the successful accomplishment of the work.

18. **Preparation of Proposal:**

18.1. The Proposal (see Section-2(B) Clause 1(J)) as well as all related correspondence exchanged by the employer & the Contractor shall be written in the language specified in the Data Sheet.

18.2. In preparing the proposal, the Contractor is expected to examine in detail the documents comprising the DTCN. Material deficiencies in providing the information requested may result in rejection of a proposal.

18.3. **Site Inspection by tenderer**.
The tenderer shall inspect the site at his own cost and shall satisfy himself with regard to the nature and extent of the work involved, the actual site conditions, existing facilities and shall collect any other information which may be required before submitting the tender. Any further data required during execution of the work / scheme shall be ascertained by the contractor at his own cost.

19. **Technical Proposal Format and Content:**

The Contractor should have sufficient man power to execute & complete the work within the time schedule. He should have sufficient financial background / work experience with specification in construction of water supply scheme / tools, plant, machinery and equipment required for execution of the work / free from litigation / have good working record of completion of the works in time. It may be noted that the contractor should satisfy the minimum eligible criteria for award of Contract. The Technical Proposal shall provide the information indicated in the following paragraphs (clause 2(B)19.1 to 2(B)19.12) using the attached Standard Forms. A page is considered to be one printed side of A4 or letter size paper.

19.1. The Contractor has to furnish the names of the professional staff to be deployed in the work with their qualification / experience in **Scheduled- 'A'.**

19.2. A description of the approach, methodology and work plan for performing the assignment.

19.3. The list of the tools, plant, machinery & equipment to be deployed in the work as per **Schedule- 'C'.**

19.4. Work completion certificate from an Engineer not below that the rank of General Manager/General Manager equivalent in support of the work executed as furnished in **Scheduled- 'D'.**

19.5. Bio-data of the professional staff furnished need be signed by the staff themselves or by their authorized representatives.

19.6. Annual financial turn over of the last **5 (Five)** years shall be Audited accounts of the firm/Contractor and certified by Chartered accountant and to be indicated in **Schedule- 'B'.**

19.7. Solvency Certificate from a Scheduled Bank **(Schedule- 'H).**

19.8. **GST Registration Certificate / GSTIN.**

19.9. Copy of PAN Card.

19.10. Copy of Contractor's Registration Certificate.

19.11. General Power of Attorney if required in favour of the authorised signatory.

19.12. Other information as required.

19.13 The Technical Bid shall not include any financial information related to the Price Bid. **Technical Bid containing financial information related to the Price Bid shall be declared non responsive.**

20. **The Financial Proposal:**

20.1. The Contractor shall quote his rates on prescribed form of the Bill of Quantities (BoQ) already supplied in the Tender.

20.2. The offer shall be inclusive of all costs associated with the assignment including cost of all materials to be utilized in the work, cost of T&P, consumables, infrastructure backup etc. The offer shall also be inclusive of all duties, levies, taxes of the Central and State Govt. Further it shall also include all other expenses incidental thereto for successful accomplishment of the assignment in conformity with the DTCN.

20.3. The contractor should make realistic assessment of the exhaustive nature of work and the extent of expert technical and managerial inputs and resources required to carry out the work diligently to complete the work within the stipulated time and quote their offer accordingly.

20.4. The rate quoted by the firm shall be firm.

21. **Tender Validity:**

21.1. The proposal must remain valid for **120 (One Hundred Twenty) days** from the date of opening of price bid.

21.2. A Contractor agreeing to the request of extending the validity period of the proposal will not be required or permitted to modify his tender, but will be required to extend the validity of his EMD.

22. **Authorisation, Corrections, Erasures etc. in Tender Papers:**

22.1. The tender document shall be digitally signed by a person duly authorized to do so. Proof of authorization shall be furnished in the form of a certified copy of Power of Attorney, which shall accompany the tender.

22.2. The completed tender shall be submitted without any alterations, inter-relations or erasures except those which accord with instructions given by the **Managing Director, WATCO, Bhubaneswar.**

22.3. Only one tender shall be submitted by a contractor. Submission of bids through e-Procurement portal the system shall consider only the last bids submitted through portal.

23. **ISD / SD / Additional Perform Security:**

"Security for the due fulfilment of a contract should invariably be taken. The security may be taken in shape of N.S.C./ Post Office Savings Bank Account/ Post Office Time Deposit Account/ Kisan Vikas Patra/ Bank Guarantee **(Schedule-K)** in favour of the **General Manager, WATCO Division, Kataka from** any Nationalized Scheduled Bank in India counter guaranteed by its local Branch at **Kataka /** Bank Guarantee **(Schedule-M)** in favour of the Managing Director, WATCO, Bhubaneswar from any Nationalized Scheduled Bank in India counter guaranteed by its local Branch at Bhubaneswar/e-Bank Guarantee executed on the National e-Governance Services Limited (NeSL) Digital Document Execution Portal/ Insurance Surety Bond issued by an Insurance Company authorized by the Insurance Regulatory and Development Authority of India (IRDAI).***(As per the office memorandum No.WORKS-FA-MISCSB-0003-2026-4909/W., dt.12/03/2026***).

As per clause No.4(Exclusion) Odisha procurement preference policy for Micro Small Enterprises of Odisha circulated vide Notification No.566/MSME Dated.24.01.2024 the OSME policy is not be applicable to procurement of service including work contract. Hence, the firm registered under MSME/OSME required to furnish EMD during participation.

23.1. **Earnest Money Deposit:**

The Earnest Money Deposit (**EMD**) of **Rs.6.10 Lakh shall be remitted on online mode/through BG (Schedule-M)**. Tenders without EMD or with Part EMD or EMD in any other form shall not be accepted and such tenders shall be out rightly rejected. Exemption of EMD is not applicable to the MSME registered firms/units.

23.2. **Return of EMD:**

The Bank will remit the **Earnest Money Deposit on submission/ cancellation of bids** to respective bidder's accounts as per direction received from TIA through e-procurement system. (as per the Appendix-II of DTCN).

The earnest money given by other **one parties (L_2)** except one whose tender is accepted shall also be refunded within 15 (Fifteen) days of the acceptance of the tender (as per the Appendix-II of DTCN).

EMD shall also be returned to the unsuccessful bidders of General & Technical Bid (Part–I of tender documents) after finalisation of its evaluation (as per the Appendix-II of DTCN).

23.3. **Initial Security Deposit:**

The successful Tenderers, after receipt of formal order shall have to furnish Initial Security Deposit (ISD) equal to **2% (two percent)** of the accepted value of the tender in shape as mentioned at Clause-23 within **7(seven) days** of receipt of intimation failing which their tender shall be cancelled with the forfeiture of EMD.

aps

23.4. **Additional Performance Security:**

Additional Performance Security (APS) shall be obtained from the bidder when the bid amount is less than estimated cost put to tender. In such an event, only the successful bidder who has quoted less bid price/rates than the estimated cost put to tender shall have to furnish the exact percentage **(as per following table) in the shape as mentioned at Clause 23** within **7(seven) days** of issue of Letter of Acceptance (LoA) (by e-mail) to the successful bidder otherwise the bid of the successful bidder shall be cancelled and the Earnest Money Deposit/Bid Security shall be forfeited. Further proceeding for Blacklisting shall be initiated against the Bidder. In pursuance to, Works Deptt. OM No.2375/W, dt.03/03/2022, Additional Performance Security (APS) shall be refunded immediately on successful completion of the work within Seven (07) days of issuance of Completion Certificate/ Provisional Completion Certificate.

Government of Odisha vide ***Works Department Office Memorandum No.17941/W Dt. 08.10.2026*** is pleased to fix the following rate of **Additional Performance Security.**

Sl No	**Incremental Basic of Additional Performance Security.**	**Additional Performance Security to be deposited by the Successful bidder**
i	Where the accepted bid price is such that the ROPL is up to (-) 10%.	No Additional Performance guarantee/ Security percentage is required.
ii	Where the accepted bid price is such that the ROPL is below (-) 10% but not below (2)20%.	The additional performance security percentage shall be incremented by 0.2% for every percentage of ROPL below (-) 10%; for avoidance of doubt, if ROPL is (-) 13%, then APS shall be @ 0.2% x (13-10) = 0.6% of accepted bid price.

iii	Where the accepted bid price is such that the ROPL is below (-) 20% but not below : (-) 30%.	The additional performance security percentage shall be incremented by 0.3% for every percentage of ROPL below (-) 20% in addition to 2% of the accepted bid price; for avoidance of doubt, if ROPL is (-)24%, then APS shall be @ 0.3% x (24-20) +2% = 1.2% + 2% = 3.2% of accepted bid price.
iv	Where the accepted bid price is such that the ROPL is below (-)30% or more.	The additional performance security percentage shall be incremented by 0.5% for every percentage of ROPL below (-)30% in addition to 5% of the accepted bid price; for avoidance of doubt, if ROPL is (-)37%, then APS shall be @ 0.5% x (37-30) + 5% = 3.5% + 5% = 8.5% of accepted bid price.
v	The rounded-off percentage so determined shall be referred to as the Rounding Off of Percentage Less (ROPL) of accepted Bid Price and shall form the basis for calculation of the APS in accordance with the applicable incremental rate.	
vi	Rounding Off of Percentage Less (ROPL) of accepted Bid Price, i.e, the percentage by which the accepted Bid Price is less than the Cost Put to Tender, shall be as follows: a. Where the decimal fraction is less than 0.50, the percentage shall be rounded off to the next lower whole percentage. b. Where the decimal fraction is 0.50 or above, the percentage shall be rounded off to the next higher whole percentage.	
vi	The additional performance security shall be treated as part of the performance security.	
vii	Justification for abnormally low bids shall be scrutinized by the Technical Committee and recommended to the Competent Authority for Acceptance of Tender as per Para 6.3.15 of OPWD Code, Vol-I for the approval of the Additional Performance Security (APS). An abnormally low bid is one in which the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns as to the capability of the Bidder to perform the contract at the offered price. Procuring Entity may, in such cases, seek written clarifications from the Bidder, including detailed price analysis of its Bid price in relation to scope, schedule, resource mobilization, allocation of risks and responsibilities, and any other requirements of the bid document. If, after evaluating the price analysis, the procuring entity determines that the Bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Procuring Entity may reject the Bid/ Proposal. However, it would not be advisable to fix a normative percentage below the estimated cost, which would automatically be considered as an abnormally low bid.	

23.5. **GST Registration Certificate / GSTIN:**
Tenderers are required to submit attested copies of valid **GST Registration Certificate / GSTIN.**

23.6. **Security Deposit**

In addition to that **5% of gross value** will be deducted from bill(s) of the contractor toward **Security Deposit (SD)** which will be refunded after the defect liability period subject to payment of final bill. Total Security Deposit to be received from the bidder is **7% of the accepted value of tender.**

23.7. The EMD shall be forfeited, if, (a) a contractor withdraws the tender during the validity period of tender or (b) if the firm fail to furnish ISD within due time or (c) the successful tenderer fails to sign the Agreement for whatever reason.

23.8. In consideration of the **Managing Director, WATCO** to investigate and to take into account each tender and in consideration of the work thereby involved, all earnest money deposited by the tenderer will be forfeited in the event of such tenderer either modifying or withdrawing his tender at his instance within the validity period.

24. **Signing of Tenders / Bid**

All tender documents will be signed digitally with Digital Signature Certificate (DSC). The online bidder shall digitally sign on all statements, documents, certificates, uploaded by him, owing responsibility for their correctness / authenticity as per IT Act 2000. If any of the information furnished by the bidder is found to be false / fabricated/ bogus, his EMD / Bid security shall stand forfeited and the bidder is liable to be blacklisted.

24.1. If the tender is made by an individual, it shall be signed with his own Digital Signature Certificate (DSC).

24.2. If the tender is made by a corporation / company, it shall be signed by a duly authorized officer who shall produce with his tender satisfactory evidence of his authorization. Such a corporation / company may be required before the contract is executed, to furnish evidence of its corporate existence.

The tender shall contain no alterations or additions, except those to comply with instructions issued by the Tender Inviting Officer, or as necessary to correct errors made by the Tenderer, in which case all such corrections shall be digitally signed.

24.3. No alteration made by the tenderer in the contract form, the conditions of the contract, statements / formats accompanying the tender shall be recognized and in case of any alterations made by the tenderer, the tender will be void.

24.3.1. All documents furnished by the contractor along with the tender are to be digitally signed by the bidder.

25. **Clarification on and Amendment to DTCN Document:**

25.1. Contractor may request a clarification to any clause of the DTCN documents up to the number of days indicated in the Data Sheet before the proposal submission date. Any request for clarification must be sent online in the portal. The Employer will respond to this online through the same portal. Should the Employer deem it necessary to amend the DTCN as a result of a clarification, it shall do so following the procedure under para. 2(B) 25.2.

25.2. At any time before the submission of Proposals, the Employer may amend the DTCN by issuing an addendum/corrigendum which shall be published in the portal. The addendum/corrigendum shall be binding for the bidders. To give the bidders a reasonable time to take into account the amendment into their proposals the Employer may, if the amendment is substantial, extend the deadline for the submission of proposals. The purpose of this is to clarify issues on any matter, a tenderer may raise concerning the tendering of the works.

D. SUBMISSION OF TENDERS

26 In view of adoption of e-procurement process pursuant to Government of Odisha in Works Department Office Memorandum No. FA-R-3/08-4657/W dated 12.03.08, 4666/W dated 12.03.2008, 1027/W Dt.24.01.2009 & 7885/W dated 23.07.2013 following changes/ modification/ addendum shall be effected.

26.1. **Bid Documents:**

Bid documents consisting of technical bid & price bid shall be provided in the portal. Submission of bids will be through the e-Procurement portal. The bidders shall prepare the documents & up load the scanned document to the portal in appropriate place in PDF format.

26.2. **Clarification of Bidding Documents:**

In case of submission of Bids through the e-Procurement Portal, the bidder can seek clarification within the period of seeking clarification as mentioned in tender call notice. The Employers response for the queries raised by the bidder will be posted in the portal

26.3. **Documents Comprising the Bids:**

In case of submission of Bids through the e-Procurement Portal, the bidder can submit the scanned copy of the documents in the designated locations of Technical Bid and Financial Bid. Submission of document shall be effected by using Digital Signature Certificate (DSC) of appropriate class and thus shall be in encrypted form.

26.4. **Bid Price:**

In case of submission of Bids through the e-Procurement Portal, **an intelligent Bill of Quantity in Microsoft Excel format** shall be made available to the bidder. The bidder shall down load that particular Excel sheet and fill in rates in figures at the appropriate location. The line-item total in words and the total amount in case of item rate tenders shall be calculated automatically and shall be visible to the bidder. In case of percentage tender, the bidder will only fill in the designated cell and activate "less" or "excess" to indicate whether his price offer is how much excess or less than the estimate amount. The contractor will write percentage excess or less up to one decimal point only. The bidder is not supposed to change or modify the format of the excel sheet in any form.

26.5. **Bid Security/EMD:**

(i) The bidder shall remit bid security for the amount shown in Col. 4 of the table of Notice Inviting Tender (NIT) **on online mode/ submit in shape of BG**

(ii) The EMD will be forfeited in any of the following case.

a) If the Bidder withdraws the Bid after Bid opening during the period of Bid validity.
b) If the Bidder does not accept the correction of the Bid Price.
c) In the case of a successful Bidder, If the Bidder fails within the specified time limit to
   i) Sign the Agreement / contract or
   ii) Furnish the required ISD and Performance Security.
d) In case of submission of Bids through the e-Procurement Portal, if any of the statements, documents, and certificates up loaded by the bidder is found to be false/ fabricated/ bogus, the bidder will be blacklisted and his EMD/ Bid Security shall be forfeited.

26.6. **Submission of Bid:**

In case of submission of bids though e-Procurement portal on the bidder shall upload the scanned copy/copies of documents as required as per DTCN. The on-line bidder shall have to produce the original documents in support of scanned copies & statements up-loaded in the portal on demand by the employer prior to award of contract-failing which action as per DTCN will be initiated.

In case of submission of Bids through the e-Procurement Portal, the bidder shall only submit single copy of the document. He is required to check the documents uploaded with the requirement asked for in the bid. Only after satisfying that all the documents have been uploaded, he should activate submit button. His bids shall not be considered responsive and action as per relevant clause shall be taken if he does not provide the required documents or provided illegible document. Clarity of the document may be ensured by taking out a sample printing.

26.7. **Late Bids:**

In case of submission of Bids through the e-Procurement Portal, the system shall reject submission of any bid through portal after closure of the receipt time. For all purpose the portal time displayed in the system shall be the time to be followed by the bidder.

26.8. The agency should have submitted EPF, ESI & Labour registration certificate.

27. **Modification & Withdrawal of Bid:**

In case of submission of Bids through the e-Procurement Portal, it is allowed to modify the bid. The bidder shall have to log on to the system and resubmit the documents as asked for by the system including the price bid. In doing so, the bids already submitted by the bidder will be removed automatically from the system and the latest bid only will be admitted. But the bidder should avoid modification of bid at the last moment to avoid system failure or malfunction of internet or traffic jam. If the bidder fails to submit his modified bids with in the designated time of receipt, the bids already in the system shall be taken for evaluation.

In case of submission of Bids through the e-Procurement Portal, withdrawal of bid is allowed. The bidder has to click on the "withdraw" button and record the necessary justification for the same in the space provided. In addition to this, he has to write a letter addressed to the Officer inviting the bid and up load the scanned document to portal in respective bid. The system shall not allow any withdrawal after expiry of the closure time of the bid.

28. **Bid Opening:**

In case of submission of Bids through the e-Procurement Portal, the bidders who participated in the online bidding can witness opening of the bid from any system logging on to the portal away from opening place. The bids can only be opened by the pre-designated officials only after the opening time mentioned in the bid.

29. **Award of Work:**

In case of submission of Bids through the e-Procurement Portal, the system shall generate the Award of Contract letter and intimate the bidders in his e-mail.

E. TENDER OPENING AND EVALUATION

30. **Tender Opening:**

30.1 The **Managing Director, WATCO, Bhubaneswar** will open the tenders electronically on the date & time mentioned in the **Notice Inviting Tender (NIT).**

30.2 (i) A tender shall be rejected if;

a) Price Bid is not enclosed.
b) Cost of tender document has not remitted **online** on submission of bid.
c) EMD as per Clause 2(B)23.1 has not been remitted **online/ submitted in shape of BG**.

(ii) In case if the bidder has not submitted following document with the bid due to any reason, clarification may be sought and queries may be issued to the bidders for submission of the same with a stipulated period, failing which their offer shall be liable for rejection.

a) Proof of eligibility and qualifications is not enclosed.
b) There are any criminal cases pending.
c) PAN is not enclosed.
d) Affidavit is not enclosed.
e) Power of Attorney is not enclosed.
f) Record of litigation and arbitration is not enclosed.
g) Other documents as required not enclosed.
h) GST Registration Certificate / GSTIN.

30.3. Any such conditions shall be minuted and the price bid shall not be opened. The price bid shall be opened only for those bidders who qualify in the technical evaluation as described at **Clause 33, Section 2(B)**. The date of opening of price bid shall be intimated by FAX/ E-mail/ Speed Post to the qualified bidder of technical evaluation.

30.4. The **Managing Director, WATCO, Bhubaneswar** may prepare, for his own record, minutes of the tender opening, including the tender opening summary which shall be posted in the portal.

31. **Clarification on Tenders from Tenderers:**
To assist in the scrutiny, evaluation and comparison of the tenders, the **Managing Director, WATCO, Bhubaneswar** may ask contractor individually for clarification on their tenders. The request for clarification and response shall be in writing or by mail. However, no change in the tender amount/ rate shall be sought, offered or permitted by the **Managing Director, WATCO, Bhubaneswar** during the evaluation of the tenders.

32. **Determination of Responsiveness:**

32.1. Prior to the detailed evaluation of tenders **Managing Director, WATCO, Bhubaneswar** will determine whether each tender has been submitted in the proper form and whether it is substantially responsive to the requirements of the tender documents. Tenders, which have not been submitted in the proper form, will be rejected.

32.2. Any tender which is not substantially responsive to the requirements of the tender documents will be rejected by the **Managing Director, WATCO, Bhubaneswar.** Such a tender shall not be allowed subsequently to be made responsive by the contractor by correcting or withdrawing the non-conforming deviation(s) or reservation(s).

32.3. Conditional Tender shall not be accepted.

32.4. **Bid Capacity:** These stipulations shall apply to all works above **Rs.3.00 Crores**. Applicants who meet the minimum qualification criteria will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:

Assessed Available Bid Capacity = (A*N*2-B), where

A = **Maximum value of works** executed in any one year during the last five years (updated to the current price level) rate of inflation may be taken as 10 percent per year (escalation factor) which will take in to account the completed as well as works in progress.
(‘**A’** value corresponding to **Schedule-B**, shall be audited for five years by Regd. Chartered Accountant or competent financial organization/authority).

B = **Value of current price level** (updated with weightage factor) of the existing commitments and ongoing works to be completed during the next years (Period of completion of works for which bids are invited) and

N = Number of years prescribed for completion of the works for which the bids are invited.

Note: -

(1) In case of a joint venture, the available bid capacity will be applied for each partner to extent of his proposed participation in the execution of the works.

(2) The statement showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer-in-charge not below the rank of an Executive Engineer/Superintending Engineer/ Equivalent. However, certificate from a registered Chattered Accountant in this regard with verifiable UDIN shall also be accepted

(3) In case of non-disclosure/hiding of any existing commitment and ongoing works to mislead the tender inviting authority, if detected later, then the tender will be liable for rejection.

Escalation Factor:

Following enhancement factors will be used for the costs of works executed and the financial figures to a common base value for works completed in India.

Year before	Multiplying factor
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61

(Applicant should indicate actual figures of costs and amounts for the work executed by them without accounting for the above-mentioned factors)

In case the financial figures and value of completed works are in foreign currency the above enhanced multiplying factors will not be applied. Instead, current market exchange rate (State Bank of India BC selling rate as on the last date of submission of the bid) will be applied for the purpose of conversion of amount in foreign currency into Indian rupees. (Works Deptt. OM No. FA-Codes-97/11-6300 Dt.16.06.2011.)

33. **Proposal Evaluation:**

33.1. From the time of the proposals are opened to the time, the contract is awarded, the contractor should not contact the client on any matter related to its Technical and/or Financial Proposal except any required in Clause-2(B)31.

33.2. Any effort by a bidder to influence the client in any form directly or indirectly during the examination, evaluation, ranking of proposals, and recommendation for award of the contract may result in the rejection of the contractor's proposal.

33.3. Evaluation of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded.

33.4. **Evaluation of Technical Proposals:**

33.4.1. The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the DTCN.

33.4.2. A Proposal shall be rejected at this stage if it does not respond to required aspects of the NIT / DTCN.

33.4.3. During technical evaluation, the tenderers should have to make a presentation on the similar nature of works as per eligibility criteria (commissioned & Functional work) before the Evaluation Committee, if so desired by the Committee.

33.5. **Evaluation of Financial Proposals:**

33.5.1. After the technical evaluation is completed, the Employer shall inform in writing or by mail to the contractors, who have qualified in the General and Technical bid (Part-I of DTCN), the date, time and location for opening the Financial Proposals (Price Bids).

33.5.2. Financial Proposals of the bidders who qualified in technical evaluation shall be opened.

33.5.3. Financial bids determined to be substantially responsive will be checked by the employer for any arithmetic error(s).

33.5.4. The Evaluation Committee will correct any computational errors. When correcting computational errors, in case of discrepancy between a partial amount and the total amount or between words and figures, the amount in words will prevail.

33.5.5. If the bid price increases as a result of these corrections, the amount as stated in the bid will be the bid price and any increase will be treated as rebate. If the bid price decreases, the decreased amount will be treated as bid price.

33.6. **Selection of contractor on the basis of Price Bid:**

Other condition being equal, the contractor bidding the lowest price will be considered for acceptance by competent authority.

34. **Negotiations:**

34.1. Negotiations will be held if required with the lowest valid tenderer. In the event of the L_1 tenderer has furnished any condition which grossly affects the tender value / contains such conditions which make the value of the offer indefinite, he may be given an opportunity to withdraw such condition(s) to make the tender definite. Failure to withdraw such condition(s) may lead to rejection of the tender as in consistent / non responsive. In such case the employer may explorer the possibility of considering the next valid tender as L_1.

If L1 bidder does not turn up for agreement after finalisation of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to black list the contractor. In case, the L2 bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to condition that L2 bidder negotiates at par with the rate quoted by the L1 bidder otherwise the tender will be cancelled. **(As per the Government of Odisha, Works Department Office Memorandum No.12366 dated 08.11.2013 on amendment to Para No. 3.5.14, Note-I of OPWD Code Vol-I, by inclusion.)**

F. AWARD OF CONTRACT

35. **Award Criteria:**

35.1. After acceptance of price bid of the tender by competent authority selected contractor will be intimated about such acceptance.

35.2. The contractor is expected to commence the work on the date and at the location specified in the Data Sheet.

36. **Right to Accept or Reject any or all Tenders:**
Not withstanding Clause 2(B)35, the **Managing Director / Director (Project), WATCO, Bhubaneswar** reserves the right to accept or reject any tender, annul the tendering process, reject all tenders at any time or any stage prior to the award of contract without thereby incurring any liability to the affected bidders.

37. **Process to be Confidential:**

37.1. After the opening of tenders as per Clause 2(B)30 & 2(B)33, information relating to examination, evaluation and comparison of tenders and recommendations, concerning to the award of contract shall not be disclosed to the contractor or any other persons, officially not concerned with the process, until the award of the contract to the successful contractor has been announced.

37.2. Any effort by any contractor to influence the Department officials in scrutiny, evaluation and comparison of tenders, and in any decisions concerning award of a contract, may result in the rejection of their Tender.

38. **Notification of Award & signing of Agreement:**

a) The Employer/ Engineer-in-charge shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. This Letter of acceptance will state the sum that the Engineer-in-charge will pay the contractor in consideration of the execution & completion of the works by the contractor as prescribed by the contract & the amount of performance security and additional performance security required to be furnished. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.

b) The contractor after furnishing the required acceptable performance security and additional performance security, "Letter to Proceed" or "Work Order" shall be issued by the Engineer-in-charge with copy thereof to the procurement Officer-Publisher. The Procurement Officer-Publisher shall up load the summary and declare the process as complete.

c) In the e-Procurement Portal, the system shall generate the template of award letter and the Officer Inviting the Bid shall mention the amount of Performance Security and additional security required to be furnished in the letter and intimate the bidders in his e-mail ID. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.

d) The bidder shall within **7 days** of issue of letter of acceptance, furnish the Performance security & additional Performance security (if any) in the prescribed form & the work programme & shall sign the agreement in prescribed format within **15 days** of issue of LoA, failing which the Engineer-in-Charge shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the Bid Security absolutely**.** The agreement will incorporate all agreements between the officer inviting the bid and the successful bidder.

e) If **L_1 bidder does not turn up for agreement** after finalization of the tender, then he shall be debarred form participation in bidding for three years and action will be taken to blacklist the contractor. In that case, the L2 bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to the condition that L2 bidder negotiates at par with the rate quoted by the L1 bidder otherwise the tender will be cancelled. In case a contractor is black listed, it will be widely published and intimated to all departments of Government and also to Govt. of India agencies working in the state.
(Amendment to Para-3.5.14 Note-I of OPWD Code Vol.-I , OM No.12366/W dated 8.11.2013)

f) Following documents shall form part of the agreement

i. The notice inviting bid, all the documents including additional conditions, specifications and drawings, if any, forming the bid as issued at the time of invitation of bid and acceptance thereof together with any correspondence & documents leading thereto & required amount of performance security including additional performance security as per sub clause 37.B.e. hereof.

ii. Standard Bid Document P.W.D. Form **P_1.**

iii. The letter to proceed with the work shall be issued by Engineer-in-charge only after signing of the agreement. The notification of award will constitute the formation of the contract subject only to the furnishing of performance security and additional performance security in accordance with the provisions of the agreement.

iv. On acceptance of the composite bids by the competent authority the letter of award will be issued by the Engineer-in-Charge of the major component of the work on behalf of the Governor of Odisha.

SECTION- 2(C)
DATA SHEET

Ref Cl. No	Description
	Name of the Work: "DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS"
Section-8	Broad Scope of Works: 1. Survey, Engineering, Design, Drawing, Supply & Laying of Sewer line including Testing & Commissioning. 2. Construction of Inspection Chamber, Manhole Chamber. 3. Design, Drawing, Construction, Testing & Commissioning of ETP & STP including all Electro-mechanical works. 4. Online effluent quality monitoring alongwith SCADA & Automation Facility. 5. Construction of Sump for storage of treated used water 6. Re-use and/ or disposal facility of treated used water. 7. External Electrification with Installation of Transformers and DG Set. 8. Road restoration work including all associated works etc. 9. Testing & Commissioning of all works including submission of As-built drawing. 10. O & M for 5 (Five) years.
2(B)1. (a)	Name of the Employer: **Managing Director, WATCO, Bhubaneswar.**
2(B)33.6	Method of selection: **Qualifying in the Technical Bid and L_1 in the Price Bid.**
2(B)26.	Two Bid System: **Part-I: General & Technical Bid and Part-II: Price Bid to be submitted as detailed at Clause-26, Section-2(B).**
2(B)15.	Proposals shall be submitted in the following language: **English**
2(B)21.	Offers must remain valid for **120 (One Hundred Twenty) days** from the date of opening of Price Bid.
2(B)25.1	Seeking of Clarifications may be requested till **5:00 PM of Dt.06.11.2026**
2(B)30	The tender (Technical Bid) will be opened on following date and time: **12:30 PM of Dt.19.11.2026.**
2(B)33.5	The date of opening of **Price Bid** shall be intimated separately by writing or by mail after the technical evaluation is over.

SECTION –2 (D)

LETTER FOR SUBMISSION OF TENDER

[To be filled in by the Bidder]

Note:- (1)	*Additional conditions appended to the tender will make the tender liable for rejection.*
(2)	*Non-submission of EMD in proper shape and other required documents as detailed hereinafter shall make the tender liable for rejection.*

Ref. No. _____/Dated_____

To

The Managing Director, WATCO, Bhubaneswar.

Sub: **Tender for the Work: "DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS".**

Ref: **Identification No. WATCO (W)- 21(3)/2026-27 Dtd.16.10.2026 published in the website www.tendersodisha.gov.in.**

Dear Sir,

With reference to the above, we are to inform you that in response to your above referred NIT, we have downloaded the Detailed Tender Call Notice (DTCN) Part-I & II and that after having thoroughly examined the same, we hereby tender for the work to execute the work within the stipulated time and in conformity with the relevant clauses of the DTCN along with all related statutory rules and regulations for the amounts as quoted in the accompanying price bid.

2) I/We have studied, acquainted and satisfied ourselves with the site and its working conditions for the successful and timely completion of the work.

3) I/We are submitting herewith Bar Chart to complete the work in time.

4) **Our offer is unconditional and is in conformity with** the requirements of **the DTCN**. We understand that **any additional condition put by us in the tender shall make our tender liable for rejection**.

5) I/We understood that you are not bound to assign any reason in case of rejection of our tender.

6) I/We agree to keep our offer open for a minimum of 120 (One Hundred Twenty) days from the date of opening of the Price bid. Further extension of validity will be our prerogative.

Should this tender be accepted, we hereby agree to abide by and fulfil all the terms and provisions of this Detailed Tender Call Notice (DTCN).

Thanking you.

Yours faithfully,

Name and Signature
of the authorised signatory
along with seal and address of the firm.

SECTION-2 (E)

TENDER DECLARATION

[To be filled in by the tenderer]

I/We hereby tender for the execution for the Governor of Odisha of the work specified in the enclosed memorandum at the rates given in the price bid and will complete the said work in all respects within the period as specified in the Detailed Tender Call Notice and in accordance with the specifications, designs and drawings and other documents referred to therein, which shall have to be approved by the **WATCO, Odisha, Bhubaneswar** and such other written instructions as may be given by the WATCO, Odisha from time to time for duly carrying out of the said works and with such materials as are provided for in accordance with the conditions and special conditions hereto attached. I/We have inspected the work site and studied its conditions, labour, materials and have understood the tender implications fully.

Should this tender be accepted I/We hereby agree to abide by and fulfil all the terms and provisions of the said conditions and special conditions of the contract annexed hereto or in default thereof to forfeit and pay to the Governor of Odisha the sums of money mentioned in the said conditions and in the event of such default the transaction effected by this tender shall cease and determine.

Signature of Tenderer /
Contractor
(Seal)

SECTION-2(F)

LETTER OF ACCEPTANCE OF TENDER

(To be filled in by Managing Director, WATCO, Odisha, Bhubaneswar)

The above tender is hereby accepted by me on behalf of the Governor of Odisha.

Managing Director, WATCO
Signed on behalf of the
Governor of Odisha

SECTION-2(G)

MEMORANDUM

(To be filled in by the contractor during signing of Agreement)

1.	Name of the work		**DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS.**
2.	Approximate Cost	:	**Rs.609.87 Lakh**
3.	Accepted tender Value	:	**Rs. _____ Lakh**
4.	Bid Security (Earnest Money Deposit) (Online remittance/ In shape of BG)	:	**Rs.6.10 Lakh**
5.	Initial Security Deposit (@ **2%** of the accepted tender)	:	**Rs. _____ Lakh**
6.	Additional Performance Security (If any)		**Rs. _____ Lakh**
7.	Percentage to be deducted from each Bill as security deposit	:	**@ 5 (five) %**
8.	Time allotted for completion of the work (from the date of written order to commence)	:	**12 (Twelve) Calendar Months**
9.	Date of written order to commence.	:	
10.	Total number of items of work tendered for (as per schedule attached hereto).	:	

Signature of Tenderer / Contractor

SECTION –3

INFORMATION REGARDING TENDERER

(To be filled in by the Tenderer)

A. In case of individuals:

i. Name of Tenderer :

ii. Whether his business is registered :

iii. Date of commencement of business :

iv. Whether he pays income tax each year. If yes, furnish particulars. :

B. In case of Partnership Firm :

i. Names of Partners :

ii. Whether partnership is registered. :

iii. Date of establishment of the firm. :

iv. In case, income tax is paid by each Partner, the details to be furnished. :

C. In case of limited Liability Company :

i. Amount of paid up capital. :

ii. Names of Directors. :

iii. Date of registration of the Company. :

iv. Copies of the last three year's balance sheets of the Company. :

Signature of the Tenderer

SECTION-4

DECLARATION BY THE TENDERER

1. I have visited the site and have fully been acquainted myself with the local situation regarding materials, labour and the factors pertaining to the work before submitting the tender.
2. ve fully been acquainted myself with the local situation regarding materials, labour and the factors pertaining to the work before submitting the tender.

3. I have carefully studied the conditions of the contract, specification and other documents of this work and I agree to execute the same accordingly.

4. I solemnly pledge that I shall be sincere in discharging my duties as responsible contractor and complete the work within the prescribed time limit. I shall submit detailed construction programme with target dates for various items and stages of work keeping in view the time limit and shall accordingly arrange for necessary labours, materials, and equipments etc., punctually. In case there are deviations from the construction programme, I shall abide by the decision of the Engineer-in-charge for revision of the programme and shall arrange for labour, materials, equipments etc

5. I shall follow all rules and regulations of the state in force with regard to engagement of labour for the work.

6. The documents furnished with the tender are correct to the best of my knowledge and belief and if any information found to be incorrect in future, the Department has the liberty to take any action as deemed fit.

Signature of the Tenderer

SECTION – 5

FORM OF AGREEMENT

This contract made the ……day of…… to ……. between the Governor of Odisha acting through (designation) Ministry of ……. Department of ……..Government of Odisha (address) (name and address of employer) (hereinafter called "the employer" and …… (name and address of contractor) (hereinafter called "the Contractor") of the other party).

WHEREAS the Employer is desirous that the contractor executes.

……..
……..
…… (Name and identification number of contract) (hereinafter called "the Works") and the employer has accepted the Bid by the contractor for the execution and completion of such works and the remedying of any defects therein, at a contract price of Rs……

NOW, THEREFORE IT IS HEREBY AGREED BETWEEN THE PARTIES AS FOLLOWS:

1. In this contract, words and expressions shall assume the same meanings as are respectively assigned to them in the conditions of Contract hereinafter referred to and they shall be deemed to form and be read and construed as part of the Agreement.
2. In consideration of the payments to be made by the employer to the contractor as hereinafter mentioned, the contractor hereby covenants with the Employer to execute and complete the works and remedy the defects therein in conformity in all aspects with the provision of the contract.
3. The Employer hereby covenants to pay the contractor in consideration of the execution and completion of the works and in remedying the defects wherein the contract price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and construed as part of this contract, viz:

    i) Letter of acceptance
    ii) Notice to proceed with the works
    iii) Contractor's bid
    iv) Bidding data
    v) General conditions of contract (including special conditions of contract)
    vi) Specifications
    vii) Drawings
    viii) Bill of quantities
    ix) Any other documents listed in the contract data as forming part of the contract.

x) Drawing and design of structure(s) or part thereof submitted by the tenderer and duly approved by the competent authority after this Agreement.

IN WITNESS WHEREOF the parties have caused this contract to be executed the day and year first before written.

Binding signature of employer signed by……
(for and on behalf of the Governor of Odisha)

Binding signature of Contractor signed by…… (for and on behalf of ……. duly authorised vide Resolution No…… dated……. of the Board of Directors of ……..)

In the presence of
(Witnesses)

1.

2.

Contractor

General Manager
WATCO Division, Kataka.

SECTION-6

CONDITIONS OF CONTRACT

6.1. **Decision of General Manager is Final & Binding:**
The party whose tender is accepted hereinafter called the contractor is to provide everything of every sort and kind (with the exceptions noted in the schedule attached) which may be necessary and requisite for the due and proper execution of the several works included in the contract according to the true intent and meaning of the drawings and specification taken together, which are to be signed by the **General Manager, WATCO Division, Kataka** herein after called the General Manager and the contractor whether the same may or may not be particularly described in the specification or shown on the drawing provided that the same are reasonably and obviously to be inferred there from and in case of any discrepancy between the drawings and the specifications the General Manager is to decide which shall be followed.

6.2 **Amendment of Errors during Progress of Work:**
The contractor is to set out the whole of the works in conjunction with an officer to be deputed by the General Manager and during the progress of the works to amend on the requisition of the General Manager any errors which may arise therein and provide all the necessary labour and materials for doing. The contractor is to provide all plant labour and materials (with the exception noted in Schedule), which may be necessary and requisite for the works. All materials and workmanship are to be the best of their respective kinds. The contractor is to leave the works in all respects clean and perfect at the completion thereof.

6.3. **Fair Wage Clause:**
The contractor shall not employ for the purpose of this contract any person who is below the age of fourteen years, and shall pay to each labourer, for the work done by such labourer, fair wages. Fair wages means wages whether for time or piecework, prescribed by the State P.W.D. provided that where higher rates have been prescribed under the minimum wages Act, 1948, wages at such higher rates should constitute fair wages.

The General Manager shall have the right to enquire into and to decide any complaint alleging that the wages paid by the contractor to any labourer for the work done by such labourer is less than the wages paid for similar work in the neighbourhood.

The Officer-in-charge of the work shall have the right to decide whether any labourer employed by the contractor is below the age of fourteen years and to refuse to allow any labourer whom he decides to be below the age of fourteen years, to be employed by the contractor.

6.4. **Approved Drawings & Specification of Site with Contractors Agent**:
Complete copies of the drawing and specifications signed by the General Manager and the same or copies thereof are to be kept with the works in-charge of the contractor's

agent which is to be constantly kept on the ground by the contractor and to whom instructions can be given by the General Manager.

6.5. **Work not to be Sublet:**

The work should not be sublet. During execution of work if it is found that the work/ part of the work is sublet, the General Manager may there upon by notice in writing, rescind the contract and the **security deposit of the contractor shall thereupon stand forfeited** and be absolutely at the disposal of Government. In addition, the contractors shall not be entitled to recover or be paid for any work thereafter actually performed under the contract.

6.6. **Deviation from Approved Drawing and Specifications:**

The contractor is not to vary or deviate from the drawings or specifications or execute any extra work of any kind whatsoever unless upon the authority of the General Manager to be sufficiently shown by any order in writing, by any plan or drawing expressly given and signed by him as an extra or variation or by any subsequent written approval signed by him. In case of daily labour all vouchers for the same are to be delivered to the General Manager or the Officer-in-Charge at least during the week following that in which the work may have been done and no day work shall be allowed unless authorised by the General Manager and no such authority shall be given if the work is capable of being measured and being paid for at an agreed rate.

6.7. **Rate for Extra Work.**

Any authority given by the General Manager, for any alterations or additions in or to the works, is not to vitiate contract. But all additions omissions or variations made to the approved design & drawing or to the item-wise indicative quantities of the work, reflected at **Section-08 (Scope of work) of the DTCN**, in carrying out the works are to be measured and valued and certified by the General Manager, and shall be added to or deducted from the amount of the contract, as the case may be at the rates, in accordance with the sanctioned schedule of rates, in force at the time, when the particular item of work was commenced. In those cases, in which rates do not exist, the **Managing Director, WATCO, Bhubaneswar** will fix the rates to be paid and his decision shall be final.

6.8. **Extension of Time:**

If the contractor shall desire an extension of time for completion of the work on the ground of his having been come across with unavoidable hindrance in its execution or any other grounds he shall apply in writing to General Manager within 30 days of the date of the hindrance on account of which he desires such extension as aforesaid and the authority shall if in his opinion (which shall be final) as reasonable ground be shown thereof authorized such extension of time if any, as may in his opinion, be necessary or proper. The authority shall at the same time inform the contractor whether the authority claims compensation for delay, in case there is any delay in execution due to non-availability of stock materials or land or rise in cost of materials and labour or any reason whatsoever beyond the control of authority, the contractor is bound to execute the work as per the terms and rates in the contract and no monetary claim on such account will be acceptable to the authority but extension of time, proportionate to the delay in execution may be granted by the authority considering the merit of the case. The competent authority reserves the right to take any expert advice of any Committee/ Secretary/ Legal Advisor while considering the

application of the contractor for extension of time and can impose any condition which shall be binding on the contractor.

6.9. **Works & Materials at Site to be Property of Government of Odisha.**
All works and materials brought and left at site by the contractor or by his orders for the purpose of forming part of the works are to be considered to be the property of the **Governor of Odisha** and the same are not to be removed or taken away by the contractor or any other person without the specific permission in writing of the General Manager but the Governor of Odisha will not be liable for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or stolen or injured by weather or otherwise.

6.10. **Supply of Materials:**
The contractor shall at his own expense provide all materials required for the work. The materials supplied by the contractor shall conform to relevant latest editions of the specification and codes of practices of the Bureau of Indian Standards or in their absence to other specifications as may be specified by the Engineer-in-charge. The contractor shall furnish necessary certificates in support of the quality of the materials as may be required by the Engineer-in-charge.

The Engineer-in-charge shall have absolute authority to test the quality of materials at any time through any reputed laboratory at the cost of contractor. The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The General Manager has full power for removal from the premises of all materials which, in his opinion, are not in accordance with the specification and in case of default, the General Manager is to be at liberty to sell such materials and to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The General Manager is also to have full power to require other proper materials to be substituted and in case of default, the General Manager may cause the same to be supplied and all costs which may attend such removal and substitution are to be borne by the contractor and may be recovered from the sale proceeds of such rejected materials when necessary, the balance, if any, being kept in deposit in the contractor's favour.

6.10.1 ***The successful bidder is to purchase materials necessary for execution of work contract from local SSI units & MS Enterprises having valid rate contract & ISI mark****.*

6.11. **Execution with Defective Workmanship & Improper Materials.**
If in the opinion of the General Manager any of the works have been executed with improper materials or defective workmanship, the contractor is then required by the General Manager forthwith to re-execute the same and to substitute proper materials and workmanship and in case of default of the contractor in so doing within a week, the General Manager is to have full power to employ other agency to re-execute the work and the cost thereof shall be borne by the contractor.

6.12. **Rectification of Defects within Guarantee Period:**

Any defects, shrinkage or other faults which may appear within 12 (twelve) months from the completion of the work arising out of defective or improper materials or workmanship are upon the direction of the General Manager to be amended and made good by the contractor at his own cost unless the General Manager for reasons to be recorded in writing shall decide that they ought to be paid for and in case of default, the Governor of Odisha may recover from the contractor the cost of making good the works.

6.13. **Responsibility of the Contractor during Execution of Work:**
From the commencement of the works to the completion of the same they are to be under the contractor's charge. The contractor is to be held responsible for and to make good all injuries, damages and repairs occasioned or rendered necessary to the same by fire or other causes and they are to hold the Governor of Odisha harmless from any claims for injuries to persons or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor or of any one of his employees during the execution of the works.

6.14. **Execution of Works in the Site by Other Workmen:**
The General Manager is to have full powers to send workmen upon the premises to execute fittings and other works not included in the contract for whose operations the contractor is to afford every reasonable facility during ordinary working hours provided that such operations shall be carried on in such a manner as not to impede the progress of the work included in the contract but the contractor is not to be responsible for any damage which may happen to or be occasioned by any such fittings or other works.

6.15. **Time Control**:
(Vide Works Department Office Memorandum No.24716 dtd.24.12.2005 and No.8310 dtd.17.05.2006)

a) Progress of work and Re-scheduling programme.

i) The General Manager / Engineer-in-Charge shall issue the letter of acceptance to the successful contractor. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.

ii) Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Engineer-in-Charge for approval a Programme showing the general methods, arrangements, and timing for all the activities in the Works along with monthly cash flow forecast.

iii) To ensure good progress during the execution of the work the contractors shall be bound in all cases in which the time allowed for any work exceeds one month to complete, $1/4^{th}$ of the whole time allowed under the contract has elapsed, ½ of the whole of the work before ½ of the whole time allowed under the contract has elapsed, $3/4^{th}$ of the whole of the work before $3/4^{th}$ of the whole time allowed under the contract has elapsed.

iv) If at any time it should appear to the Engineer-in-Charge that the actual process of the work does not conform to the programme to which consent has been given the Contractor shall produce, at the request of the Engineer-in-Charge, a revised programme showing the modifications to such programme necessary to ensure completion of the works within the time for completion. If the contractor does not submit an updated Programme within this period, the Engineer-in-

Charge may withhold the amount of 1% of the contract value from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

v) An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.

vi) The Engineer-in-Charge's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer-in-Charge again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

b) Extension of the Completion Date.

i) The time allowed for execution of the works as specified in the Contract data shall be the essence of the Contract. The execution of the works shall commence from the 15th day or such time period as mentioned in letter of Award after the date on which the Engineer-in-Charge issues written orders to commence the work or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee / Security deposit absolutely.

ii) The Contractor shall submit the Time & Progress Chart for each milestone Quarter wise indicating each month and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per milestone given in contract data.

iii) In case of delay occurred due to any of the reasons mentioned below, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

(1) Force majeure, or
(2) Abnormally bad weather, or
(3) Serious loss or damage by fire, or
(4) Civil commotion, local commotion of workmen, strike or lockout affecting any of the trades employed on the work, or.
(5) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract.
(6) In case a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost, or

(7) Any other cause, which, in the absolute discretion of the authority mentioned, in Contract data is beyond the Contractors control.

iv) Request for reschedule and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen (14) days of the happening of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

v) In any such case a fair and reasonable extension of time for completion of work may be given. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. Non-application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

c) Compensation for Delay

If the contractor fails to maintain the required progress in terms of clause-2 of P-1 Contract or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the **Managing Director, WATCO, Bhubaneswar** may decide on the amount of tendered value of the work for every completed day / month (as applicable) that the progress remains below that specified in Clause-2 of P-1 Contract or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified. Compensation @ 1.5% per month of for delay of work, delay to be completed on per day basis. Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work or to the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in contract data, or the rescheduled milestone(s) in terms of Clause-2.5, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of extension of time. Withholding of this amount on failure to achieve a milestone shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest whatsoever shall be payable on such withheld amount.

d) Bonus for early completion

For availing incentive clause in any project which is completed before the stipulated date of completion, subject to other stipulations it is mandatory on the part of the concerned General Manager to report the actual date of completion of the project as soon as possible through fax or e-mail so that the report is received within 7 days of such completion by the concerned Director, Managing

Director & the Administrative Department. The incentive for timely, completion should be on a graduated scale of one percent to 05 percent of the contract value. Assessment of incentives may be worked out for earlier completion of work in all respect in the following scale.

Before 30 % of contract period = 5 % of Contract Value
Before 20 to 30 % of contract period = 4 % of Contract Value
Before 10 to 20 % of contract period = 3 % of Contract Value
Before 5 to 10 % of contract period = 2 % of Contract Value
Before 5% of contract period = 1 % of Contract Value

(Amendment to Para-3.5.5 (V) of Note-III of OPWD Code Vol.-I by inclusion vide O.M. No.5288 dt.04.05.2016)

e) Management Meetings

i) Either the Engineer or the Contractor may require the other to attend a management meeting. The business of management meetings shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

ii) The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

f) **Rescission of Contract:**

To rescind the contract (of which rescission notice in writing to the contractor under the hand of the General Manager shall be conclusive evidence), 20% of the value of leftover work will be realized from the contractor as penalty.

(Amendment as per letter No.10639 dt.27.05.2005 of Works Department, Odisha)

6.16. **Circumstances for Rescission of Contract:**

If the contractor shall become bankrupt or compound with or make any assignment for the benefit of his creditors or shall suspend or delay the performance of his part of the contract (except on account of cause mentioned in **Clause 6.15** or in consequence of not having proper instructions for which the contractor shall have duly applied) the General Manager may give to the contractor or his assignee or trustee as the case may be notice requiring the works to be proceeded with and in case of default on the part of the contractor for a period of seven days, it shall be lawful for the General Manager to rescind the contract, if necessary, and to enter upon and take possession of the work and to employ any other person to carry on and complete the same and to authorise him or them to use the plant, materials and property of the contractor upon the works and the costs and the charge incurred in any way in carrying on and completing the said works are to be paid to the General Manager by the contractor or may be set off by the General Manager against any money due or to become due to contractor. If the assignee or trustee of the Contractor proceeds with

the work, the conditions of this contract shall be binding upon the said assignee or trustee.

6.17. **Payment Certificate.**
A Certificate of the General Manager or an award of the refer hereinafter referred to as the case may be showing the final balance due or payable to the contractor is to be conclusive evidence of the works having been duly completed and that the contractor is entitled to receive payment of the final balance, but without prejudice to the liability of the contractor under the provisions of **Clause-6.11.**

6.18. The General Manager shall make payment of work in full or part thereof those shall have been certified, subject to availability of Letter of Credit (LoC).

6.19 **Price Adjustment** *(vide Works Department Office Memorandum No.15847/W Dt.19.11.2019)*

1. Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formula given in following Paras.

(a) The price adjustment shall apply for the work done from the start date given in the contract data up to end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.

(b) The price adjustment shall be determined during each month from the formula given in following Paras.

(c) Following expressions and meanings are assigned to the work done during each month:

R= Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month. It will exclude value for works executed for extra items under variations.

2. To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs

The formula (e) for adjustment of prices are:

19(a) (i): Adjustment of Other Materials Component

Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen, pipe and POL procured by the contractor shall be paid in accordance with the following formula:

$V_M = 0.85 \times P_m/100 \times R \times (M_1 - M_0)/M_0$

V_M = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL.

M_o = The all-India wholesale price index (all commodities) on 28 days preceding the date of opening of Bids, as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

M_1 = The all India wholesale price index (all commodities) for the month under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_m = Percentage of local material component (other than cement, steel, bitumen and POL) of the work.

19(a)(ii): Adjustment for Cement Component

Price adjustment for increase or decrease in the cost of cement procured by the contractor shall be paid in accordance with the following formula:

$V_c = 0.85 \times P_c/100 \times R \times (C_1 - C_0)/C_0$

V_c = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for cement

C_0 = The all India wholesale price index for Ordinary Portland Cement (OPC) on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

C_1= The all India wholesale price index for Ordinary Portland Cement (OPC) for the month under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_c = Percentage of Cement Component of the Work.

19(a)(iii): Adjustment for Steel Component

Price adjustment for increase or decrease in the cost of steel procured by the contractor shall be paid in accordance with the following formula:

$V_s = 0.85 \times P_s/100 \times R \times (S_1 - S_0)/S_0$

V_s = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for steel.

S_0 = The all India wholesale price index for steel (Mild Steel long products) on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi

S_1= The all India wholesale price index for steel (Mild Steel long products) for the month under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_s = Percentage of steel component of the work

Note: For the application of this clause, index of (Mild Steel long products) has been chosen to represent steel group.

19(a)(iv): Adjustment of Bitumen Component

Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formula:

$V_b = 0.85 \times P_b/100 \times R \times (B_1 - B_0)/B_0$

V_b = Increase or decrease in the cost of work during the month under consideration due to changes in the rate for bitumen.

B_0 = The official retail price of bulk bitumen at the IOCL/ BPCL depot at nearest center on the day 28 days prior to date of opening of Bids.

B_1 = The official retail price of bulk bitumen at IOCL/ BPCL depot at nearest center for the 15th day of the month under consideration.

P_b = Percentage of bitumen component of the work

19(a)(v): Adjustment towards differential cost of Pipes.

Price adjustment for increase or decrease in the cost of pipe shall be paid in accordance with the following formula:

$V_{pi} = 0.85 \times P_{pi}/100 \times R \times (P_{i1} - P_{i0})/P_{i0}$

V_{pi} = Differential cost of pipe i.e. amount of increase or decrease in rupees to be paid or recovered during the month under consideration.

P_{pi} = Percentage of pipe component of the work

P_{i1} = All India Whole sale price index of pipe for the period under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_{i0} = All India Whole sale price index of pipe on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

19(b): Adjustment of Labour Compone nt

Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the fallowing formula:

$V_L = 0.85 \times P_l/100 \times R \times (L_1 - L_0)/L_0$

V_L = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour.

L_0= The minimum wages for unskilled labour as Notified by Government of Odisha as prevailed on the last stipulated date of receipt of tender including extension, if any.

L_1 = The minimum wages for unskilled labour as Notified by Government of Odisha as prevailed on the last date of the Month previous to the one under consideration.

P_l = Percentage of labour component of the work.

19(c) : Adjustment of POL (fuel and lubricant) Component

Price adjustment for increase or decrease in cost POL (fuel and lubricant) shall be paid in accordance with the following formula:

V_f = $0.85 \times P_f/100 \times R \times (F_1 - F_0)/F_0$

V_f = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for fuel and lubricants.

F_0 = The official retail price of High-Speed Diesel (HSD) at the existing consumer pumps of IOCL/ BPCL/ HPCL at nearest center on the day 28 days prior to the date of opening of Bids.

F_1 = The official retail price of HSD at the existing consumer pumps of IOCL/ BPCL/ HPCL at nearest center for the 15th day of the month under consideration .

P_f = Percentage of fuel and lubricants component of the work

Note: For the application of this clause, the price of High-Speed Diesel oil has been chosen to represent fuel and lubricants group.

19(d): Adjustment for Plant and Machinery Spares Component

(vi) Price adjustment for increase or decrease in the cost of plant and machinery spares procured by the Contractor shall be paid in accordance with the following formula:

V_p- $0.85 \times P_p/100 \times R \times (P_1 - P_0)/P_0$

V_p- Increase or decrease in the cost of work during the month under consideration due to changes in the rates for plant and machinery spares.

P_0- The all India wholesale price index for manufacture of machinery for mining, quarrying and construction on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_1- The all India wholesale price index for manufacture of machinery for mining, quarrying and construction for the month under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_p- Percentage of plant and machinery spares component of the work.

Note: For the application of this clause, index of manufacturing of machinery for mining, quarrying and construction has been chosen to represent the Plant and machinery Spares group.

Regarding wholesale price Index (WPI) for appropriate commodity for payment of price adjustment, due to change of base year of WPI from 1993- 94 to 2004-05 & 2011-12, it is observed that, the commodity 'Bars and Rod', 'Cement', 'Heavy machinery and parts' included in the list of WPI 1993-94 series are not mentioned as such in the WPI 2004-05 & 2011-12 series. Therefore, the following items in the WPI 2004-05 & 2011-12 series shall be considered corresponding to items in WPI 1993-94 series:

Sl. No.	Item in WPI 1993-94 series	Item in WPI 2004-05 series	Item in WPI 2011-12 series

1.	Cement	Grey Cement	Ordinary Port land cement
2.	Bars & rods	Rebars	Mild steel long products
3.	Heavy Machinery & parts	Construction Machinery	Manufacture of machinery for mining, quarrying & construction.

19(e): APPLICATION OF ESCALATION CLAUSE:

The contractor shall for the purpose of availing reimbursement/refund of differential cost of steel, bitumen, cement, pipe, POL and wages, keep such books of account and other documents as are necessary to show that the amount of increase claimed or reduction available and shall allow inspection of the same by a duly authorized representative of Government and further, shall at the request of the Engineer-in-Charge, furnish documents to be verified in such a manner as the Engineer-in-Charge may require any document and information kept The contractor shall within a reasonable time of 15 days of his becoming aware of any alteration in the price of such material, wages of Labour and/or price of POL give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition along with information relating to there to which he may be in a position to supply.

Percentage Table

Sl. No.	Category of works		% Component (cost wise)		
			Labour (P_l)	P.O.L (P_f)	Steel (P_s)+ Cement (P_c)+ Bitumen (P_b) + Pipes (P_{pi}) + Plant & Machinery Spare & Component (P_p) + Other Materials*
1.	R&B works (% of component)	Road works	5	5	90
		Bridge works	5	5	90
		Building works	5	5	90
2.	Irrigation works (% of component)	Structural work	5	5	90
		Earth, Canal & Embankment work	5	5	90
3.	P.H. Work	Structural work	5	5	90
		Pipeline work	5	5	Pipe – 70% * Machinery + Other material -20%
		Sewer line	5	5	Pipe – 70% * Machinery + Other material -20%

Note:Further break up may be worked out considering the consumption of Cement. Steel, Bitumen, pipe and Plant & Machinery Spare Component in the concerned works and shall be provided in the bid document in shape of **"Schedule of Adjustment Data" as an **"Appendix to Bid".** (enclosed herewith).*

Appendix to Bid

Schedule of Adjustment Data

[For all works, adjustment factor for Labour and POL shall be considered at the rate of 5% each. Steel, Cement, Pipes, other Materials and Machinery shall contribute to 90% of Price Adjustment and shall be calculated for each work separately during preparation of estimate, shall be approved by the authority during technical sanction as a "Schedule of Adjustment Data" and shall form part of the Bid Document. The cases where the original technically sanctioned estimate gets revised, the technical sanction to the revised estimate will be obtained from the competent authority as provided under Para 3.11.2 (b) of OPWD Code, Volume-1 Based on the revised technically sanctioned estimate, the Labour & the POL component shall be given the weightage of 5% each as provided in OM No.15847/W dated 19.11.2019 of Works Department and the weightage of 90% on steel, cement, bitumen, pipes, other materials and plant and machinery spare component shall be given as per the technically sanctioned revised estimate excluding the extra items. The revised weightage of "Schedule of Adjustment Data" based on revised technically sanctioned estimate shall be included as an Addendum to the agreement. The technical sanctioning authority shall be the competent authority for this purpose.] (Works Deptt. OM No.1739/W Dt.03.02.2023)

Cl. No.31 of F2/ P1 Contracts Sl. No.	**Index description**	**Source of index**	**Base value***	**Base Date***	**Weightage of Item****	
					Sewer/Pipe line work	**Structural works**
31 (a)(i)	Other Materials	All India Whole sale price index (all commodities) as published by the Office of the Economic Advisor to the Govt. of lndia, Ministry of Commerce and lndustry.			20%	30%
31 (a)(ii)	Cement	All India Whole sale price index for Cement (Ordinary Portland Cement) as published by the Office of the Economic Advisor to the Govt. of lndia, Ministry of Commerce and lndustry.			Nil	20%
31 (a)(iii)	Steel	All India Whole sale price index for Steel (Mild Steel-Long Products) as published by the Office of the Economic Advisor to the Govt. of lndia, Ministry of Commerce and lndustry.			Nil	20%

31 (a)(iv)	Bitumen (VG-30)	Official retail price of bulk bitumen at the nearest IOC/ HPCL Depot.			Nil	Nil
31 (a)(v)	Pipes	All India Whole sale price index for the **type of pipe under consideration**, as published by the Office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry.			70%	Nil
31 (b)	Labour	Minimum Wage notified by the Labour and Employee's State Insurance Department of Government of Odisha, India.			5%	5%
31 (c)	POL	Official retail price of HSD at nearest IOCL/ HPCL/ BPCL Consumer Pump Depot.			5%	5%
31 (d)	Plant and Machinery	All India Whole sale price index for Manufacture of Machinery for Mining, Quarrying and Construction as published by the Office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry.			Nil	20%
		Total :			**100%**	**100%**

**** Values to be filled up at the time of drawl of contract.***
***** Values to be filled up in the bid document.***

6.20. If at any time after the commencement of the work the Governor of Odisha shall for any reason whatsoever not require the whole thereof as specified in the tender to be carried out the Engineer-in-charge shall give notice in writing of the fact to the contractor who shall have no claim to any payment or compensation whatsoever on

account of any profit or advantage, which he might have derived from execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out, neither shall he have any claim for compensation by reason of any alterations having been made in the original specification, drawings, designs and instruction which shall involve any curtailment or increase of the work as originally contemplated.

6.21. **Defects Liability Period:**

The defect liability is **12 months** from the date of formal taking over of the work by the Engineer-in-charge.

6.22. **Contractor Liable for Damage done & for Imperfection for 6 (six) months after Certificate:**

If the contractor or his work people or servants shall break, deface, injure or destroy any part of a building or structure in which they may be working or any building, road, fence, enclosure or grass land cultivated ground continue to the premises on which the work or any part of it is being executed or in any damage shall happen to the work while in progress from any cause whatsoever or any imperfection become apparent in it within six months from the date of the final certificate of its completion shall have been given by the Engineer-in-charge, as aforesaid, the contractor shall make the same good at his own expenses or in default the Engineer-in-charge may cause the same to be made good by other workman and deduct the expenses of which the certificate of the Engineer-in-charge shall be final from any sums that may be then or at any time thereafter may become due to the contractor or from his security or the proceeds of sale thereof or a sufficient portion thereof and the contractor shall be liable to pay of the expenses not so recovered by the Engineer-in-charge.

6.23. **Action where No Specification is mentioned:**

In the case of any class or items of works for which there is no such specification as mentioned in file, if such work shall be carried out in accordance with the detailed standard specification of Odisha, as followed by the State PWD and in the event of there being no specifications born in the said standard specification of Odisha for such items of work, then in such case the said item of work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge after obtaining approval from competent authority.

6.24. **Payment on Intermediate Certificate to be regarded as Advance and Bill to be submitted Monthly:**

A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-charge for all works executed in the previous month and the Engineer-in-charge and/or Assistant Engineer and/or Junior Engineer in immediate charge of the work shall take the requisite measurements for the purpose of having the same verified, and the claims for as admissible adjusted if possible before the expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer-in-charge and/or his Engineering subordinates

shall measure up the said work in the presence of the contractor, whose counter signature to the measurement list will be sufficient warrant, and the Engineer-in-charge and/or Assistant Engineer and/or his Engineering subordinates shall prepare a bill from such list which shall be binding on the contractor in all respects. Payment shall be made to the contractor in all respects.

The Engineer-in-charge will deduct @ **5%** (five percent) of the value of each running bill prepared and submitted by the contractor, if any, on account of works done, and such sum or sums to be held in deposit as a further security for the due performance of the condition of the contract provided always that the General Manager may refuse to make such monthly payments if in his opinion, the progress of the work or the conduct of the contractor is not satisfactory or the contractor has in any other may done or neglect to do anything as to make it appear doubtful to the authority as to whether the works will be completed by the contractor in accordance with his contract, or has failed to comply with any instruction or order of Engineering personnel. All such interim payments from time to time shall be regarded as payments by way of advance against the final payment only and not as payments of work actually done and completed and shall not preclude the requirement of bad, unsound and imperfect or unskilful work to be removed and taken away and for reconstructed or re-erected, or be considered as an admission of the due performance of the contract, of any part thereof in any respect, or accrual of any claim not shall it conclude, determine or affect in any way the powers of Engineer-in-charge and/or Assistant Engineer and/or the Junior Engineer under these condition or any of them as to the final settlement of adjustment of the accounts or otherwise or in any other way vary or affect this contract. The contractor shall submit the final bill within one month of the date for completion of the work failing which the Engineer-in-charge or his authorized representatives in the presence of the contractor shall prepare the final bill. For recording final measurement of the work, the Engineer-in-charge or his authorized representative shall serve a notice upon the contractor stipulating therein the date fixed for recording such measurement. If the contractor fails to attend the recording of final measurement by the Engineer-in-charge or his authorized representative on the date as stipulated, the Engineer-in-charge may at his discretion get the measurements recorded ex-parte or fix up another date as per his own convenience. Such measurements and the total amount payable to the contractor as certified by the Engineer-in-charge shall be final and binding on all parties.

6.25. Black Listing:

A Contractor may be black listed as per amendment made to **Appendix XXXIV to OPWD Code Vol.-II on rules for black listing of Contractors vide letter No.3365 Dt.01.03.2007 of Works Department, Odisha**. As per said amendment the Contractor may be blacklisted.

a) Misbehaviour/threatening of Departmental & supervisory officers during execution of work/tendering process.

b) Involvement in any sort of tender fixing.

c) Constant non-achievement of milestones on insufficient and imaginary grounds and non-adherence to quality specifications despite being pointed out.

d) Persistent and intentional violation of important conditions of contract.

e) Security consideration of the State i.e., any action that jeopardizes the security of the State.

f) Submission of false/ fabricated / forged documents for consideration of a tender.

6.26. If more than one bid is quoted (decimal up to two numbers will be taken for all practical purposes), either at the estimated cost put to tender or less than the estimated cost put to tender, the tender accepting Authority will finalize the tender through a transparent lottery system, where all the concerned bidders/their authorized representatives, the concerned SE/EE of the concerned Division and Divisional Accounts Officer (DAO) will remain present.

If the rate quoted by the SC and ST Category Contractors comes to the rate quoted by the Lowest bidder (decimal up to two numbers will be taken for all practical purposes, in percentage rate tenders) after availing 10% price preference as per Para 2 of Works Department Resolution No. 16262 dated. 30.10.2018, the tender shall be finalized by the tender accepting authority through a transparent lottery system along with other categories of contractors.
(Works Department OM No.17941/W Dtd.08.10.2026).

6.27 If L_1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the contractor. In that case, the L_2 bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to the condition that L_2 bidder negotiates at par with the rate quoted by the L_1 bidder otherwise the tender will be cancelled. In case a contractor is black listed, it will be widely published and intimated to all Departments of Government and also to Government of India agencies working in the State.
(As included in Para 3.5.14 Note-I of OPWD Code Vol.I vide Works Department letter No.12366/W dt.18.11.2013).

6.28. Before acceptance of tender, the successful bidder will be required to submit a work programme and milestone basing on the financial achievement so as to complete the work within the stipulated time and in case of failure on the part of the agency to achieve the milestone liquidated damaged will be imposed.
(As included in Para 3.5.18 Note-VIII of OPWD Code Vol.I vide Works Department letter No.12366/W dt.18.11.2013).

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SECTION-7

SPECIAL CONDITIONS OF CONTRACT

7.1. **Changes in Constitution of Firm:**
In the case of tender by a partnership firm, any change in the constitution of the firm shall be forth with notified by the contractor to the **General Manager/ Director/ Managing Director** for his information. In case of failure to notify the change in the constitution within 15 days, the **General Manager/ Director/ Managing Director** may by notice in writing, rescind the contract and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of the Governor of Odisha and the same consequence shall ensure as if the contract had been rescinded thereof and in addition the contractor shall not be entitled to recover or be paid for any work there for actually performed under the contract.

7.2. **Engineer's Access to Work:**
The General Manager is to have at all times access to the works, which are to be entirely under his control. He may require the contractor to dismiss any person in the contractor's employee upon the works who may be incompetent or misconduct him-self and the contractor is forthwith to comply with such requirements. Other supervising officers shall have all time access to the works.

7.3. **Workmen Compensation Act VIII of 1923:**
The Governor of Odisha shall be entitled to recover in full from contractor any amount that the Governor of Odisha may be liable to pay under Workman's Compensation Act VIII of 1923 to any workman employed in course of execution of any part of the work covered by this contract.

7.4. **Jurisdiction in the Event of Dispute:**
That for the purpose of jurisdiction in the event of dispute if any, the contract should be deemed to have been entered into within the State of Odisha and it is agreed that neither party to this agreement will be competent to bring a suit in regard to the matters covered by this contract at any place outside Odisha.

7.5. **Lighting & Sanitary Arrangement:**
Lighting & Sanitary arrangement and supply of drinking water will be made by the Contractor at his own cost for his labour camp.

7.6. **Payment of TAXES:**
The Contractor shall bear **Taxes** such as, Income Tax, Royalties, Fair Weather Charges and Tollages where necessary & **Government of Odisha** shall not entertain any claim whatsoever in this respect. Statutory deduction of **Taxes** as applicable shall be done from each running bill.

7.7. **The Building & Other Construction Workers Welfare Cess Act 1996.**
In accordance with the provisions under the said Act 1% (One) of the approved agreement value will be deducted from the R/A Bill at the time of making payment to the contractor and such amount shall be remitted in favour of The Odisha Building & Other Construction Workers Welfare Board.

7.8. **Site Clearance:**

After the work is finished or completed, surplus materials and debris are to be removed by Contractor at his own cost and preliminary works such as vats, mixing platforms, level pillars, temporary sheds and go-downs etc. are to be dismantled and all such materials removed from site. The site involved in the construction activities should be cleared and dressed properly with outward slope away form the structure. After the work is completed in all respects as per the contract, the contractor shall vacate the site within three months from the date of completion & commissioning, by making good the damages if any.

7.9. **Works to be Carried Out:**

The work to be carried out under the contract shall include all materials, labour, tools and plants, equipment and transport which may be required in preparation of and for in the full and entire execution and completion of the works. The description given in the schedule of quantities/scope of work shall, unless otherwise stated, be held to include wastage on materials, carriage & cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

7.10. **Sufficiency of Tender:**

The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the schedule of quantities (DTCN Part-II Price Bid), which rates and prices shall, except as otherwise provided, cover all his obligations under the contract and all matters and things necessary for the proper completion and commissioning of the works.

7.11. **Rates:**

The Tenderer shall quote their offer on **'Percentage Rate' (excess or less) over the estimated cost in the Price Bid appended to the tender document** for complete work in all respects. **The estimated cost is excluding GST. The rates of item basing on which estimated cost has been derived are excluding GST.** The offer shall be inclusive of cost of all materials, labour, T&P including the building and other construction workers welfare cess with surcharge, tollages, royalties, packing and forwarding, transportation, insurance, loading & unloading, storage, watch and ward, delivery of the materials to the site etc. and all other expenses incidental thereto for successful completion, testing & commissioning of the work.

GST as applicable on works contract shall be paid over the bill amount at the time of Payment of Bill.

7.12. **Transportation:**

The contractor shall be responsible for the transportation of all materials, tools and plant, equipment and machinery to the work site as may be required at site.

7.13. **Custody of the Materials:**

The contractor shall be responsible for safe custody of the materials at site and the Governor of Odisha will not be responsible for any loss or damage of the property at site.

7.14. **Construction Schedule:**

The contractor shall submit a detailed work schedule in the form of **Bar Chart** along with his tender indicating the detailed break-up of the job. This will include all operations from submission of design & drawing, procurement of materials, construction to final testing & commissioning at site to be indicated in detail with reference to the time period for each.

The construction schedule as submitted by the contractor shall be revised by the General Manager and approved with necessary modification if any after acceptance of the tender. However, the Engineer-in-Charge shall reserve the right to modify the sequence of execution of different items/components/sub-items of the project as and when found necessary & in such cases it will be obligatory on the part of the successful bidder to abide by such changes in construction schedule/bar chart as per direction of EIC. No claim and/or condition should either be put forth in any manner by the successful bidder or shall be acceptable to the EIC.

7.14(a) **Progress reports – submission by the contractor**

(1) The contractor shall submit monthly progress report of the work in a computerised form. The progress report shall contain the following, apart from whatever else may be required as specified:

(i) Project information, giving the broad features of the contract.
(ii) Introduction, giving a brief scope of the work under the contract, and the broad structural or other details.
(iii) Construction schedule of the various components of the work through a bar chart for the next three quarters (or as may be specified), showing the milestones, targeted tasks and up to date progress.
(iv) Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative up to the month, with reasons for deviations, if any, in a tabular format.
(v) Plant and machinery statement, indicating those deployed in the work, and their working status.
(vi) Man-power statement, indicating individually the names of all the staff deployed in the work, along with their designations.
(vii) Financial statement, indicating the broad details of all the running account payments received up to date, such as gross value of work done, advances taken, recoveries affected, amounts withheld, net payments, details of cheque payments received, etc.
(viii) A statement showing the extra and substituted items submitted by the contractor, and the payments received against them, items pending for sanction /decision by the Department, broad details of the bank guarantees, indicating

clearly their validity periods, broad details of the insurance policies taken by the contractor, if any, the advances received and adjusted.

(ix) Progress photographs, in colour, of the various items/ components of the work done up to date, to indicate visually the actual progress of the work.

(x) Quality assurance and quality control tests conducted during the month, with the results thereof.

(xi) **Besides above contractor shall have to submit the information required as per the decision taken in the Kick-off meeting headed by the concerned Engineer-in-Charge**.

(2) The progress report submitted by the contractor shall be checked and certified by the Junior Engineer and the Assistant Engineer, and has to be reviewed by the General Manager and the Superintending Engineer, over their dated signatures.

(3) Work of unique importance and character irrespective of the value of the work, should have videography undertaken at various stages of construction right from the day of start of work to date of completion / occupation, covering all major events, inspections, visits by dignitaries, etc.

7.15. **Initial Security Deposit/Security Deposit:**

The tenderer whose tender is selected for acceptance shall have to deposit **2% (two percent)** of the accepted tender amount as **Initial Security Deposit (ISD)** within **7 (Seven) days** of receipt of Letter of Acceptance (LoA) and sign the agreement in the prescribed form within **15 (fifteen) days** of receipt of Letter of Acceptance after depositing the ISD.

The ISD shall be deposited **in shape as mentioned at Clause 23, Section- 2(B) of DTCN.** No tender shall be accepted unless required amount of security money is deposited

In addition to the **ISD, 5%** of the bill amount shall be deducted from each bill towards the security deposit. The Initial security deposit after acceptance of tender together with the subsequent deduction from the contractor's bill shall form part of the security deposit equivalent to 7% of the contract value for the due fulfilment of the contract.

The security deposit of the contractor shall be refunded only 12 (twelve) months after the date of completion of the work provided the final bill has been paid and defects if any rectified.

If, however, there is inevitable delay in payment of final bill, the earnest money deposit and initial security deposit forming part of the security deposit may be refunded on orders of competent authority.

7.16. **Monitoring of the Project:**

Time is the essence of the contract. The execution of the project shall be closely monitored to ensure that quality; cost & time of the project are not compromised in any manner.

The contractor shall submit monthly progress reports in a format as may be prescribed by the Engineer-in-charge. The monthly progress report shall be evaluated by the General Manager vis-à-vis the approved **Bar chart & PERT Chart** and any deficiency observed thereto shall be communicated to the contractor. The contractor shall have to

make up the deficiencies within the specific time period communicated to him by the **General Manager** failing which the contractor shall be liable for action as per **Clause - 7.26**.

In addition, the contractor shall submit monthly day-wise work program one month in advance to **General Manager** for approval under intimation to the **Director/ Managing Director, WATCO, Bhubaneswar** to ensure speedy implementation of the work and effective monitoring at all levels. Failing to do so shall also invite action under **Clause-7.26**.

7.17. **Site Order Book:**

A site Order Book shall be issued to the contractor by the Engineer-in-charge or his representative. The contractor shall keep this Book always at site and any special order or instruction to be issued to the contractor shall be recorded in this Book by the Engineer-in-charge or his representative. The contractor shall sign all orders and instructions as token of his knowledge about the same. The site Order Book shall be the property of the department but will remain during the period of the progress of the work with the contractor. The safe custody of the site Order Book during this period shall be the responsibility of the contractor. After completion of the work, the Book shall be returned back by the contractor to the Engineer-in-charge, which will be enclosed in the final bill.

7.18. **Guarantee:**

Defect liability period is **12 (twelve) months** from the date of final acceptance of the work conforming to provisions in scope of work. During this period, the contractor shall replace the defective materials if any or rectify the defects if any at his own cost as pointed out by the Engineer-in-charge to the satisfaction of the later.

7.19. **Land:**

The Department may provide land if available for construction of site office to the contractor on payment of usual rent.

7.20. **Unilateral Stoppage of Work:**

Unilateral stoppage of work by the contractor without prior written permission of the Engineer-in-charge shall be considered as breach of contract and the Governor of Odisha reserves the right to take such actions as it may be deemed fit.

7.21. **Resident Engineer:**

The contractor shall engage for this work competent, qualified and authorised resident Engineers and Assistants to the satisfaction of the Engineer-in-charge. The Resident Engineer shall represent the contractor in his absence in receiving directions from officers of the Department, which will be binding on the contractor.

7.22. **Force Majeure:**

Neither the contractor nor the General Manager shall be considered in default in delayed performance of its obligation if such performance is prevented or delayed because of work to hostilities, revolution, civil commotion, epidemic, accident, fire, cyclone, flood,

earthquake or because of any law-and-order proclamation, regulations or ordinance of the Government thereof or because of any act of God or for any cause beyond reasonable control of the party affected. Should one or both the parties be prevented from fulfilling their contractual obligations a state of force majeure lasting continuously for a period of 6 months, the two parties shall consult each other regarding the future execution of the contract for mutual settlement.

7.23. **Damages to Persons and Property:**

The contractor shall take every precaution not to damage or injure adjoining or other property of any persons. He shall indemnify and keep indemnified the employee against all claims for injuries or damages to any person or any such property (including surface or land or crops in site) which may arise out of or in consequence of any negligence or default on the representatives and against all claim, demands proceedings damages, costs, charges and expenses whatsoever in respect of or in relation thereto. The Department does not take any responsibility on this account.

7.24. **Attention to Urgent Works:**

If any urgent work in the opinion of Engineer-in-charge becomes necessary to be executed and the contractor is unable and unwilling at once to carry out, the Engineer-in-charge may by his own or through other agency carry it out, as he may consider necessary. All expenses incurred on it shall be recoverable from the contractor or be adjusted against any sum payable to him.

7.25. **Safety Devices:**

i) **Scaffolding**: Suitable scaffolding shall be provided for workmen for all works that can not be safely done from the ground or solid construction except such short period of work as can be done safely from the ladders. When a ladder is used an extra labour shall be engaged for holding the ladder and if the ladder is used in carrying the materials, suitable foot holds and handholds shall be provided on the ladder.

The Engineer-in-charge will have the right to inspect the scaffolding and centring etc. for the work and can reject partly or fully such structure if found defective in his opinion.

ii) **Working Platforms**: Working platforms, gangways and stairways shall be constructed such that they do not sag unduly or unequally. If the height of the platforms or gangway or stairway is more than 3.25 meters above the ground or floor level, it shall be closely guarded, have adequate width and suitably fenced.

iii) **Safe means of access**: Safe means of access shall be provided to all working platform and other working places.

iv) **Precaution against Electrical Equipment**: Adequate precaution shall be taken to prevent danger from electrical equipment. Hand lamps shall be provided with Mesh guard, wherever required.

v) **Preventing Public from Accident**: No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or public. The contractor shall provide all necessary fencing and light to protect public from accident and shall be bound to bear expenses of defence or any suit action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precaution and to pay any damages and cost which may be awarded in any such suit action or proceedings to any such person or which may

with the consent of the contractor, be paid to compromise any claim by any such person. The contractor not to come cause blockage of traffic /disruption of the traffic.

vi) **Demolition**: Before any demolition work is commenced and also during process of work:
   a) all roads and open areas adjacent to the work site shall either be closed or suitably protected,
   b) no electric cable or apparatus which is liable to be a source of danger shall remain electrically charged,
   c) all practical steps shall be taken to prevent danger to persons employed from the risk of fire, explosion or flooding,
   d) no floor roof or other parts of the building shall be so over loaded with debris or materials as may render it unsafe.

vii) **Personal safety equipment**: All personal safety equipment shall be made adequately available by the contractor for use of persons employed at the site of work and maintained in a condition suitable for immediate use. The contractor shall take adequate steps to ensure proper use of the equipment by persons concerned.

viii) **Precaution against fire**: Suitable fire extinguishers, water and sand buckets shall be provided at the work site to tackle situations of fire.

7.26. **Rescission of Contract:**

Subject to other provisions contained in this clause the General Manager of the Department may without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, recommend the accepting authority to rescind the contract in any of the following cases:

i) If the **contractor** having been given by the General Manager a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workmen like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

ii) If the contractor being a company shall pass a resolution on the court shall make an order that the company shall be wound up or if a receiver or a **Manager** on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle to court to make a winding up order.

iii) If the contractor has, without reasonable cause, suspended the progress of the work with due diligence so that in the opinion of the **General Manager** (which shall be final & binding) he will be unable to secure completion of the work by the date of completion and continues to do so after a notice in writing of seven days from the **General Manager**.

iv) If the contractor fails to comply with the provisions of **Clause-7.15** & other relevant clauses mentioned elsewhere in this DTCN.

v) If the contractor fails to complete the work within the stipulated date or items of the work with individual date of completion, if any stipulated, on or before such

date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the **General Manager**.

When the contractor has made himself liable for action under any of the cases aforesaid, the **accepting authority shall have the powers to rescind the contract** (of which rescission notice in writing to the contractor under the hand of **General Manager** shall be conclusive evidence), **20% of the value of the left-over work** will be realized from the contractor as Penalty

7.26.1. In case of rescission of contract as per **Clause-7.26** the contractor shall have no claim to compensation for any loss sustained by him by regions of having purchased or procured any materials or entered any engagement on account of or with a view to execute the work / performance of the contractor.

7.27(a) **Conditions for Reimbursement of Levy/Taxes if Levied after Receipt of Tenders:**

i) All tendered rates shall be inclusive of all taxes and levies payable under respect statutes. However, pursuant to the Constitution (46th Amendment) Act, 1982, if any further tax or levy is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the **Managing Director, WATCO, Bhubaneswar** (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.

ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorised representative of the Department and/ or the Engineer-in-Charge and further shall furnish such other information/ document as the Engineer-in-Charge may require from time to time.

iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy, pursuant to the Constitution (Forty Sixth Amendment) Act, 1982, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

7.27(b) **Other statutory Taxes such as I.T. etc, will be deducted at sources from the bills of the contractor and deposited with concerned authority**.

7.27(c) Royalty at the prevailing rate on minerals will be deducted from the bills of the contractor and deposited with concerned authority.

7.28 **Fair Wages Clause:**

(a) The contractor shall not employ for the purpose of this contract any person who is below the age of fourteen years and shall pay to each labourer for work done by such labourers fair wages.

Explanation – "**Fair Wage**" means wages, whether for time or piece work prescribed by the State Public Works Department provided that where higher rates have been prescribed under the minimum wages Act 1948 wages at such higher rates should constitute fair wages.

The General Manager shall have the right to enquire into and decide any compliant alleging that the wages paid by the contractor to any labourer for the work done by such labourer is less than the wages as per sub-paragraph-I above.

(b) The contractor shall, notwithstanding the provisions of any contract to contrary, cause to be paid a fair wage to labourers indirectly engaged on the work including any labour engaged by his sub-contractors in connection with the said work, as if, the labourers had been immediately employed by him.

(c) In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all regulations made by Government in regard to payment of wages, wage period deductions from wages, recovery of wages not paid and deductions unauthorizedly made, maintenance of wage register, wage cards, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of a like nature.

(d) The General Manager or Manager concerned shall have the right to deduct, from the money due to the contractor, any such required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers non-payment of wages or of deduction made from his or their wages, which are not justified by their terms of the contract or non-observance of the regulations. Money so deducted should be transferred to the workers concerned.

(e) Vis-à-vis, the Government of Odisha, the contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractor.

(f) The regulations aforesaid shall be deemed to be a part of this contract and any breach thereof shall be breach of this contract.

[Odisha PWD/Electricity Department Contractor's Labour Regulations]

7.28.1. Short title – These regulations may be called "**The Odisha Public Works Department / Electricity Department Contractor's Regulations**".

7.28.2. Definitions – In these Regulations, unless otherwise expressed or indicated the following words and expressions shall have the meaning here by assigned to them respectively, that is to say -

i) **"Labour"** means a worker employed by a contractor of the Odisha Public Works Department / Electricity Department directly or indirectly through a sub-contractor or other person, or by an agent on his behalf.

ii) "**Fair Wages**" means wages whether for time or piece work prescribed by the State Public Works Department provided that where higher rates have been prescribed under the minimum wages Act, 1948 wages at such higher rates should constitute fair wages.

iii) "**Contractor**" shall include every person whether a sub-contractor or headman or agent employing labour on the work taken on contract.

iv) "**Wages**" shall have the same meaning as defined in the payment of Wages Act and include time and piece rate wages, if any.

7.28.3. **Display of Notices regarding Wages, etc**.:

The contractor shall: –

(a) Before he commences his work on contract display and correctly maintain and continue to display and correctly maintain, in a clean and legible condition, in conspicuous places on the work, notices in English and in the local Indian language spoken by the majority of the workers, giving the rate of wage prescribed by the State Public Works Department / Electricity Department for the district in which the work is done.

(b) Send a copy of such notices to the Engineer-in-charge of the work.

7.28.4. **Payment of wages**:

(1) Wages due to every worker shall be paid to him direct.

(2) All wages shall be paid in current coin or currency or in both

7.28.5. **Fixation of wage period**:

(1) The contractor shall fix the wage period in respect of which the wages be payable.

(2) No wage period shall exceed one month.

(3) Wages of every workman employed on the contract shall be paid before the expiry of ten days, after the last day of the wage period in respect of which the wages are payable.

(4) When the employment of any worker is terminated by or on behalf of the contractor, the wages earned by him shall be paid before the expiry of the day succeeding the one on which his employment is terminated.

(5) All payments of wages shall be made on a working day.

7.28.6. **Wage book and wages cards, etc**.:

(1) The contractor shall maintain a wage book of each worker in such form as may be convenient, but the same shall include the following particulars-

(a) Rate of daily or monthly wages.

(b) Nature of work on which employed

(c) Total number of days worked during each wage period

(d) Total amount payable for the work during each wage period.

(e) All deductions made from the wages with an indication in each case of the ground for which the deduction is made.

(f) Wage actually paid for each wage period.

(2) The contractor shall also maintain a wage card for each worker employed on the work.

(3) The General Manager may grant an exemption form the maintenance of wage bond, wage cards to a contractor who, in his opinion – may not directly or indirectly employ more than 100 persons on the work.

7.28.7. **Fines and deduction which may be made from wages**:

(i) The wages of a worker shall be paid to him without and deduction of any kind except the following -

(a) Fines

(b) Deductions for absence from duty, i.e., from the place of places whereby the terms of his employment he is required to work. The amount of deductions shall be in proportion to the period for which he was absence.

(c) Deductions for damage to or loss of good expressly entrusted to the employed person for custody or for loss of money for which he is required to account where such damage or loss is directly attributable to his neglect or default.

(d) Any other deductions which the Odisha Government may from time to time allow.

(ii) No fines shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deduction.

(iii) The total amount of fines which may be imposed in any one wage period on a works shall not exceed an amount equal to five paise in a rupee of the wages payable to him in respect of that wage period.

(i) No fine imposed on any worker shall be recovered from him by instalments, or after the expiry of 60 days from the date on which it was imposed.

7.28.8. **Register of fines, etc**.:

(i) The contractor shall maintain a register of fines and of all deduction for damage or loss. Such register shall mention the reason for which fine was imposed or deduction for damage or loss was made.

(ii) The contractor shall maintain a list in English and in the local Indian language, clearly defining acts and omissions for which penalty of fine can be imposed. It shall display such list and maintain it in a clean and legible condition in conspicuous places on the work.

7.28.9. **Preservation of register**:

The wage register, the wage cards and the register of fines, deduction required to be maintained under the regulations shall be **preserved for 12 (twelve) months** after day of the last entry made in them.

7.28.10. **Powers of Labour Welfare Officers to make investigation or enquiry**:

The Labour Welfare Officers or any other persons authorized by the Government of Odisha on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of the fair wage clauses and the provisions of these regulations. He shall investigate into any complaint regarding default made by the contractor, sub-contractor in regard to such provisions.

7.28.11. **Report of Labour Welfare Officers**:

The Labour Welfare Officer or others authorized as aforesaid shall submit a report of the results of his investigation or enquiry to the General Manager concerned, indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor bill be made and the wages and other dues be paid to the labourers concerned.

7.28.12. **Appeal against the decision of Labour Welfare Officer**:

Any persons aggrieved by the decision and recommendation of the Labour Welfare Officer or other person so authorized may appeal against such decision to the Labour Commissioner within 30 days from the date of decision forwarding simultaneously a copy of his appeal to the General Manager concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

7.28.13. **Inspection of register**:
The contractor shall also allow inspection of the wage book and wage cards to any of his workers or to his agent at a convenient time and place after due notice is received, or to the Labour Commissioner or any other person authorized by the Government of Odisha on his behalf.

7.28.14. **Submission of return**:
The contractor shall submit periodical returns as may be specified from time to time.

7.28.15. **Amendments:**
The Government of Odisha may from time to time, add to or amend these regulations and on any question as to the application, interpretation of effect of these regulations, the decision of the Labour Commissioner or any other person authorized by the Government of Odisha in that behalf shall be final.

7.28.16. **Quality assurance plan:**
Work, supply of mechanical equipment, electrical panel, mandatory spares or services should offer by the contractor followed with quality assurance plan to the department before taking up the work. A quality assurance plan **(QAP)** has to be approved by the competent authority before taking up work, supply of equipment & services.

7.28.17. The quoted rates must include cost towards DMF (@10% of Royalty), EMF (@5% of Royalty), Additional Charges as applicable in addition to royalty of minor minerals used in the project. The same shall be realised from the R/A Bills of contractors on failure to production of money receipt towards payment of same.

The terms and conditions of the agreement have been read by Me/Us and I/We certify that I/We clearly understand them and agree to abide by them.

Contractor

SECTION-8
SCOPE OF WORK

8.1 GENERAL

The intent of this Section is to specify the work items to be covered on **'Percentage Rate Basis'** in conformity with the technical specifications as enumerated in the subsequent clauses for the work, **"DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS".**

8.2 Design Standards & Codes to be adopted

- CPHEEO Manual on Sewerage and Sewage Treatment Systems (2013)
- CPCB/SPCB discharge norms
- Relevant IS Codes for RCC, **FRP, MS,** electrical and mechanical systems
- BIS standards for materials and equipment

8.3 Project Description

It is proposed to adopt a treatment scheme wherein hospital wastewater shall first undergo Physico-Chemical treatment in an Effluent Treatment Plant (ETP) comprising coagulation, flocculation, and sedimentation for reduction in concentration of BOD, COD and TSS. The treated effluent from the ETP shall thereafter be combined with domestic/sanitary sewage and further treated in a Sewage Treatment Plant (STP) based on either of the following technologies to achieve the desired effluent standards:

- Two-stage MBBR (Moving Bed Bio- Reactor) (Anoxic + Aerobic), or
- SBR (Sequencing Batch Reactor), or
- MBR (Membrane Bioreactor), or
- SABRE Technology (Stabilised Aerobic and Anaerobic Bio-engineered Reaction Environment)

To achieve the desired effluent standards, tertiary treatment provision shall be made whreever required.

However, where an independent dedicated Effluent Treatment Plant (ETP) is proposed, the system shall include complete treatment units comprising Physico-Chemical (Primary) Treatment, Secondary (Biological) Treatment, and Tertiary Treatment processes, duly designed to achieve the prescribed effluent discharge standards.

The detailed engineering design shall be carried out by the selected agency.

The proposed capacities of STP/ ETP shall be as follows:

- STP Capacity: **225 KLD**
- ETP Capacity: **75 KLD**

8.4. Location:

Town: **Kataka**
District: **Kataka**
State: **Odisha**
Connected to: **Bhubaneswar**
Nearest Railway Station: **Kataka**

8.5. Broad items of work to be executed:

1	Detailed Engineering, Designing, Drawing, Supplying, Laying, Testing & Commissioning of Sewer line including submission of As-built Drawing.
2	Construction of Inspection Chamber, Manhole Chamber
3	Design, Drawing, Construction, Testing & Commissioning of ETP and/or STP including all Electro-mechanical works.
4	Online effluent quality monitoring alongwith SCADA & Automation Facility
5	Construction of Sump for storage of treated used water
6	Installation & Commissioning of Mechanical, Electrical and Instrumentation Works including all associated works etc.
7	Re-use and/ or disposal facility of treated used water
8.	External Electrification with Installation of Transformers and DG Set
9.	Road restoration work including all associated works etc
10.	O & M for 5 (five) years

The detailed item wise quantities of different works have been reflected in the Bill of Quantities (Part-II, Price Bid of DTCN). However, the quantities may vary as per actual site requirement during execution.

The bidder shall visit the work site, get acquainted with the works to be done, collect all required information prior to bidding. The scope of work broadly includes, conducting soil testing, surveying, preparation of design & drawings, execution of work as per specifications and approved drawings, testing & commissioning, submission of as-built drawings etc.

A detailed Scope of Work and Technical Specifications are enumerated in Section-9.0 of DTCN.

8.6 Scope for Operation and Maintenance of Sewerage system.

8.6.1.1. **Operation & Maintenance obligations of the Contractor**

8.6.1.1. The Contractor shall operate & maintain the infrastructure developed by him under the Sewerage Project for a period of 5 (five) years] commencing from the date of issue of the Provisional Certificate (the "**Operation &Maintenance Period**").

8.6.1.2. During the Operation &Maintenance Period, the Authority shall provide to the Contractor access to the Site for Operation &Maintenance in accordance with this Agreement. The obligations of

the Contractor hereunder shall include but not limited to the following: -

(a) permitting safe &smooth functioning of Sewerage Project;
(b) undertaking routine maintenance including prompt repairs of Civil, Electrical, Mechanical installations & automation including pipe lines;
(c) undertaking repairs to structures;
(d) informing the Authority of any un authorized use of the Sewerage Project;
(e) informing the Authority of any encroachments on the Sewerage Project; and
(f) operation and maintenance of all collection and conveyance systems necessary for the efficient operation & maintenance of the Sewerage Project in accordance with the provisions of this Agreement.

8.4.1.2. In respect of any Defect or deficiency not specified in scope, the Contractor shall, atits own cost, undertake repair or rectification in accordance with Good Industry Practice, save and except to the extent that such Defect or deficiency shall have arisen on account ofany default or neglect of the Authority or a Force Majeure Event.

8.4.1.3. The Contractor shall remove promptly from the Sewerage Project any waste materials (including hazardous materials and waste water), rubbish and other debris (including without limitation, accident debris) and keep the Sewerage Project in a clean, tidy and orderly condition, and in conformity with the Applicable Laws, Applicable Permits and Good Industry Practice.

8.7 Operation &Maintenance Requirements

The Contractor shall ensure and procure that at all times during the Operation &Maintenance Period; the Sewerage Project conforms to the operation &maintenance requirements as per the direction of Engineer-in-charge. (the "**Operation &Maintenance Requirements**").

8.8 Operation &Maintenance Programme

8.8.1 The Contractor shall prepare a monthly operation &maintenance programme (the **Operation &Maintenance Programme**") in consultation with the Authority and submit the same to the Authority not later than 10 (ten) days prior to the commencement of the month in which the Operation &Maintenance is to be carried out. For this purpose, a joint monthly inspection by the Contractor and the Authority shall be undertaken. The Operation &Maintenance Programme shall contain the following:

8.8.1.1 The condition of the Civil, Electrical, Mechanical installations & automation including pipeline in the format prescribed by the Authority,
8.8.1.2 the proposed operation &maintenance works; and
8.8.1.3 deployment of resources for operation &maintenance works.

8.9 Safety, vehicle breakdowns and accidents

8.9.1 Zone closure

8.9.2 The Contractor shall not close any Zone of the Sewerage Project for undertaking operation &maintenance works except with the prior written approval of the Authority. Such approval shall be sought by the Contractor through a written request to be made at least 10(ten) days before the proposed closure of Zone and shall be accompanied by particulars thereof. Within 5 (five) business days of receiving such request, the Authority shall grant permission with such modifications as it may deem necessary.

8.9.3 Upon receiving the permission pursuant to Clause 8.9.2, the Contractor shall be entitled toclose the designated Zone for the period specified therein, and in the event of any delay in re-opening such Zone, the Contractor shall, for every stretch of 250 (two hundred and fifty) metres, or part thereof, pay Damages to the Authority calculated at the rate of 0.5% (zero point five per cent) of the monthly operation &maintenance payment for each day ofdelay until the Zone has been re-opened for Sewage flow.

8.10 Reduction of payment for non-performance of Operation &Maintenance obligations

8.10.1 Failure to Operate/ Maintain: In case of failure to operate or maintain any component for more than 24 hours, a penalty calculated at the rate of 0.5% (zero point five per cent) of the monthly operation &maintenance payment for each 24 hours of delay shall be levied.

8.10.2 Non-Compliance with Standards: Non-compliance with effluent quality or operational standards shall attract a penalty calculated at the rate of 0.5% (zero point five per cent) of the monthly operation &maintenance payment for each 24 hours of delay per violation.

8.10.3 Delay in Rectification: Failure to rectify faults within the stipulated time shall attract additional penalties calculated at the rate of 0.5% (zero point five per cent) of the monthly operation &maintenance payment for each 24 hours of delay.

8.10.4 Repeated Negligence: Continuous non-compliance more than 5 times in a year may lead to recession of the contract.

8.10.5 On non-compliance of the defect rectification/non attaining the complaint, the work will be executed by another agency. The expenditure amount incurred towards rectification of above defect, will be deducted from the bill of the bidder.

8.11 Authority's right to take remedial measures

In the event the Contractor does not maintain and/or repair the Sewerage Projector any part thereof in conformity with the Operation &Maintenance Requirements, the Operation &Maintenance Manual or the Operation &Maintenance Programme, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the Operation &Maintenance Inspection Report or a notice in this behalf from the Authority, the Authority shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to undertake such remedial measures at the costof the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Contractor to the Authority as Damages.

8.12 Restoration of loss or damage to Sewerage Project

Save and except as otherwise expressly provided in this Agreement, in the event that the Sewerage Project or any part thereof suffers any loss or damage during the Operation &Maintenance from any cause attributable to the Contractor, the Contractor shall, at its cost and expense, rectify and remedy such loss or damage forthwith so that the Sewerage Project conforms to the provisions of this Agreement.

8.13 Overriding powers of the Authority

8.13.1 If in the reasonable opinion of the Authority, the Contractor is in material breach of its obligations under this Agreement and, in particular, the Operation &Maintenance Requirements, and such breach is causing or likely to cause material hardship or danger tothe Users and pedestrians, the Authority may, without prejudice to any of its rights under this Agreement including Termination thereof, by notice require the Contractor to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.

8.13.2 In the event that the Contractor, upon notice under Clause 8.13.1, fails to rectify or remove any hardship or danger within a reasonable period, the Authority may exercise overriding powers under this Clause 8.13.2 and take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it for rectifying or removing such hardship or danger; provided that the exercise of such overriding powers bythe Authority shall be of no greater scope and of no longer duration than is reasonably required hereunder; provided further that any costs and expenses incurred by the Authority in discharge of its obligations hereunder shall be recovered by the Authority from the Contractor, and the Authority shall be entitled to deduct any such costs and expenses incurred from the payments for the performance of its Operation &Maintenance obligations.

8.13.3 In the event of a national emergency, civil commotion or any other circumstances, the Authority may take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it, and exercise such control over the Sewerage Project or give such directions to the Contractor as may be deemed necessary; provided that the exercise of such overriding powers by the Authority shall be of no greater scope and of no longer duration than is reasonably required in the circumstances which caused the exercise of such overriding power by the Authority. It is also agreed that the Contractor shall comply with such instructions as the Authority may issue in pursuance of the provisions of this Clause 8.13.3, and shall provide assistance and cooperation to the Authority, on a best effort basis,for performance of its obligations hereunder.

8.13.4 Consumables and Chemicals

The Operation & Maintenance Agency shall be solely responsible for the procurement, supply, storage, and utilization of all consumables, chemicals, lubricants, disinfectants, and any other materials required for the smooth and uninterrupted operation of the Sewage Treatment Plant (STP) and/or ETP, pumping stations, sewage lines etc. All such costs shall be borne entirely by the Agency and no separate payment shall be made by the Authority. Failure to maintain adequate stock or to use the required quality and quantity of consumables and chemicals, resulting in disruption of services or deterioration in performance standards, shall attract penalties as specified under the penalty clause of this contract.

N.B.: -

1. **The above scope of works is not exhaustive but gives only an idea about the type of work involved. Any other items/works, which have not been specifically mentioned but required for completeness and soundness of the systems, shall be done by the executing agency.**

2. **For all civil works the layout drawing, structural drawing & design, hydraulics design to be approved by the authority before execution.**

3. **For all mechanical, electrical and automation work, the individual items QAP to be submitted including make and specification to be approved by the authority before execution.**

4. **Any other miscellaneous work required as per specifications, codes etc. but not specifically mentioned in scope of work shall form part of scope of work.**

5. **Contractor shall take the necessary precautions to avoid the damage to other services such as water supply lines, telephone &electrical cables, storm water drains etc. In case of any damages to any of the services, contractor shall be responsible for restoring the facilities in bare minimum time at his own.**

   However, in case where shifting of utilities is required for execution of sewerage project, the executing agency shall inform the authority in advance and provide all logistic support for obtaining necessary permission from the concerned owning authorities. The expenditure to be incurred for the said purpose shall be borne by the Authority.

6. If any mismatch is observed between the specifications reflected in the BoQ and the corresponding details mentioned in Section-8 & 9 of DTCN or, if specification of any item/component/sub-item is not mentioned in the DTCN/BoQ then, in such cases, decision of the Engineer-in-charge shall be final & binding.

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SECTION – 09

TECHNICAL SPECIFICATIONS & DESIGN CRITERIA

9.0 General

9.0.1 The bidder before bidding shall visit the site at his own cost and shall satisfy himself with the nature and extent of the work involved, actual site conditions, and existing facilities. Shall collect any other information which may be required before submitting the tender. Any claim in this regard shall not be entertained.

9.0.2 The scope of work for the Sewerage scheme covers surveys including Topographical survey, Geo-technical survey, untreated sewage testing, design & detailed engineering of all components of the scheme, do the necessary changes as per site condition, develop detail drawing and getting approval from Engineer-in-Charge, supply of equipment and construction materials, testing at manufacturer's works, delivery up to site, erection, execution of works as per the work described under "Scope of Work" or elsewhere in the tender and as per IS codes, CPHEEO, OPWD specifications and detailed specifications attached hereto, final check-up, painting, testing, commissioning including hydraulic testing of all water retaining structures and pipes with fittings, valves, etc. as per relevant IS codes and relevant specification.

9.0.3 The work shall be carried out according to the design / drawings submitted by bidder and approved by Engineer-in-Charge. For building, facilities, systems, structures, etc., necessary layout and details are furnished with tender document. Any changes, if required, shall be done by the bidder keeping in view the scope, minimum specified requirement, the statuary and functional requirement and providing enough space and access for operation, use and maintenance. The bidder's work shall cover the complete requirement as per tender specification.

9.0.4 The work to be performed under the specification consists of providing all labours, supervision, materials, scaffolding, construction power, fuel, construction water, and construction equipment, testing equipment, tools and plants, supplies, transportation and all incidental items not shown or specified but necessary for successful completion of the work.

9.0.5 The nature of work generally involves site clearance, excavation in all types of soils, foundation preparation, dewatering and its disposal, backfilling, disposal of surplus excavated material, supply of all construction material and supply of all necessary plant machinery and equipment, etc., construction with the materials of specified quality, constructing drains, embedding, encasement of pipes, cleaning the site from all waste and surplus material after completion of work and other ancillary work as per specifications, as per drawings submitted by the contractor and approved by the Engineer-in-Charge.

9.0.6 Any items of work, either supply and / or erection of material / equipment which have not been specifically mentioned in the scope / specifications but are necessary for operation and guaranteed performance of the entire sewerage scheme, and equipment offered shall be deemed to be included within the scope of these specifications and shall be provided by the bidder without any additional cost.

9.0.7 All material / equipment which have been mentioned and have not been specifically mentioned in the scope / specifications but are necessary for operation and guaranteed performance of the entire sewerage scheme. Contractor shall have to obtain written approval of make of any item from Engineer-in-Charge before supply.

9.0.8 The scope of work also includes shifting of electrical/ telephone/ any other type of cable, electric poles, water, sewer or any other type of pipeline or any other facility. Any arrangement for crossing roads, drains, nallah including bypass arrangement and their restoration to the satisfaction of Engineer-in-Charge after completion of particular work also included in the "Scope of work".

9.1 Services to be Provided by the Contractor

9.1.1 Deleted.

9.1.2 Deleted

9.1.3 The Contractor will make necessary arrangement for power and water required for construction activity

9.1.4 The Contractor shall make necessary arrangement for all the testing and inspection to be conducted in a manner as specified in the specifications and as per codes.

9.1.5 Transportation of all equipment / raw material / spares from manufacturers work to the project site, inclusive of all intermediate handling and unloading / storage at site and all taxes, etc.

9.1.6 Supply, erection as per manufacturers recommendations / specifications, inspection, testing, start up and running of the equipment during trial run / performance guarantee period at rated capacity and speed.

9.1.7 Deploying qualified and experienced staff for supervision of all erection and commissioning services. The Contractor shall also arrange for rectifying the defects during defect liability period.

9.1.8 During **defect liability period of one year,** the contractor has to replace any equipment, component, etc. for manufacturing defect, malfunctioning and below rated performance. He will make good any structure or part of it if found defective or becomes during functioning.

9.1.9 Application of the final paints and final finishing work shall be done by the Contractor after complete erection and testing, trial run but before handing over to the department.

9.1.10 The contractor shall also arrange technical experts of equipment from proprietary supplier as and when necessary, till the commissioning, trial run and performance guarantee period of the equipment.

9.1.11 Any survey/ leveling/ fixation of bench mark/ reference level required for detailed engineering of any component of the scheme will be done by survey team deputed by contractor. The survey team will carry out the area survey and leveling of SPS, STP compounds or wherever required as per the instruction of Engineer-in-Charge.

9.1.12 The detailed scope of work has been mentioned in Section 8.0 of this DTCN and Bill of Quantities.

9.1.13 Nothing extra over the quoted price shall be paid to contractor on account of any financial implications of all the conditions and specifications. It will be treated that necessary financial provisions are deemed to have been kept in the quoted price. Any contiguous item or any provision / requirement, if not included in the general specification and scope of work, special specification and detailed specification but necessary to be provided for the completion of the work and for its functional necessity, shall be provided at no extra cost above quoted price. The decision of the Engineer-in-Charge in such cases shall be final and biding on the contractor.

9.1.14 The time is the essence of this contract. The entire work described under "Scope of Work" section 8.0 or elsewhere in the tender (Design, approval of design & drawings, execution and commissioning) is to be completed within a time frame of **12 (Twelve) calendar months** from the date of issue of work order.

9.2 The work involves under these specifications

The work shall be carried out according to the detailed specifications, IS codes and OPWD/CPHEEO/PHEO specifications. The design/drawings shall be submitted by the contractor and approved by Engineer-in-Charge. For building, facilities, systems, structures etc., necessary layout and details are to be developed by the bidder keeping in view the scope, minimum specified requirement, the statutory and functional requirement and providing adequate space and access for operation, use and maintenance. The bidder's work shall cover the complete requirement as per tender specification.

9.3 The Geo-technical investigation at locations of sewage pumping stations, sewage treatment plant (STP)/ETP & other RCC **/ MSEP / MS-FRP/ FRP** structures shall be carried out by the contractor for structural design of civil structures proposed in the compound or as required.

9.4 Preparation of work areas, clearing site, jungle clearance etc. in the entire area including dismantling and removing of any existing above ground and underground structures including existing roads, uprooting of all the trees, debris and vegetation and their disposal, shifting of pipes, cables, electrical poles etc. The dismantled and removed material shall be stacked/ disposed as per direction of Engineer in Charge. The bidders should visit the site prior to submission of bid and make himself conversant with the site conditions to estimate the dismantling/removing work. Shifting of electrical or any other type of cables, electric poles, water, sewer, gas or any other type of pipeline or any other facility, their restoration to the satisfaction of Engineer-in-Charge after completion of work.

~~i.~~ Repair to damages caused during construction to any existing road, bridge, culvert, water supply line, sewerage line, drain, electricity cable & pole, gas pipeline and telephone line, etc. shall be reinstated as per the original specification and satisfaction of concerned Authority.

ii. Cutting of road surface for taking of sewer/pipeline at required depth will be done with making good to the damages by mending & restoring to existing condition.

iii. Supplying & Filling in foundation and plinth with sand watered and rammed including cost of

sand & labour, T & P all complete.

9.5 Sewer Network:

Locations of sewer:

The gravity sewer shall be located under the street/road. In general, gravity sewers shall be located along the center of the road to serve both sides of the street.

The sewer line shall be laid as per road width i.e. for road width from 9m, 12m,15m & 18m the sewer line shall be laid along center of road and for road width 30m & 60m the sewer line shall be laid both side edge of road.

The contractor shall excavate trial pits on the street for assessing underground utilities for the purpose of alignment of sewer. The trial pits shall be filled up and damages repaired to restore to the pre-excavation condition.

Sewer Connections

The pipe shall meet the requirements of IS:14333 / IS:783-1985 (Latest edition) and should preferably bear ISI mark. The sewers shall be laid as per IS (Latest edition). The house sewers shall have a minimum slope of 1:60. Required type of bedding (Granular/CC/Sand) shall be provided below the pipes. House connection sewers shall be connected from Inspection Chambers to the nearest Manhole chambers of street sewers. Independent house sewer from IC to Stack line and / or GTC shall be provided

Sewer Construction

All sewers shall be laid with straight alignments between manholes. The contractor shall set Temporary Bench Marks (TBMs) with respect to the Survey of India Bench Marks (GTS Bench Marks). The personnel of contractor shall constantly check line and grade of the pipe.

Cement for sewer and chambers

Sulphate resisting cement confirming to IS 12330:1988 shall be used in manufacture of sewers and construction of manhole chambers, and units of Sewage Treatment plant.

Excavation of sewer trench

Excavation of sewer trenches shall be done as per the approved drawing. The trenches should not be opened in advance of the laying of the sewer pipe for a distance greater than that required to install the sewer pipe. Backfill in the excavated trenches shall be done immediately after jointing the pipe to prevent movement. Testing of the pipeline shall be done prior to refilling the trench in order to ascertain the leakage at joints. Shoring, sheeting and benching of trench is to be provided to prevent caving during excavation, to protect adjacent structure, property, workers and the public. Sheeting shall be maintained in place until the pipe or structure has been placed and backfilled. Shoring and sheeting shall be removed, as the backfilling is done, in a manner that will not damage the pipe or structure or permit voids in the backfill.

The contractor shall furnish, install and operate all necessary machinery, appliances and equipment to keep the excavations reasonable free from water during construction and shall dewater and dispose of the water so as not to cause injury to public or private property or to cause a nuisance or menace to the public. The control of ground water shall be such that softening of the bottom of excavations or formation of “quick” conditions or “boils” shall be prevented. Dewatering system shall be designed and operated so as to prevent the removal of the natural soils. The trench shall be dewatered until bedding and pipe laying are complete.

Pipe bedding

The contractor shall provide Class-A (a,b,c,d), Class B bedding below the DWC & RCC sewer line as per the CPHEEO manual and as per design requirement.

Pipe laying in water logged area

The contractor needs to take care during laying pipeline in water logged area. The special treatment shall be provided for strata improvement; contractor need to design anti floatation blocks considering site ground water level.

Pipe laying and jointing

The contractor shall provide trench excavation, pipe bedding and backfill as per specification. Pipe laying shall begin at the downstream end of a sewer segment and progress upstream, with socket ends upstream. When laying is not in progress, the open end of the pipe shall be kept tightly closed with pipe plug. Pipe shall be lowered into the trench in such a manner as to avoid any physical damage to the pipe. Pipe shall not be dropped or dumped into trenches under any circumstances.

Manhole Chambers

Manhole Chambers on the sewer line shall be as per IS:4111 (Part-I)- 1986 with Latest edition & amendments and the "CPHEEO Manual on Sewerage and Sewage Treatment". The contractor shall submit drawing and design of manholes to the Authority for approval prior to commencing the works. The manhole chambers shall be designed as per relevant IS Code/CPHEEO Manual specifications. The Manhole Chambers shall be made up of Pre-cast/ Cast-in-Situ Reinforced Cement Concrete.

Location

Manholes shall be installed at the end of each gravity sewer, at all changes in grade, size or alignment, at all sewer intersections and at distances not greater than 30m where house connections are to be provided. For other places Manhole spacing shall be governed by the guide lines provided in the CPHEEO Manual on Sewerage and Sewage Treatment.

Manhole shall be provided on the sewer line for house service connections. Where service laterals connect to a manhole, an invert shall be constructed wherever possible to provide a smooth flow line. Where the drop is 0.6m or greater, service drop connection with cleanout shall be provided.

Manhole covers and frames

The manhole chambers shall be closed at top by SFRC **/ F R P** manhole cover. The manhole cover and frame shall be surrounded by M25 grade concrete **as applicable**. The manhole cover shall conform to IS 12592:2002 (Latest edition) and shall be accurately set to the level and slope of finished road surface. The size of the manhole covers shall be such that there shall be clear opening of not less than 560mm dia for manholes exceeding 0.9m depth. Manhole covers of Extra Heavy Duty (EHD-35) shall be provide in major roads subjected to heavy traffic movement, and for other roads the Man hole covers of Heavy Duty (HD-20) shallbe provided as per direction of the Engineer-in Charge. PVC encapsulated CI rungs shall be provided inside the manholes.

Repair of municipal drains

The municipality surface drains / storm water drain/ culvert damaged during execution of work shall be repaired and brought back to its original shape and size.

Repair of Roads

Repair of road damaged due to excavation of trench is included in the scope of the work and shall be carried out as per standard specifications and shall be brought to the pre-excavated condition to the satisfaction of the Authority and acceptable to the road owning authority.

Continuity Test /Hydraulic Testing

Continuity of the pipe segments in between two manholes is required to be ensured in the same modality as practiced for non-pressure RCC pipeline. Hydraulic testing of pipes shall be done, if specifically asked for by the client for any specific stretch. The procedure for hydraulic testing shall be similar to that for non-pressure RCC pipes.

Hydraulic testing of pipes shall be done, if specifically asked for by the client for any specific stretch. The procedure for hydraulic testing shall be similar to that for non- pressure RCC pipes.

Sand Filling

After the pipe line is tested successfully, the trenches shall be filled up after receipt of written permission of the Authority. For the trenches excavated within the carriage way of roads, the backfill should be done with river sand or selected excavated material as per the direction of Engineer-in Charge. The filling materials shall be free from boulders, sharp objects and rubbish etc and shall be approved by the Authority. The back filled materials should be well watered and consolidated to 90% of maximum density at optimum moisture content. Proper care should be taken to see that rising main level and alignment are not disturbed.

Backfilling Of Trenches

Backfilling of the trenches shall not be commenced till the pipes are tested and till approval for filling of the trenches is given by the Engineer.

Backfilling of the trenches shall be done with sand as approved by the Engineer. The filled-up material shall be well watered and consolidated, taking proper care to see that pipe level and alignment are not disturbed. Particular care shall be taken not to cause unequal loading or damage of any sort to the pipe.

Backfill materials shall be compacted to 90% of maximum density at optimum moisture content as per IS 2720 (Part 8), with approved mechanical compactors in layers having a maximum depth of 150 mm.

Testing Of Sewer Pipe Line

Each section (from manhole to manhole) of the sewer shall be tested for water tightness as per IS 783 before being put into service. The test should be a hydrostatic test performed by filling the pipe line with water and raising the pressure to the selected test pressure as decided by the Engineer in charge which should not be less than the maximum pipe line operating pressure with surge pressure, if any, and should not exceed the hydrostatic proof test pressure and maintaining this for a sufficient period to allow for absorption of water by the pipe material. A graph of quantity of water to maintain the test pressure against time is to be plotted which will show when absorption of water is substantially completed.

Any sewer or part thereof that does not meet the above requirements shall be repaired, or re-laid and tested again.

The Contractor shall be bound to follow the instructions of the Engineer regarding the test procedure, test pressures, lengths of sections for testing etc. The tests shall be carried out only in the presence of the Engineer.

Disposal Of Surplus Excavated Materials

All the excavated materials shall be the property of the Authority. All hard materials, such as hard mortar, rubber etc. not intended for use shall be stacked neatly as specified and as directed by the Engineer-in Charge.

Unsuitable and surplus materials not intended for use shall be separated out and disposed of at a predetermined place selected by the Authority.

Dewatering

Attention of the Contractor is drawn to the fact that water table may be high at some places, even during the dry season.

Ground and surface water shall be controlled to the extent that excavation and pipe installation can proceed in the specified manner and such that the trench bottom is not disturbed to the detriment of the pipe installation. Trench water shall not be permitted to enter the pipe being installed unless approval is received from the Engineer.

If necessary, pumps and well points, or other suitable (subject to the approval of the Engineer) equipment shall be deployed to keep excavations free of water. Caution shall be exercised to make sure that foundations in proximity to sewer excavations are not adversely affected by the excavation or dewatering process.

Discharge from pumps, well points, or other dewatering equipment shall be located and controlled so that loss, damage, nuisance or injury to the public property is not occurred

Wooden Shoring

Attention of the Contractor is drawn to the fact that most of pipe laying will require the use of shoring equipment which will be compulsory at any time when the excavated depth in trench exceeds 1.20 m, which is as per health and safety regulations. Trenches shall be maintained such that pipe can be installed by not allowing water, silt, gravel or other foreign material into the pipe. Material remaining in the trench bottom on completion of excavation by machine which has been disturbed or softened by workmen or trench water, shall be removed before bedding material is placed.

9.6 Sewage Pumping Stations (SPS)/ Manhole Pumping Stations (MHPS):

The work relates to Engineering, Procurement, Construction, Testing and Commissioning of Sewage Pumping Station. The Intermediate pumping stations will collect sewage from their respective catchments and pump to nearby Ridge Manholes / IPS/STP such that these flows will reach the STP.

The scope of work is not exhaustive but gives only an idea about the type of work involved. The works shall have to be executed in accordance with the detailed scope of work, specifications and conditions of the bid document, approved design and drawing.

The scope of work is Topographic survey& Geotechnical investigation at the sewage pumping station area, Design and detailed Engineering, Supply, Erection, Testing and Commissioning of all related Civil, Mechanical, Electrical and Instrumentation works for the Sewage Pumping Stations. These pumping stations collect sewage from different catchment areas and pump to the nearby ridge manholes such that these flows will reach the Sewage Treatment Plant through proposed sewer network.

The scope of the work shall include but not be limited to the following:

Design, Construction of Sewage Pumping Stations (SPSs)/ MHPS, supply & Installation of Pumping machineries including Topographical and Geotechnical Survey including Subsoil Investigation for Water Table and Safe Allowable Bearing Capacity. Subsoil Investigation shall be carried out by the Contractor through a reputed and specialized firm approved by the Authority for confirmation of Geotechnical data. All the pumping sets shall be Submersible sewage pumps with energy efficient motors and confirm to relevant IS specifications, andprovided with Variable Frequency Drive (VFD).

Site Development including but not be limited to the following works need to bedone to facilitate construction work

Cutting of Trees, Plants, Bushes and Shrubs etc. and removing the same from theSite.

Demolishing the existing Structures if any and removing the debris from Site.Shifting of Pipe Lines, Cables

and Poles etc. if required.

Leveling and grading to improve the aesthetics.Arranging Construction Power & Water.

Preparation of Process, Hydraulic, Civil, Mechanical, structural, Piping, Electrical and Instrumentation Design and Drawings including Construction, Architectural and As-built Drawings.

Supply, Erection, Testing & Commissioning of all the Pumping sets & Mechanical Equipment as detailed in Mechanical Specifications.

Obtaining incoming HT Power Supply from State Electricity Authority **(TPCODL/ TPSODL/ TPNODL/TPWODL)** from nearby Source to the STP Site. All necessary Deposits and Documents shall be arranged by the Contractor.

Supply, Erection, Testing & Commissioning of all the Electrical Equipment's including HT and LT Equipment's as detailed in Electrical Specifications.

Supply, Erection, Testing & Commissioning of all the Instrumentation Equipment's as detailed in Specifications.

PLC/ SCADA based Automation System as detailed in Specifications.

Hydraulic testing of the Pumping Stations and piping as per Tender specifications. It is to be noted that the contractor shall arrange water and power for the hydraulic testing of all related units, piping etc.

Trial Run of the constructed & hydraulically tested Pumping Stations as per Tender specifications.

Supply of all Spares, Tools & Tackles required during Performance Run and O & M Period.

Repairing & reconditioning of all the equipment's in the concluding year of the Operation & Maintenance Period to such a condition that they are in running condition with regular preventive and recommended maintenance.

Providing "on the job" training to the Authority's personnel.

Preparation and submission of As-Built Drawings and Operation & MaintenanceManuals for Mechanical, Electrical & Instrumentation Items.

Any other Items which have not been specifically mentioned in specifications but are necessary for construction of the Plant as per good engineering practice, safety norms and successful operation and guaranteed performance of the entire Plant shall be deemed to be included within Scope of Work and shall be provided by the Contractor without any extra cost to the Authority.

All pumps shall be automatically controlled from level switches in the wet well.

The drawing showing the Layout of Sewage Pumping Stations, General arrangement and structural drawings are to be furnished by the contractor for approval by the Authority before execution of the work. Before execution of the work the contractor has to make survey of the entire area and familiarize with geotechnical and other aspects for the construction of the Sewage Pumping Stations. It is to be noted that the contractor shall prepare and get approval from the Authority for the construction drawings of the Sewage Pumping Stations before ordering the pumps and pipe work. The datum for elevation shall be Mean Sea Level.

9.7 Sewage Pumping Mains

a. Detailed engineering of sewage pumping mains, water hammer / surge protection system including allied works, thrust blocks, etc. as per CPHEEO manual.

b. Excavation of trenches in all kind of soils, including shoring and shuttering, wherever required, as per the approved alignment up to the depth to maintain minimum one meter earth cover over crown of the pipe for laying of pipes and fittings, including proper stacking of excavated soil/material, backfilling and disposal of surplus material.

c. Supply, laying & jointing of sewage pumping main pipes and conforming to relevant IS codes and as shown in relevant drawings and detailed specifications.

d. The pipes shall be DI- K9 confirming to IS: 8329:2000(Latest edition) with its inside cement mortar lining using sulphate resistance cement and outside coated with Zinc, and suitable for Socket and Spigot joints using rubber gaskets. The Rubber gaskets shall be of EPDM rubber and confirm to IS 5382 with latest amendment and should have ISI mark on it. Ductile iron fittings (Tee, tail piece, bend etc.) shall be conforming to IS 9523:2000 with latest amendment as per site requirement & as per instruction of the Authority. This shall be applicable to all MPS/IPS.

e. Deleted

f. Procurement, Inspection & Testing of DI pipes and fittings:

The successful bidder shall source all ISI Marked Ductile Iron Pipes & Fittings from;

- The manufacturer who has not been blacklisted/ debarred/ disqualified/ disallowed to supply Ductile Iron pipes in case of EPC contracts/ Turnkey contracts/ supply Order Contracts/ Rate Contracts for the entire or any part thereof, by any of the Central/ State Government/ Board/ Corporation/ as procuring entity in India with respect to quality issues in last three years, from the date of the submission of the tender. The tenderer will submit affidavit thereof duly notarized (with seal) in respect to the above condition and

- The manufacturer having valid BIS License for marking ISI Mark on their products for at least 1 (one) year and

- The manufacturer's DI Pipes and Fittings are in satisfactory performance in Indian Projects for at least one year.

- The D.I. pipes are to be inspected by the quality assurance wing of CIPET/ PDIL / RITES Ltd., and the consignment are to be embossed with the CIPET/ PDIL / RITES Ltd., inspection mark

- The materials without CIPET/ PDIL/ RITES Ltd., inspection and without CIPET/ PDIL/ RITES Ltd., shall not be accepted. All the materials should also be ISI Marked

- The DI pipes shall confirm to IS: 8329:2000(Latest edition) with its inside cement mortar lining using sulphate resistance cement and outside coated with Zinc, and suitable for Socket and Spigot joints using rubber gaskets. The Rubber gaskets shall be of EPDM rubber and confirm to IS 5382 with latest amendment and should have ISI mark on it. Ductile iron fittings (Tee, tail piece, bend etc.) shall be conforming to IS 9523:2000 with latest amendment.

9.7.1 Works to Perform:

a. Supply, laying, testing and commissioning of the pumping mains, including pipe manifolds
b. Supply & Installation of Butterfly Valve, Zero Velocity valve, Air Cushion Valve and M.S Special as per requirement.
c. Cutting & Re-doing of Various Road after laying of Pipe line etc. all complete. Cost of Certification for road & sewage pumping stations.
d. Supply & laying of ISI marked Ductile Iron fittings (Tee, tail piece, bend etc.) of required sizes conforming to IS: 9523 with latest amendment.
e. Supply & erection of ISI marked double flanged Cast Iron / Ductile Iron sluice valve with mechanical seal, scour valves, double acting kinetic air valves as per IS specification and Zero velocity valve confirming to relevant IS specification as per site requirement & as per instruction of Engineer-in-Charge.
f. Construction of thrust blocks of required size as per approved drawing at all bends and other necessary locations in the pipeline as per field requirement.
g. Construction of valve chambers as per approved drawing for all types of valves as per site requirement & as per instruction of Engineer-in-Charge.
h. Backfilling of the excavated trenches with sand / selected excavated earth. Backfilling shall be done in layers of 150mm thickness and shall be watered and compacted as per detailed specifications.
i. Repair to damages caused during construction to any existing road, bridge, culvert, water supply line, sewerage line, drain, electricity cable & pole, gas pipeline and telephone line, etc. shall be reinstated as per the original specification and satisfaction of concerned authorities / Engineer-in-Charge.
j. Cutting of road surface for taking of pipeline at required depth will be done with making good to the damages by mending & repair to existing condition.
k. Testing and commissioning of sewage pumping mains as per relevant IS code and to ensure minimum terminal head of 3.0m.

9.8 Sewage Treatment Plant (STP)/ Effluent Treatment Plant (ETP)

General Description

The STP with all ancillary structures will be designed and constructed for **225 KLD** Capacity considering **20 Hrs of operation** and ETP for **75 KLD** capacity considering 12 hours of operation. The peak factor shall be as per CPHEEO manual.

It is proposed to adopt a treatment scheme wherein hospital wastewater shall first undergo Physico-Chemical treatment in an Effluent Treatment Plant (ETP) comprising coagulation, flocculation, and sedimentation for reduction in concentration of BOD, COD and TSS. The treated effluent from the ETP shall thereafter be combined with domestic/sanitary sewage and further treated in a Sewage Treatment Plant (STP) based on either of the following technologies to achieve the desired effluent standards:

- Two-stage MBBR (Anoxic + Aerobic), or
- SBR (Sequencing Batch Reactor), or
- MBR (Membrane Bioreactor), or
- SABRE Technology (Stabilized Aerobic and Anaerobic Bioengineered Reaction Environment)

To achieve the desired effluent standards, tertiary treatment provision shall be made wherever required.

However, where an independent dedicated Effluent Treatment Plant (ETP) is proposed, the system shall include complete treatment units comprising Physico-Chemical (Primary) Treatment, Secondary (Biological) Treatment, and Tertiary Treatment processes, duly designed to achieve the prescribed effluent discharge standards.

The contractor shall essentially follow the CPHEEO Manual, which is a guideline for the system design.

However, following the same concept does not relieve the bidder of his guaranteeing the performance of the plant including treated sewage quality.

The scope of the work for **STP/ETP** shall include but not be limited to the following:

- Design, Construction, Supplying, Erection, Testing and Commissioning of Sewage Treatment Plant (STP)/ ETP including but not be limited to the following works:
- Topographical and Geotechnical Survey including Subsoil Investigation for Water Table and Safe Allowable Bearing Capacity. Subsoil Investigation shall be carried out by the Contractor through a reputed and specialist firm approved by the Authority Engineer for confirmation of Geotechnical data.
- Site Development including but not be limited to the following works:
  - ✓ Cutting of Trees, Plants, Bushes and Shrubs etc. and removing the same from theSite.
  - ✓ Demolishing the existing Structures and removing the debris from Site.Shifting of Pipe Lines, Cables and Poles etc. if required.
  - ✓ Leveling and grading to improve the aesthetics and to facilitate the vehicular movement.
- Arranging Construction Power & Water. Construction of temporary labour shelters nearby Site.
- Preparation of Process, Hydraulic, Civil, Mechanical, structural, Piping, Electrical and Instrumentation Design and Drawings including Construction, Architectural and As-built Drawings.
- Construction of Civil Engineering Works for all the Process Units of the proposed treatment technology considering the availability of land.
- Supply, Erection, Testing & Commissioning of all the Mechanical Equipment as detailed in Mechanical Specifications.
- Obtaining incoming HT/LT Power Supply from State Electricity Authority (TPCODL/TPSODL/TPWODL/TPNODL) from nearby Source to the STP Site. All necessary Deposits and Documents shall be arranged by the Contractor.
- Supply, Erection, Testing & Commissioning of all the Electrical equipment's including HT and LT equipment's as detailed in Electrical Specifications.
- Supply, Erection, Testing & Commissioning of all the Instrumentation equipment's as detailed in Specifications.
- PLC/ SCADA based Automation System for the entire Plant as detailed in Specifications.
- Supply, Erection, Testing & Commissioning of Safety equipment's at required locations including Safety Showers, Sand Buckets, Fire Extinguishers, Fire Alarms etc.
- Hydraulic testing of the treatment plant units and piping as per Tender specifications. It is to be noted that the contractor shall arrange water and power for the hydraulic testing of all related units, piping etc.
- Trial Run of the constructed & hydraulically tested Plant as per Tender specifications.
- Supply of all Spares, Tools & Tackles required during Performance Run and O & M Period.
- Repairing & reconditioning of all the equipment's in the concluding year of the Operation & Maintenance Period to such a condition that they are in running condition with regular preventive and recommended maintenance.
- Providing "on the job" training to the Authority's personnel.
- Preparation and submission of As-Built Drawings and Operation & Maintenance Manuals for Mechanical, Electrical & Instrumentation Items.

- Any other Items which have not been specifically mentioned in specifications but are necessary for construction of the Plant as per good engineering practice, safety norms and successful operation and guaranteed performance of the entire Plant shall be deemed to be included within Scope of Work and shall be provided by the Contractor without any extra cost to the Authority.

9.8.1 Detailed Scope of Work, Design Criteria and Technical Specifications

The selected bidder shall be responsible for complete Design, Engineering, Supply, Installation, Testing, Commissioning, Trial Run, Performance Guarantee, and Handing Over of the entire ETP and STP systems on a turnkey basis.

The scope shall include, but not be limited to, the following:

9.8.2 Design & Engineering

• Process design calculations and sizing of all units
• Hydraulic profile
• Mass balance
• Process Flow Diagrams (PFD)
• Piping & Instrumentation Diagrams (P&ID)
• General Arrangement drawings
• Civil, structural, mechanical, electrical, and instrumentation drawings
• Control philosophy and automation architecture
• Power load calculations
• Safety systems and statutory compliance documentation

9.8.3. Civil & Structural Works

Complete civil and structural works including:

• RCC **/ MSEP / MS-FRP / FRP** tanks for all process units
• Equipment foundations and pedestals

• RCC grade: M30 min
• Coating: Food-grade epoxy
• Walkways: FRP / MS

• Pipe and cable trenches
• Control room building
• Chemical storage room
• Sludge handling and drying area
• Walkways, platforms, ladders, handrails
• Waterproofing and epoxy coating
• Site development, paving, drainage, fencing

9.8.4. Mechanical Works

Supply, installation, testing, and commissioning of all mechanical equipment including:

• Manual/mechanical bar screens and fine screens
• Grit removal system
• Flash mixers and slow mixers
• Clarifier mechanisms with scraper and scum removal
• MBBR media (where applicable) and media retainers

• Blowers and air distribution system
• Diffusers (fine bubble type)
• All pumps (raw sewage, return, sludge, filtrate, backwash, etc.)
• Sludge dewatering system (filter press / screw press / centrifuge)
• Interconnecting piping
• Valves, gates, dampers, and specials

9.8.5. Electrical Works

• Dedicated transformer for the plant
• PCC, MCC, and local control panels
• Variable Frequency Drives (VFDs) for major rotating equipment
• Power and control cabling
• Cable trays, earthing, and lightning protection
• Internal and external lighting
• DG set for 100% backup power with AMF panel

9.8.6. Instrumentation & Automation

The plant shall be fully automated with PLC-SCADA based control system.

• Electromagnetic / ultrasonic flow meters
• Digital sensor for measuring the Ammonium and nitrate
• Dissolved Oxygen (DO) analyzers
• ORP sensors (for anoxic zones, if applicable)
• Level transmitters
• Online Monitoring system for measuring BOD, COD, TSS, pH and flow of the treated effluent
• Residual chlorine / UV intensity sensors
• Motorized control valves and actuators
• PLC panels and SCADA workstation
• Data logging, trending, and reports
• Alarm and interlock system
• Remote monitoring provision

9.8.7. Testing, Commissioning & Training

• Mechanical completion
• Dry run and wet run
• Unit-wise commissioning
• Integrated plant trial run for minimum 30–60 days
• Performance testing
• Operator training
• Submission of as-built drawings
• O&M manuals

9.8.8. Process Units & Design Criteria

9.8.8.1. Influent Design Basis (Indicative)

A.1 Hospital Wastewater (to ETP)

• pH: 6.0–9.0
• BOD: ≥ 400 mg/L
• COD: ≥ 800 mg/L
• TSS: > 400 mg/L
• Oil & Grease: ≤ 50 mg/L
• Pathogens: Present

A.2 Combined Effluent to STP

• pH: 6.5–8.5
• BOD: ≥ 400 mg/L
• COD: ≥ 800 mg/L
• TSS: ≥ 400 mg/L
• Total Nitrogen: 30–50 mg/L

The test results of the parameters given above are for guidance only. The Authority will not be responsible for the above and no relaxation will be given to the guarantee conditions of desired treated effluent quality. The Bidders shall carry out the sampling tests of raw sewage by themselves to ascertain the raw sewage quality for treatment process However for design purposes, the parameters lower than the above-mentioned parameter will not be allowed.

9.8.8.2. Guaranteed Treated Effluent Quality

Parameter	Limit
pH	6.5–9.0
BOD	≤ 10 mg/L
COD	≤ 50 mg/L
TSS	≤ 20 mg/L
Phosphorous-Total	≤ 1 mg/L
NH4-N	≤ 5 mg/L
Total Nitrogen	≤ 10 mg/L
Faecal Coliform	≤ 100 MPN/100 mL
Oil & Grease	≤ 10 mg/L

9.8.8.3. ETP – Process Units & Design Criteria (75 KLD)

(a) Collection Chamber (ETP Inlet)

The collection chamber shall receive raw hospital wastewater and provide uniform flow to the treatment units.

Design Criteria:
• Detention Time: 30 minutes for average flow
• Type: RCC underground chamber
• Flow condition: Gravity flow preferred
• Peak flow consideration: Peak factor 2.5
• Freeboard: Minimum 300 mm
• Inlet arrangement: With baffle to dissipate energy
• Outlet: Controlled overflow / pumping arrangement
• Provision of coarse screen (optional): 25–50 mm spacing

Technical Specifications:
• MOC: RCC (M30 grade) with epoxy coating
• Shape: Rectangular / square
• Access: Manhole with CI cover
• Ventilation: Adequate
• Cleaning: Provision for manual desludging
• Pumping (if required): Submersible non-clog pumps (1W + 1S)
• Level Control: Float switch / level sensor

(b) Screening

• Manual / mechanical bar screen

(c) Equalization Tank

• HRT: Minimum ≥ 4 hours for average flow
• Mixing: Mechanical / air mixing
• Level sensors mandatory

(d) Flash Mixing Tank

• Detention time: 10–15 minutes
• Flash mixer with impeller in SS-316

(e) Flocculation Tank

• Detention time: 20–30 minutes
• Slow speed agitator

(f) Primary Clarifier

• Detention time: ≥ 4 hours
• Hopper bottom

(g) Sludge Handling

• Sludge holding tank (minimum 24-hour capacity)
• Mechanical dewatering system
• Cake solids ≤ 20%

9.8.8.4. Combined STP – Technology Options & Design Criteria (225 KLD)

(a) Collection Chamber (STP Inlet)

The collection chamber shall receive combined effluent from ETP and domestic sewage.

Design Criteria:
• Detention Time: 30 minutes of average flow
• Peak factor: 2.5–3.0
• Freeboard: Minimum 300 mm
• Flow regime: Gravity / pumped
Technical Specifications:
• MOC: RCC with epoxy lining
• Access: Manhole with cover
• Pumping arrangement: Submersible pumps (1W + 1S) if required
• Level sensors: Ultrasonic / float type

(b) Screening (SS-316)

- **40mm Grating (1W+1S)**
- **20 mm Course Screen (1W+1S)**

- **6 - 10 mm Fine Screen (1W+1S)**

• Manual Screen / Mechanical screen (as required)

(c) Grit Chamber

The grit chamber shall remove inorganic particles like sand, grit, and silt to protect downstream equipment.

Design Criteria:
• Type: Vortex / horizontal flow / aerated grit chamber
• Detention Time: 30–60 seconds
• Flow velocity: 0.25–0.35 m/s (horizontal type)
• Particle size removal: ≥ 0.2 mm
• Removal efficiency: ≥ 90%
• Number of units: Minimum 1W + 1S
• Air supply (if aerated): 0.15–0.3 m³/min per meter length

Technical Specifications:
• MOC: RCC with epoxy coating
• Bottom: Hopper-shaped for grit collection
• Grit removal: Manual/ Mechanical
• Grit washing: Included (for organic separation)
• Access: Walkway and handrails

(d) Equalization Tank

• HRT: ≥ 4 hours for average flow
• Mixing: Submersible mixers / air grid

(e) Reactor

The bidder may propose any one of the following technologies:

Option 1: Two-Stage Moving Bed Bio Reactor (MBBR) (Anoxic + Aerobic)

Anoxic Reactor

• HRT: ≥ 2 hours
• DO: < 0.3 mg/L
• Mixing: Submersible mixers
• Internal recycle: ≥ 200%

Aerobic Reactor

• HRT: ≥ 6 hours
• Media fill: ≥ 20%
• Media: Virgin HDPE, SSA ≥ 300 m²/m³
• DO: 2–3 mg/L
• Diffusers: Fine bubble EPDM

Option 2: Sequential Batch Reactor (SBR)

• Minimum 2 reactors

HRT: ≥ 10 Hours
• Fill–React–Settle–Decant–Idle sequence
• Decanter mechanism
• MLSS: 3000–4000 mg/L

Option 3: Membrane Bio-Reactor (MBR)

Anoxic Reactor

• HRT: ≥ 2 hours
• DO: < 0.3 mg/L
• Mixing: Submersible mixers
• Internal recycle: ≥ 200%

Aerobic Reactor

• Submerged membrane system
• Pore size ≤ 0.04 micron
• Flux: 15 LMH
• Permeate pumps and CIP system

Option 4: SABRE (Stabilized Aerobic and Anaerobic Bioengineered Reaction Environment)

The SABRE system consists of:

- Pre-treatment (screening, grit removal, equalization)
- Bioengineered SABRE Reactor (multi-zone or integrated)
- Secondary clarification / lamella separation (if required)
- Tertiary polishing (PSF + ACF + disinfection)

Design Criteria (SABRE Technology)

- **Reactor Configuration**

  • Type: Hybrid biofilm reactor (attached + suspended growth)
  • Zones: Aerobic / Anoxic / Facultative (as per design)
  • Number of Reactors: Minimum 2 (for redundancy and operational flexibility)

- **Hydraulic Retention Time (HRT)**

  • Total HRT: ≥ **10 hours**
  • Anoxic Zone (if provided): ≥ **3.0 hours**
  • Aerobic Zone: ≥ **7 hours**

- **Media Characteristics**

  • Type: Engineered biofilm carriers
  • Material: Virgin HDPE / Polymer composite
  • Specific Surface Area (SSA): ≥ **300 m²/m³**
  • Media Fill Fraction: ≥ **20% of reactor volume**

  Dissolved Oxygen (DO)

  • Aerobic Zone: **2.0–3.5 mg/L**
  • Anoxic Zone: **< 0.3 mg/L**

- **Mixed Liquor Suspended Solids (MLSS)**

• Range: **< 4500 mg/L**

- **Organic Loading Rate**

  • BOD Loading: **0.5–1.5 kg BOD/m³·day**

- **Internal Recirculation**

  • Recirculation Ratio: **200–500%** (for nitrogen removal)

- **Aeration System**
- • Type: Fine bubble diffused aeration
  • Blowers: Roots / Turbo type with VFD
  • Oxygen Transfer Efficiency: ≥ 20%
  • Air distribution: SS 304/316 header system

- **Clarification / Separation**

• Secondary clarifier OR integrated settling zone
• Surface Overflow Rate: **20–30 m³/m²·day**

(f). Secondary Clarifier for MBBR and SABRE

• Surface overflow rate: 20–30 m³/m²/day (for MBBR)
• Weir loading < 250 m³/m/day

(g). Tertiary Treatment

• Pressure Sand Filter (PSF)
• Activated Carbon Filter (ACF)
• UV or Chlorination system

(h). Treated Effluent Tank

• Minimum 6-hour storage

Faecal Coliform ≤ 100 MPN/100 mL

9.8.9. Item Descriptions (Indicative)

9.8.9.1. Design, Engineering & Documentation

1. Detailed process design, hydraulic design, and equipment sizing
2. Preparation of PFDs, P&IDs, GA drawings, civil, structural, mechanical, electrical, and instrumentation drawings
3. Preparation of control philosophy and automation architecture
4. Submission of statutory compliance documents
5. As-built drawings and O&M manuals

9.8.9.2. Civil & Structural Works

1. **RCC / MSEP / MS-FRP / FRP equalization tanks, reactors, clarifiers, filters, and treated water tanks**
2. Equipment foundations and pedestals
3. Control room building including electrical room
4. Chemical storage room
5. Sludge handling and drying area
6. Pipe and cable trenches
7. Walkways, platforms, ladders, and handrails
8. Waterproofing and epoxy coating
9. Site development, paving, stormwater drains, fencing

9.8.9.3. ETP (75 KLD) – Supply, Installation & Commissioning

1. Manual/mechanical bar screen with collection tray
2. Equalization tank with mixers and level sensors
3. Coagulation tank with flash mixer
4. Flocculation tank with slow speed agitator
5. Primary clarifier with scraper mechanism and scum removal
6. Chemical dosing systems (coagulant, pH correction, polymer)
7. Sludge holding tank
8. Sludge dewatering system (filter press / screw press / centrifuge)
9. Sludge pumps, filtrate pumps
10. Interconnecting piping, valves, and specials

9.8.9.4. STP (225 KLD) – Supply, Installation & Commissioning

Pre-treatment Unit common to all:

Grating, Course screen, fine Screen, Mixing Units and pumps

Option 1: Two-Stage MBBR

1. Anoxic MBBR reactor with mixers
2. Aerobic MBBR reactor with media and diffusers
3. Tree Strainer
4. Blowers with acoustic enclosure
5. Secondary clarifier with Tube settler media
6. Sludge recirculation and wasting system
7. Control instrumentation and automation

Option 2: SBR

1. SBR reactors with aeration grid
2. Decanter mechanism
3. Reactors automation and sequencing logic
4. Sludge recirculation and wasting system
5. Control instrumentation and automation

Option 3: MBR

1. Aeration tank
2. Membrane tank with modules
3. Permeate pumps
4. CIP system

5. Chemical storage for membrane cleaning
6. Control instrumentation and automation
7. Sludge recirculation and wasting system

***Option 4*: SABRE Technology**

1. SABRE bioreactor with engineered media
2. Aeration system with diffusers and blowers
3. Internal recirculation pumps
4. Secondary clarifier
5. Sludge recirculation and wasting system
6. Control instrumentation and automation

9.8.9.5. Tertiary Treatment

1. Pressure Sand Filter (PSF)
2. Activated Carbon Filter (ACF)
3. Backwash pumps and piping

UV disinfection system / Chlorination system

. Pressure Sand Filter

• Filtration rate: 10 $m^3/m^2/\cdot hr$
• Vessel MOC: MS rubber-lined / FRP
• Media depth: ≥ 900 mm

. Activated Carbon Filter

Filtration rate: 8 $m^3/m^2/\cdot hr$
• Iodine value: ≥ 900 mg/g
• EBCT: ≥ 20 min

. UV System

• UV dose: ≥ 30 mJ/cm^2
• SS 316 chamber
• UV intensity sensor: Included

9.8.9.6. Sludge Handling (Common for ETP & STP)

1. Sludge thickener (if required)
2. Sludge dewatering system
3. Sludge conveyors / hoppers
4. Sludge storage shed

9.8.9.7. Electrical Works

1. Dedicated transformer including Transmission Mains
2. PCC and MCC panels
3. Local control panels
4. VFDs for major equipment
5. Power and control cabling
6. Cable trays and supports
7. Earthling and lightning protection

8. Internal and external lighting
9. DG set with AMF panel

9.8.9.8. Instrumentation & Automation

The plant shall be fully automated with PLC-SCADA based control system.

• Electromagnetic / ultrasonic flow meters

• Dissolved Oxygen (DO) analyzers
• ORP sensors (for anoxic zones, if applicable)
• Level transmitters
• Online Monitoring system for measuring BOD, COD, TSS, pH and flow of the treated effluent

Digital sensor for measuring the Ammonium and nitrate

.• Residual chlorine / UV intensity sensors
• Motorized control valves and actuators
• PLC panels and SCADA workstation
• Data logging, trending, and reports
• Alarm and interlock system
• Remote monitoring provision

9.8.9.9. Testing, Commissioning & Training

1. Dry run and wet run
2. Integrated trial run (minimum 60 days)
3. Performance guarantee testing
4. Operator training
5. Handover documentation

9.9. Mandatory Submittals

• Process Flow Diagram
• GA Drawings
• Hydraulic Profile
• Design Calculations
• Equipment Datasheets
• Control Philosophy
• Power Load List
• As-Built Drawing after commissioning of work

9. 10. Performance Guarantee

The contractor shall guarantee that the treated effluent quality shall meet the prescribed standards at all times. Any failure shall be rectified at contractor's cost.

9.11. General Notes

The following notes shall be deemed to be included in the Bill of Quantities (BOQ) and shall be binding on the bidder:

1. The BOQ items shall be read in conjunction with the Scope of Work, Technical Specifications, Drawings, and Tender Conditions.

2. The rates quoted shall be inclusive of all materials, labour, tools & tackles, taxes, duties, freight, insurance, installation, testing, commissioning, trial run, performance testing, as -built drawings, and handover etc. excluding GST.
3. No extra payment shall be made for any item or activity which is necessary for completion of the system but is not explicitly mentioned in the BOQ.
4. The contractor shall be responsible for the complete turnkey execution of the ETP and STP systems.
5. All temporary works, dewatering, shoring, scaffolding, and safety arrangements shall be included in the quoted rates.
6. The rates shall include for statutory approvals, inspections, and compliance with CPCB/SPCB, CPHEEO, and BIS norms.
7. All equipment shall be new, unused, and of proven make.
8. Any modification required to meet guaranteed performance shall be carried out at no extra cost.
9. Power, water, and consumables required during construction, testing, and commissioning shall be arranged by the contractor.
10. The contractor shall provide all spares, special tools, and maintenance kits as specified.

9.11. Operation & Maintenance:

On issue of provisional completion certificate, the Operation & Maintenance of the project are to be undertaken by the Executing Agency for a period of 5 (Five) years with supply of manpower, chemicals, consumables & other repair & maintenance works including spare parts, if any. The energy charges shall be paid by the Department directly to the concerned electrical authority. Any defects/ discrepancies noticed in civil, mechanical and electrical works has to be attended promptly. It is to be ensured that the quality of treated sewage has to be maintained by the Executing Agencyas per NGT Norms/CPCB standards for safe disposal to river or stream or land. The entire project needs to be operated up to 24 Hours per day.

9.12. Works to be performed for Operation & Maintenance:

9.13. Sewerage System:

After successful completion & commissioning of the gravity sewers and accepted by Employer, Operation & Maintenance (O&M) will commence for a period" of five (5) years (60 Calendar Months).

In an engineering sense, operation refers to hourly and daily operation of the components of a system. This is a routine work. For trouble free operation of the system, it should be maintained properly. In a Sewerage system, maintenance helps to protect the capital investment and ensures an effective and economical expenditure in operating and maintaining the facilities. It also helps to build upand maintain cordial relations with the public, whose understanding and support are essential for the success of the facility.

The contractor should have sufficient experience in the design and construction of the system to enable him to perform his task efficiently with an understanding and appreciation of the problems that may arise during maintenance. One has not only to be a technical man but has also to deal with human relations in order to be successful in his work.

Operation & Maintenance offices with dedicated communication facility (including internet, telephone and cell-phone to the key staff) shall be established in ***Kataka*** preferably within municipal area by the contractor.

The maintenance of sewer system can be classified into 2 categories.

9.13.1. Preventive or Routine maintenance

9.13.2. Emergency maintenance.

Preventive maintenance is to be carried out to prevent any break down of the system and to avoid emergency operations to deal with clogged sewer lines or over flowing man holes or backing up of sewage into a house or structural failure of the system. Preventive maintenance is more economical and provides for reliability in operation of sewer facilities.

In spite of well-organized regular preventive maintenance, sometimes emergency situations occur due to obstruction in sewers because of entry of solid matters through the manholes due to vandalism, excessive silt accumulation in sewer line, all damages leading to the breakdown of the system. This needs emergency attention to bring the system into order.

9.14. Strategy for Good Operation & Maintenance

The minimum requirement for good operation & maintenance are depicted below.

9.14.1.1. Preparation of a plan for operation & maintenance

9.14.1.2. Providing required personnel to operate and maintain the system

9.14.1.3. Providing capacity building program for O&M personnel

9.14.1.4. Availability of spares, tools & plant for ensuring maintenance

9.14.1.5. Preparation of GIS base map of the system

9.14.1.5.1. Maintaining MIS records on the system including history of equipment cost and life etc. equipment,

9.14.1.6. Establishing a sound financial system

9.14.2. Preparation of Plan

A "Comprehensive Sewerage System Management Plan" shall be prepared by the contractor and approved by the Engineer/ Employer. It will provide for safe & reliable performance of the sewers and enable the sewers to function properly.

Briefly the plan shall contain what actions are required, when the actions are to be taken, who is to take these actions, how these actions are to be achieved, and why the actions are required.

Check lists are to be prepared for use by the supervising or inspecting officers to ensure that the actions indicated in the operation & maintenance plans are carried out properly and promptly.

The management plan should include at least the following:

i. Sewerage System Drawings, maps & data base

- ✧ Prepare and get approved from Employer detailed as-built drawings (in AutoCAD) of the entire sewerage system under contractor's scope (including the sewage collection and transportation system showing all gravity line segments, manholes, pumping facilities, pressure pipes, valves and relevant appurtenances).
- ✧ Convert as-built drawings to GIS platform (including acquisition, processing of latest satellite imagery in Quick-Bird at 0.6 M resolutionand GIS software).
- ✧ Attach sewerage system data attributes (should at-least include hydraulic, geographic, life and cost data).
- ✧ Develop centralized facility for data base preparation, conversion, maintenance including data analysis and output facility as necessary for Operation, Maintenance and record keeping purpose.
- ✧ Develop facility for updating and maintenance of the data in the Centralized system.

ii. Operation and Maintenance Equipment

- ✧ Procure/ hire mechanical equipment necessary for Operation and Maintenance (O & M) of sewerage facilities
- ✧ Employ suitably skilled operators to operate the equipment.
- ✧ Procurement of all necessary safety equipments & gear. This is as per the detailed list in the "Health and Safety Manual" to be prepared by Contractor. A typical list of Safety Equipment required during operation & maintenance of Sewer system is given in below.

1. Safety helmet
2. Rubber gloves and boots
3. Canister type Gas mask

4. Explosion proof portable light
5. Non sparking tools
6. Oxygen breathing apparatus
7. Safety belt
8. Portable Air blower
9. Oxygen deficiency Indicator
10. Hydrogen sulfide Indicator
11. Carbon Monoxide detector
12. Chlorine detector
13. Fire Extinguisher
14. First Aid & Lifesaving kit
15. Warning signals.

✧ Make effective use of the equipments for the O & M of the sewerage system.

✧ Operate and maintain the equipment in workable state throughout the O & M period including supply of all spare parts.

✧ At the end of O & M period hand over the equipment in working state to the Authority.

iii. Maintain data base for procurement, operation, maintenance, repairs, and replacements of the equipment including routine updating of the central data base.

iv. Planning for Sewer Maintenance

The maintenance of a sewer system consists of inspection of the system, cleaning of sewers including flushing wherever necessary and repair & construction of damages.

Direct inspection of sewer by entering manhole is normally prohibited. Inspection and cleaning shall be carried out by mechanical means. The standard guidelines & SOPs issued in this regard by Government shall be strictly adhered to.

Indirect inspection to be carried out by sending a camera through the sewer for taking photographs or a closed-circuit television equipment (CCTV) to send pictures which can be seen on TV screen or recorded in a video tape. The CCTV inspection can be used for sewer lines as small as 100mm.

An experienced maintenance engineer will be able to identify critical sewers which require to be inspected in the first phase. If proper watch is kept during the sewer cleaning operation it will be possible to observe damages to manholes due to deterioration in the joints and collapse of bricks and /or removal of bricks and soil by the sewer cleaning machines regularly from the same area. These may be the early warning signs of an impending disaster. Settlement of road surfaces, pollution of water by the sewage, high chlorine contents of the sub soil water are other signs indicating leaking joints or cracks in the sewer. History of previous collapses of sewer lines will also indicate the priority areas for sewer inspection.

A list of such critical areas should be drawn up and a program of sewer inspection chalked out. Other areas singled out for sewer inspection would be the heavily built up and congested areas where a sewer failure would have very severe repercussions

For Operation & Maintenance purpose the whole sewer system should be marked on plan and divided into several maintenance sections and areas, which are to be placed under different maintenance gangs.

There shall be separate gangs for cleaning operation and construction repair works. While the cleaning of manholes and sewer pipes etc will be done by cleaning gang by mechanical means, the repair of damages will be taken up by repair and construction gang.

The area under each gang will depend on the size of the sewer, depth to which it is laid, the number and spacing of manholes, condition of sewers, size and length of rising mains and number of valves etc.

v. Works of Sewer Maintenance Gang

✧ Check manhole condition for deposition of silt, flow, new connections if any,

damaged walls or steps, damage or missing of manhole covers, clogged vertical pipes in drop man holes. It is preferable that the repair gang comes out on the work when the sewer cleaning or maintenance gang is working so that brickbats, debris, mortar etc. which fall in the manholes are removed then and there, as these materials cause a major blockage if the same is allowed to flow into the sewer line. For cleaning of sewer, direct entry into the manhole/ sewer is normally prohibited. Inspection and cleaning shall be carried out by mechanical means. The standard guidelines & SOPs issued in this regard by Government shall be strictly adhered to.

- ✧ Check the sewer lines in between two successive manholes for silting and flow conditions and remove the deposited silt.
- ✧ Check for any harm full and extraneous matter entering in to the sewer line so that further investigation for the cause and location can be determined.
- ✧ Check the Air release valves and Blow off valves in rising or force mains.
- ✧ Flushing regularly the lateral sewers at the head of the sewer once in a day during non-peak hours.

vi. O & M Staffing

The bidder shall specify the number and details of personnel (minimum) to be deployed for Sewer Cleaning works and Construction & Repair works with due consideration of leave reserve staff. Approval of the Authority is required prior to deployment of such O&M personnel. *In addition, the Contractor will arrange extra work force, as and when required, so as to smoothly run the operation and maintenance including preventive maintenance, repairs etc. and general cleanliness of the installations.*

vii. O & M Procedures

- ✧ The contractor should prepare and implement procedures/protocolsdocument for O & M of the sewerage network.
- ✧ The procedure document should include material specifications, procedures & protocols for routine O & M.
- ✧ The procedure document should include detailed material specifications, procedures and protocols for repair (both major & minor) works.
- ✧ The document should include list of material & technology vendors.
- ✧ The document should explain in details actual O & M procedures usableby operators and unskilled staff.
- ✧ The document should include safety procedures in details including “TODO” and “DO NOT DO” activities.
- ✧ The document should include in details procedures for equipments and material handling.
- ✧ The document should include detailed procedures for safe manhole opening, safety checks and manhole entry. The document should also include sample form for manhole entry permission.
- ✧ The document should include procedures in details for manhole cleaning.
- ✧ The document should include procedures for regular flushing at the headof the lateral sewers and periodical flushing of branch/ main/ Trunk sewers.
- ✧ The document should include procedures for structural safety and stability status check for manholes.
- ✧ The document should include procedures in details for checking & assessing sewer blockages. The document should include in details procedure for sewer cleaning.
- ✧ The document should include in details procedure for checking andassessing structural safety and stability of sewer lines
- ✧ The document should include in detailed procedures for checking andassessing

safety and structural stability of sewerage system appurtenances.

- ✧ The document should include the detailed schedules for periodic O & M activities.

viii. Maintenance of Operation and Management Records

- ✧ Routine daily O & M maintenance records including staff employed, equipment status and usage, material usage
- ✧ Routine daily O & M records including complaint received, attention status, problem resolve status.
- ✧ Minor repairs records including problem identification source, repair status, problem resolve status. A weekly update to central data base should be made.
- ✧ Major repairs records including identification source, status record of repair/ replacement proposal, status record of approval, status record of repair/ replacement, problem resolve status. The central database should be updated weekly.
- ✧ Record of budgetary provisions for minor & major repairs/replacements, monthly review & updates of the budget and expenditures.

ix. Emergency Action Plan

Emergency maintenance becomes necessary for removal of obstructions in sewers caused by excessive silt accumulation or damage leading to the breakdown of the system with flow much lower than the normal.

For emergency repairs the contractor has to prepare an Emergency Action Plan which is to be approved by the Engineer.

The Emergency Action Plan aims to set up and implement procedures to respond to the emergency situations like failed network, leakages likely to affect water system in the city, pump station failure, major repair shut downs. The document should aim to and include followings;

- ✧ Procedure for incident notification to various agencies and response route& time.
- ✧ Procedure for assessment of emergency situation and assigning theresources.
- ✧ Alternative operation procedures during emergency.
- ✧ Procedure to reinstate original operation procedures post emergency.
- ✧ Notification to different authorities about end of emergency.

The sewer gang to be engaged for this type of work should consist of specially trained men who are aware of the hazards and capable of coping with situations calling for prompt action.

The supervision in this case should be entrusted to a responsible person well versed in the use of the special equipments like CCTV, and High velocity jetting machines for cleaning, and suction pumps or gully emptiers.

For locating the exact location of blockages, it is necessary to commence observation from the overflowing man holes down the line until the first man hole with little or no overflow is reached. The section between the man holeand the one immediately upstream is the one which is blocked and requires tobe tackled.

In the case of simple blockages, the split bamboo rods can be effectively usedfor cleaning the blockage whereas for major blockages High Velocity Jetting machine will be required.

For solidified deposits causing the blockage, rodding machine with auger head may be useful.

x. Health & Safety Manual

A detailed “Health and Safety” manual for the operation and maintenance staff should be prepared. This should include H&S procedures in anticipation of every possible event likely to happen during O & M of the sewerage system.

xi. O & M Manual

“Operating and Maintenance Manual” should be prepared and implemented with the approval of

Employer. The Operating and Maintenance Manual shall contain all necessary data to enable the works to be properly operated and maintained, including, but not limited to, the following:

1. Table of Contents
2. Description of the sewerage system and components
3. Layout drawings / P&IDs / cable drawings
4. Operating schedule with equipment / instrumentation data and instruction
5. Maintenance schedule with equipment / instrumentation data andinstruction
6. Routine maintenance schedule
7. Schedules of equipment
8. Instrumentation commissioning data
9. Test certificates of equipment and instruments
10. List of vendors for equipment and instruments
11. List of spares required for day-to-day operation and maintenance
12. Index
13. Safety rules, "Dos" and "Don'ts"
14. Record requirements
15. Manufacturers O & M documents for equipment and instruments
16. Manufacturer's guarantee documents for equipment and instruments
17. Safety measures and Precautions to be taken in operation andmaintenance

The precautions and safety measures to be taken during operation &maintenance of a sewer system is briefly described at following paragraphs

xii. Traffic control and safety measures Precautions to be taken during Operation& Maintenance of Sewer network

Personnel engaged in operation and maintenance of sewerage systems are exposed to different types of occupational hazards like physical injuries, injuries caused by chemicals and radioactive wastes, infection caused by pathogenic organisms in sewage, and dangers inherent with explosives or noxious vapour and oxygen deficiency.

The health and safety of personnel can be safeguarded to a great extent by taking the likely hazards in to consideration, at the time of design of the system. In spite of care taken in the design, hazards are still possible and these can be reduced by use of safety equipments and precautions appropriate for each hazard condition.

Traffic Control:

a) Place easily readable and clear warning signs well ahead of work area.
b) Fence off adequate space around the man hole for placing equipments and deposition of silt removal.
c) Place barricades or signs to channelize the traffic, if possible.
d) Vehicles can be parked between the traffic and the work area.
e) Place flag man at both ends of the road for controlling flow of traffic from each direction and to avoid traffic jam if the road is narrow and only one lane of traffic is possible.

Manhole Safety:

a) Ventilate the sewer line by opening two or three manholes on both sides where work is to be carried out. This is more important when adequate blowers for ventilating the sewers are not available. The manholes should be opened at least one hour before start of the operation. The opened manholes should be properly fenced to prevent any person especially children accidentally falling in to the sewer. Dummy covers with BRC welded fabric can be used.
b) Where it is desirable to use blowers, operate these for at least 30 minutes before start and during cleaning operations to ventilate the lowest working levels.
c) Use safety harness and life line before entering the sewer lines. Two helpers at the top should be provided for each person. The person standing at the top must send signals at every four minutes interval to the person in the man hole to ensure safety.
d) Test for hazardous gases before entry of a person in to the sewer line and also in between if the operations are for a longer time.
e) Test manhole rungs/steps for structural safety before using.
f) Ensure that when portable ladders are used, they are properly seated orfixed.

g) Ensure that no material or tools are located near the edge which can fallin to the manhole and injure the workman.

h) Lower all tools and materials for use by the workmen inside themanhole, in a bucket.

i) Use lighting equipments which must be explosion proof and fire proof.

j) Use gas masks when men have to enter in to the sewer line. Precautions for Infection:

The personnel working in sewerage maintenance system are prone to infectionsand hence the following precautions are to be taken.

a) Emergency first aid treatment kits be provided to take care of all minorinjuries like cut and burns.

b) A Physician's services should be available for emergencies. Workers should be educated about the hazards of water borne disease such as typhoid, and cholera etc. through sewage and tetanus through cuts and wounds. Preventive inoculations should be given particularly to workers.

c) The importance of personal hygiene should be emphasized and workers should be instructed to keep fingernails short and well-trimmed, wash hands with soap and hot water before taking food and keep fingers out of nose, mouth ,and eyes, because the hands carry most infections.

d) Use of rubber gloves should be issued to so that sewage or sludge does not come in direct contact with the hands.

Workers should be provided with a complete change of work clothes to be worn during working hours. Gum boots should also be provided to workers.

9.15. Pumping Stations & Sewage Treatment Plant &/ ETP:

a) Scope of Work:

The Contractor shall operate and maintain the Sewage Treatment Plant (the Plant), pumping stations and all allied works under the Contractor's contract, for a base period of 5 (five) years, with the option to extend for two (2) consecutive or one (1) year periods at the Authority's discretion. For the Operations and Maintenance period the salient features of works are:

1. Sewage Treatment Plant (Plant) and Sewage Pumping Stations including all the civil units, mechanical and electrical equipment as per the Contractor's proposal, to ensure that all the output guarantees are met.
2. General facilities and utility services including all other components of work done under the Contractor's project.
3. Programmable Logic Controller (PLC) and SCADA based automation system.
4. Any other services required for efficient and smooth running of the scheme.
5. All buildings and staff quarters.

The Contractor shall also dispose of sludge, screenings, grit and any other material, as per specifications and to the satisfaction of the Engineer and Employer. It is noted that all costs during the Operation and Maintenance (O&M) period, excluding the cost of power is to be borne by the Contractor. Within the Contractor's quoted cost, the Contractor is to ensure that the following guarantees are maintained during the operation and maintenance period. Each is explained in further detail later in this specification section:

1. Quality of treated effluent.
2. Consumption of chemicals.
3. Electrical switchgear and standby generators. Automation, remote monitoring and control.
4. On the job training for Employer staff as per specifications.

At the end of 4th year of the O&M period, assessments of the condition of the plant will be done by Employer or by an independent body and based on that assessment the Contractor shall, at no extra cost to the Authority repair and recondition all the mechanical equipment in the concluding year of the O&M contract to a conditionso that they are in running condition with regular preventive and recommended maintenance as per manufacturer's instructions or as per CPHEEO manual. The Contractor's scope shall include supply of all necessary spares that may be required to operate

for another 5 years after the initial period. The list of critical spares shall be drawn up at the end of the 6th year depending upon the maintenance record of equipment in the ultimate year of the contract and the spares shall be supplied in the concluding year of the contract.

b) Output and Operations Guarantees

The Contractor is fully responsible for treating all the sewage received at the inlet chamber. The performance of the Contractor shall be treated as unsatisfactory if Contractor fails to treat the complete sewage or does not maintain the guarantees listed in the Contractor's clause excepting in force majeure condition or fails to fulfil other conditions of the contract.

c) Treated Effluent Quality

The Contractor shall operate the Sewage Treatment Plant in such a way that at all times the treated effluent quality attains the following parameters (as per CPCB Guideline and the Guideline prescribed by MoHUA):

S. No.	Parameters	UoM	Values
1.	pH		6.5 to 9.0
2.	Biochemical Oxygen Demand (BOD_5)	mg/l	≤ 10
3.	Chemical Oxygen Demand (COD)	mg/l	≤ 50
4.	Total Suspended Solids (TSS)	mg/l	≤ 20
5.	Ammoniacal Nitrogen (NH_4-N)	mg/l	≤ 5
6.	Total Nitrogen (TN)	mg/l	≤ 10
7.	Total Phosphorous (TP)	mg/l	≤ 1
8.	Fecal Coliform	MPN/100 ml	≤ 100
9.	Oil & Grease	mg/l	≤ 10

d) Treated Sludge Disposal

The Contractor shall operate the Plant such that the sludge produced is of a spreadable consistency and the volume of sludge produced after necessary process, is minimum. The sludge generated from the Plant shall be disposed by the Contractor outside the plant under a specific plan to be drawn up.

e) Chemical Requirements

The chemicals consumed to operate the Plant and other facilities under the Contractor's contract shall not exceed the guaranteed chemical consumption as specified by the Contractor in the bid. Extra consumption, if any, shall be in the Contractor's account and Contractor shall undertake suitable modifications works to ensure that the chemical consumption remains within the limits specified in the Contractor's offer. Tests and Sampling During O&M Period

The sampling and testing shall be carried out daily and at least at the points given below. The Contractor's schedule for tests and sampling shall also be maintained during the O&M period:

1. Inlet works (flow, BOD, pH, suspended solids, temperature, COD, and oil &grease)
2. Outlet of the SBR basin (BOD, pH, suspended solids, COD and oil & grease)
3. Primary sludge (volatile suspended solids, total solids and specific gravity)
4. Secondary sludge (volatile suspended solids, total solids and specific gravity)
5. Various parameters to be tested by online monitoring system at specifiedlocations

f) Staffing

The work and monitoring of the treatment process and pumping stations shall be conducted on a 24 hour per day, continuous basis, without interruption. The Contractor shall give or provide all necessary supervision during the O&M period and as long thereafter as the

Engineer may consider necessary. Such supervision shall be given by a competent person having adequate knowledge of the operation and maintenance duties to be carried out including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents as may be required for the satisfactory working of the entire Plant and pumping stations.

Details of personnel to be employed by the Contractor:

The Bidder shall specify the number and details of personnel (minimum) to be employed for the operation & maintenance of Pump sets, different units of STP &/ETP, PLC & SCADA etc with due consideration of leave reserve staff. Approval of the Authority is required prior to deployment of such O&M personnel. *In addition, the Contractor will arrange extra work force, as and when required, so as to smoothly run the operation and maintenance including preventive maintenance, repairs etc. and general cleanliness of the installations.*

- *The Contractor shall make appropriate arrangements for maintenance of items like road work, buildings, maintenance of civil structures and other activities defined to fulfill its obligations under O&M Contract.*
- *No labour below the age of 18 years shall be employed.*
- *Staff credentials and experience shall be provided to the Engineer for approval in advance of placement or replacement for the duration of the Contract. Not more than one of the Contractor's key staff (noted in table above) shall be absent from the project site at any given time. In case, it is necessary for more than one of the key personnel to be absent at a given time, the Contactor shall provide replacement of equivalent or better qualification and experience for prior approval by Engineer.*
- *The Engineer-in-Charge is authorized for direct removal of any or all staff employed during the O&M period of the Plant and pumping stations if in the sole opinion of the Engineer-in-Charge it becomes necessary. The Contractor shall comply with such directions and post a suitable substitute(s).*

g) Safety / Security

The Contractor shall take all safety precautions under various acts and rules under central and state government. Contractor shall be responsible for safety of staff and the consequences thereof. The Contractor shall deploy round the clock security personnel at plant entrance and in the compound for the safety of the plant and premises during the O&M period. The Contractor shall be completely responsible for the safety of the plant, equipment and personnel.

The care of the whole of the permanent works shall remain with the Contractor who shall be responsible for all accidents or damages from whatever cause arising and chargeable for anything that may be stolen, removed, destroyed or damaged to whomsoever belonging and also for making good all defects and damages to the said works or to any property adjoining to any cause whatever, whether such damage or defects were occasioned by the negligence of the Contractor or not or completion whereof or whether payment may wholly or partially have been made or the works approved as supposed to have been properly done and no certificate of approval of any works by any officers or members of the Authority shall affect or prejudice the right of the Authority against the Contractor or be considered or held as at all conclusive as to the sufficiency of any work materials.

Adequate safety precautions against fire, flooding, lightening, electrical shocks, accident due to moving/ non-moving heavy/ light equipment shall be strictly observed by the Contractor at the Contractor's own cost. Suitable safety measures like gumboots, gloves, safety belts, ladders, safety lamps, gas masks, Oxygen apparatus, insulated tools, alarm etc. shall be provided by the Contractor except those provided by the Department. Necessary medical first

aid kit shall be made available all time. In presence of observance of above safety precautions, the Contractor shall be responsible for any unforeseen loss of the equipment or persons dealing with it. Special care shall be taken by the Contractor while carrying out the work in sewage gas zone. Any incidence of loss of human life or accident will be totally Contractor's responsibility. The Contractor shall ensure that the staff employed takes all necessary precautions while carrying out the work either in shift duties or any general shift as per Indian Electricity Rules /Factory Act /CPHEEO Manual or, manufacturer's special instruction for safety /gas handling. The staff shall use: gas masks, oxygen breathing apparatus, gum boots, safety belts, safety lamps and hand gloves during execution of the work as required per the task.

During night hours after 7.00 P.M, the main gate shall be locked. However, shift duty staff shall be alerted and open the gate during surprise checking by Employer staff or any other Government authorities or the Contractor's nominee without any wait after checking their proof of identification. Only bona-fide persons shall be allowed on the Plant and pumping station premises. Smoking, consumption of alcohol and other illegal substances are strictly prohibited within the Plant and pumping station sites.

The staff engaged shall wear common uniform with name plate indicating name and designation during duty hours.

h) Reporting

The Contractor will prepare daily and monthly reports (in format provided) of pumping, treatment and project performance and submit to the Engineer and will assist the department in preparing the necessary documents for their purpose and record as proforma given from time to time. The reports shall contain the following:

1. Raw sewage quantity and quality: as per the on–line monitoring;
2. Effluent quality: as per the on–line monitoring;
3. A description of maintenance work carried out in the reporting period;
4. A report on major failures, if any, their causes and remedial actions taken;
5. Sludge quality and quantity (daily basis) in the reporting period;
6. Power and chemicals consumed in the reporting period;
7. An inventory of the chemicals and spare parts available at the end of the reporting period;
8. O&M staff deployed by the Contractor during the reporting period;
9. Major repairs work, if any;
11. Contractor is required to maintain separate register/ computerized records at allsites of following information:
    a. Pumping register;
    b. Quantity of sewage treatment and performance register;
    c. Working hours register;
    d. Maintenance register;
    e. Staff attendance register;
    f. Equipment breakdown, repair record and extent of repair;
    g. Maintenance record of individual machines;
    h. Gas engine operating register. Site Order Book

i) Operation

In case, the motor or any other equipment is burnt or damaged due to negligence of the Contractor or due to faulty operation, it shall be the sole responsibility of the Contractor to

rewind/ replace/ repair it as per standards of the equipment free of cost. In case of any fault in operation, maintenance and performance of the Plant, Contractor or the Contractor's staff at duty will immediately report to the Engineer about it.

The Contractor shall run the Plant at the proper voltage. Contractor shall record all power failures and voltage levels in daily log sheet. Contractor will bring into the notice of power supply agency as well as control room and Departmental Engineer about all power failures and related breakdowns. Contractor will also get the electricity restored immediately. Any dispute with the workmen shall be Contractor's responsibility as per Labour Laws/Govt. Rules and Regulations. In no way the department shall be responsible for the disputes between them.

The Contractor shall follow the rules and regulations as per Factory Act as applicable. The Contractor shall arrange all necessary required tools tackles and instruments in advance for proper operation and maintenance of the entire plant.

The Contractor shall operate and maintain all electrical, control, instrumentation, SCADA and mechanical equipment as per the instructions of the respective equipment manufacturer. Contractor shall further maintain and operate the plant, as per CPHEEO manual to the treated effluent results as per approved norms specified in the Contractor's document elsewhere along with the Technical Bid. The Contractor shall be free to follow manufacturers' manual in the Contractor's regard. However, in case of any doubt, the department shall refer to best of the above standards and the Contractor shall be bound to carry out the works accordingly.

The floating material/scum not pumped to the anaerobic digesters shall be collectedin bins and disposed in open pits away from the Plant and machinery. It should be dried and disposed off regularly at a location outside the plant and approved by statutory authority. During rainy seasons, it should be buried after mixing with lime.

The grit shall be collected in trailers, trucks or tractor and the same should be disposed off at appropriate place away from the plant on Contractor's own. Suitable site for that purpose shall be identified by the Contractor. Regarding costof sludge manure, the Contractor will be required to follow Employer practice and rules.

The Contractor shall know all Central /State Government/Semi- Government/local Bodies' rules & regulations to the Contractor's contract without any excuse. Gas coming out of sewage is hazardous containing methane, CO, CO_2 and H_2S etc. Therefore, necessary precaution and measures shall be taken in regard to human life and installations.

Gas emissions shall be as per the norms as modified by the appropriate rules or regulatory governmental agencies from time to time.

No structure of any kind shall be allowed to be constructed /altered within the plant premises without the permission of Employer. Nothing is to be paid by Employer for any addition if allowed. In case of damages to the buildings/machines and shortcoming to the machines, the same has to be made good as per original shape/good running condition by the Contractor. The decision of Engineer in the Contractor's regard shall be final and binding.

j) Maintenance

Every part of the works and all materials to be used therein shall be subjected to such tests from time to time during the O & M period as the Engineer may direct and the whole of such tests shall in all cases be made at the Contractor's sole expense.

The work shall be carried out and completed under the exclusive control, direction and supervision and to the satisfaction of the Engineer. The Engineer shall likewise have full power to reject or condemn any work or material that Contractor may deem unsuitable. In case of any work or material being rejected by the Engineer, the Contractor shall immediately remove and replace the same to the satisfaction of the Engineer who shall have full powers to get the same removed and replaced and deduct the expenditure incurred in the process form any amount due or that may become due to the Contractor.

The Contractor shall use only the original and genuine spares of the original equipment as per recommendations given in the maintenance booklet of the manufacturers/ as per directions of the Engineer. Adequate stock of such spares is to be maintained by the Contractor. Test

certificate of manufacturer is required for bearing along with supplies. Test certificate of all major equipment will be submitted from the manufacturer.

If any material brought upon the site of works or to the places where any operations have been or are being carried out in connection with or for the purpose of the works, be in the judgment of the Engineer of any inferior or improper description be used in the works, the said materials or workmanship shall where be required by the said officer be removed or amended by the Contractor forthwith or within such period for every breach by the Contractor in the Contractor's clause. The Engineer is hereby authorized to remove or cause to be removed the materials and workmanship objected to or any part thereof and replace the same with such materials and workmanship as shall be satisfactory. The Contractor shall reimburse Employer for all costs and expenses incurred thereby or to which the Authority may be put or be liable in connection therewith the amount thereof to be certified by the Engineer whose certificate shall be final.

The Contractor shall be responsible of civil maintenance of buildings and roads, while washing and painting every two years and watering of lawn/ plants within the plant premises according to the O&M manual.

The Contractor shall also be responsible to maintain cleanliness in and around the plant including machineries, disposal of floating removed from the Bar Screens/ primary sedimentations, etc. Grit and other unwanted material.

All the steel structures and machines installed in open areas shall be painted after every monsoon period after cleaning the surface as per CPWD manual.

However, all the machines, equipment as well as steel structures inside all buildings shall be painted once every twelve calendar months after proper cleaning of the surface as per CPWD manual except HT panel and transformers which shall be painted after three years. Wall painting of the building and painting of doors and shutters etc. shall be done at least once in every two years.

Surface drains shall be cleaned every year before start of monsoon.

All leakages shall be attended promptly to avoid any nuisance etc. Materials causing Choking of all the effluent flumes and pipes should be removed at once. All the valves/ gates which are not used regularly should be operated at least once a week and made sure that they are properly lubricated/ greased.

All safety valves shall be checked daily and ensured that they are working properly. In case of any fault the same should be checked daily and ensured that they are working properly. In case of any fault the same should be attended immediately without any wait. The maintenance of the plant shall be as per maintenance manuals of the manufacturer for all equipment. The Contractor shall keep all the safety devices in working order.

The Contractor shall make sure that no unwanted material should float/ grow in and around different units. In case it is found, the same shall be removed/ cleaned immediately. The Contractor shall also be responsible for cleaning/ sweeping the plant building, inside and outside roads, footpath etc.

Launders, weirs etc. shall be maintained clean round the clock. During preventive/ breakdown maintenance, the Contractor has to visit the unit/ units as and when needed. The pumping units or other machineries required, if any, shall have to be arranged by the Contractor at the Contractor's own costs for completing the work. In case of battery-operated auto system panels and also system alarm etc., batteries are required to be maintained and replaced as and when needed by the Contractor.

The Contractor shall ensure that proper fire extinguishers are used to cover any kind of fire during any mishaps within the total boundary area including plant machineries. The expiry period of refills of various fire extinguishers should be etched and maintained during the period of contract.

The Contractor shall maintain all toilets in running condition for proper use by the staff. The Contractor shall make minor repairs of all civil structures, including replacement of sanitary items, glass panes etc. as and when needed.

The Contractor shall provide all consumable items in the site office for Employer for the 5 years O&M period.

The Contractor shall maintain the PLC system in working condition for the 5 years O&M period.

The Contractor shall not remove/ shift any equipment/ machinery, even temporarily, without written permission of the Engineer.

Though the Contractor has to operate and maintain all the equipment/ machineries, lighting (plant area, boundary walls, gate lightening etc.) but the machine or the equipment under warranty should not be dismantled without prior permission of the Engineer. The list of such equipment (under warranty), if any, will be given by the Contractor.

POL (Petrol/ Diesel Oil & Lubricant) shall be arranged by the Contractor as and when needed as per manufacturer's recommendations for periodic maintenance of entire plant. The Department will not provide such items.

The Contractor shall have to carry out periodical testing of the installations/ equipment as per CPWD/ OPWD specifications, relevant manuals, relevant IS standards and Indian Electricity Rules as amended up to date and shall have to maintain complete record in the maintenance register. The Contractor has to provide necessary protection system wherever necessary including alarms and fire extinguishers.

Employer will be at liberty to post its staff for surveillance/ inspection at the plant along with access to all units, control room and records, log books, MIS (Management Information System) data etc. round the clock as required. The log books and other records shall be properly maintained and any cutting should be attested by the staff from authorized Employer and all other government Agencies viz. OPCB etc. for further action/ improvements / rectifications. The staff in each shift shall mark their attendance on the log sheet individually.

The Plant and equipment covered under the above contract shall be totally maintained by the Contractor including any 'Trouble Shooting' to ensure smooth and trouble-free operation. In case of major repairs due to normal wear and tear/ break down, the Contractor shall inform the Engineer immediately and necessary measures for its repair shall be taken simultaneously. Breakdown and all repairs of any kind are to be attended by the Contractor. Any unit/ equipment being irreparable in the opinion of the Engineer will be replaced by the Contractor at no cost of Employer during the O&M period, the machinery/ media to be replaced from time to time as per manufacturer's recommendations.

All relays, pressure vessels, process instruments (measuring and controlling devices), power metering and HT equipment shall be calibrated and tested at least once a year and the report shall be submitted to the Engineer.

The Department reserves the right to carry out any work including capital works in the plants and pumping stations for improvement of the efficient parameters including coliform reduction. The Contractor shall not obstruct, hinder nor object to any such work/ works by Employer or its authorized agencies.

The Contractor shall provide the Contractor's telephone nos., contract address etc. to the Authority as well as the contact information of person in shift duty to contact him during emergency/ odd hours.

The Contractor will be responsible to carry day to day as well as periodic maintenance, necessary to ensure smooth and efficient performance/ running of all mechanical and electrical equipment and instruments installed at the Plant and pumping stations.

The Contractor shall also be responsible for maintenance/ replacement of street light poles and site lighting.

All the Plant building land sewage treated/ untreated/ gas /sludge etc. shall remain the property of Employer.

k) Typical items in SEWAGE, TPS / IPS & their checks

The purpose of maintenance is shown below.

-Pump up sewage to Sewage Treatment Plant etc.

Maintenance and management of facilities are divided into operation surveillancework and preservation work.

-Operation surveillance work is the surveillance of apparatus operation, apparatus operation at the time of usual, a pumping mode at the time of a heavy rain, and correspondence at the time of a power failure.

-Preservation work is inspection check, a periodic check, apparatus maintenance,repair of failure apparatus, cleaning, etc.

The item of the main preservation work is shown below.

Name of Facility	**Daily**	**Periodic**	
	Point to be checked	**Frequency**	**Point to be checked**
Motorised Gates	-Check Smooth-Operation	Weekly	-Check Greases up & Oils
	-Check safety equipment		-Smoothness of operation
	-Check Smooth-Operation	Monthly	-Check opening and closing time
	-Check safety equipment		
Wet wells, Channels and Chambers	-Removal of floating matter -Check of a water level	As needed basis	-Cleaning of a sediment -Check H_2S gas concentration
Coarse screens	-Check Smooth-Operation	Monthly	-Adjustment of take-up for Drive chain
	-Check of the difference of the water level before and behind a screen		-Check Screen shape -Check Operation ofa wiper
	-Remove un-removable floating matter on screens		-Adjustment of space between rakes and a screen
	-Clean-up drop garbage -Clean-up Top of Screen -Check abnormal noise		-Check of the lubricating oil level of reduction gears
	-Check safety equipment		-Check Rake-speed
	-Check manual cleaning equipment Correctness		-Check emergency stop system
Screening Conveyor	-Check Smooth Operation abnormal noise	Weekly	-Grease up & Oils
	-Meandering of a belt		
	-Check scraper performance		
	-Check rollers-performance		
	-Cleaning of Conveyor		
	-Check safety equipment`	Monthly	-Check Damage to a belt -Check Slack of a belt & adjustment of take-up -Check of an emergency shutdown system -Check Belt-speed
Submersible Pumps	-Check Smooth-Operation	Monthly	-Check pump damage

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
	-Check discharge rate, pressure, abnormal noise, Vibration -Checkup minimum submergence in wet well -Check safety equipment -Position of valve		-Check the pump lifting
		Every 6 Months	-Check wear on pump impeller -Check Oil level and grease up -Check bearings
		Every 1~3 Year	-Check pump performance & wear on pump impeller
Monorail Motorized Hoist	-Check Smooth-Operation -Check all lifting equipment including wire and hook -Check lifting and traveling performance -Check safety equipment	Monthly	-Check End-stop system
		As needed basis	-Check traveling speed -Check hoist rails, structure & support -Check deflection of girder
Valves	-Check water leakage	As needed basis	-Check seal -Check damage

l) Operation and Maintenance practices (Mechanical)

The item of the main preservation work is shown below.

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
1.HEAD WORKS/ MEDIUM / FINE SCREEN INLET CHANNELS			
Medium / Fine Screen	-Check Smooth-Operation -Check of the difference of the water level before and behind a screen -Remove un-removable floating matter on screens -Clean-up Top of Screen -Check abnormal noise -Check safety equipment -Check manual cleaning equipment Correctness	Monthly	-Check Screen-shape -Operation of a wiper -Adjustment of space between rakes and ascreen -Check of the lubricating oil level ofreduction gears -Check emergencystop system
Screenings Conveyor	-Check Smooth-Operation -Abnormal noise -Meandering of a belt -Check Smooth-Operation -Check scraper performance -Check rollers-performance -Cleaning of Conveyor -Check safety equipment	Weekly	-Check Grease up &Oils -Check emergencystop system
Screenings Conveyor	-Check Smooth-Operation	Monthly	-Check Damage to abelt

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
	-Abnormal noise -Meandering of a belt -Check Smooth-Operation -Check scraper performance -Check rollers-performance -Cleaning of Conveyor -Check safety equipment		-Check Slack of a belt & adjustment of take-up -Check Belt-speed
2.HEAD WORKS / GRIT BASINS			
Grit Collectors	-Abnormal noise -Check Smooth-Operation -Check safety equipment	Weekly	-Check grease up &Oil level of reduction gears -Remove scum&cleaning -Check emergency stop system
Grit Collectors	-Abnormal noise -Check Smooth-Operation -Check safety equipment	Every 6 Months	-Check of shaft rotation speed
Grit Collectors	-Abnormal noise -Check Smooth-Operation -Check safety equipment	Yearly	-Dry basins for checking of damage, space between rake and bottom floor, peripheral velocity, repair, painting & cleaning
Air Diffusers Assembly	-Check mixing condition in the zone -Check air flow rate & pressure	Every 6 Months	- Check the diffuser lifting equipment for performance andsmoothness - Check diffusers Assembly
		As needed basis	- Check the air flow rate and size of air bubble -Check diffuser performance -Chemical cleaning for diffusers -Remove deposited material between diffuser and basin floor
Inclined Grit Removal Equipment	-Check Smooth-Operation -Check discharge rate, abnormal noise -Check liquid leakage -Check safety equipment	Weekly	- Check grease up & Oil level of reduction gear box - Remove scum &cleaning - Clean up with water
		Monthly	- Check emergencystop system
		Every 6 Months	-Check of shaft speed -Check space betweenrake and bottom
Grit Conveyor	-Check Smooth-Operation -Abnormal noise -Meandering of a belt -Check Smooth-Operation -Check scraper performance -Check rollers-	Weekly	- Check grease up &Oils - Check emergencystop system
		Monthly	- Check damage to a belt - Check Slack of a belt & adjustment of take-up - Check Belt-speed

Name of Facility	Daily	Periodic	
	Point to be checked	**Frequency**	**Point to be checked**
	performance -Cleaning of Conveyor -Check safety equipment		
3 SBR/MBBR/MBR			
Air Diffusers Assembly	-Check mixing condition in the zone -Check air flow rate & pressure	Every 6 Months	- Check the diffuser lifting equipment for performance andsmoothness - Check diffusers Assembly
		As needed basis	- Check the air flow rate and size of air bubble -Check diffuser performance -Chemical cleaning for diffusers -Remove deposited material between diffuser and basin floor
Decanter	As per manufacturer's guidelines		As per manufacturer's guidelines
4. SLUDGE PUMP STATION			
Primary Sludge Pumps	-Check Smooth-Operation	Weekly	- Check grease up & Oil level of reduction gear box
	-Check discharge rate, pressure, abnormal noise, heat and vibration -Check sludge leakage -Check pump speed & rotation direction -Check safety equipment	Every 6 Months	- Check pump damage - Check wear of pump impeller - Check of pump speed-Clean up with water
		Every 1~3 Year	- Check pump performance
5. SCUM PIT			
Primary Scum Pumps	-Check Smooth-Operation -Check discharge rate, pressure, abnormal noise -Check safety equipment	Monthly	- Check pump damage - Check the pump lifting equipment for performance andsmoothness - Clean up with water
		Every 6 Months	Check wear onpump impeller Pump speed & rotation direction
		Every 1~3 Year	- Check pump performance
6. PROCESS AIR BLOWER BUILDING			
Air blowers	Check smooth operation Check discharge rate, pressure, abnormal noise, heat and vibration Check blower speed & rotation direction Check coupling connection Check cooling system Check air leakage Check safety equipment	Weekly	- Check grease up & Oil level of reduction gear box - Check safety equipment - Check Air filter - Check drain
		Every 1~3 year	- Check Blower performance
		As needed basis	-Check blower system -Check Silencers
EOT Crane	-Check Smooth-	Monthly	-Check end-stopsystem

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
	Operation -Check all lifting equipment Including wire and hook		- Check travelingspeed
	-Check lifting and travelling performance - Check abnormal noise and vibration - Check safety equipment	As needed basis	Check rails, structure & support - Check any damage
7. CHEMICAL BUILDING			
Monorail Motorized Hoist	-Check Smooth-Operation -Check all lifting equipment including wire and hook -Check lifting and traveling performance -Check safety equipment	Monthly	- Check End-stopsystem
		As needed basis	Check travelingspeed Check hoist rails, structure & support
8. CHLORINE CONTACT TANK INLET CHANNEL			
Motored Chlorine Injectors (In-line)	-Check Smooth-Operation -Check motor running -Check Chorine residual in chlorine contact tank -Check abnormal noise & vibration -Check chlorine gas leakage by ammonia liquor -Check Gas pressure gauge, vacuum gauge, gas flow meter -Check safety equipment	Weekly	-Check damage of chlorine gas supplyline -Check back flow prevention valve -Check leakage of chlorine solution
		Yearly	-Check the injector maintenance lifting equipment for performance -Check in-line injector performance and smoothness
9. CHLORINE BUILDING			
Chlorinators	- Check solution leakage and/or chlorine gas - Check Gas pressure gauge, gas flow meter - Check dosing rate/amount - Check chlorine gas rate valves, check valves& pipe line -Check safety equipment	Weekly	- Check total System
Chorine Cylinders (Ton)	- Check chlorine gas / solution leakage - Check no gas leakage, and no wet or keep dray in the room -Check room temperature & humidity -Check Gas header, pipe line& gasket -Check safety equipment	Weekly	- Check Condition of the cylinder-material and safety valve -Check storage way -Classification of cylinder as new or empty, and check the stock -Cleaning
Cylinder Scales	-Cleaning weight area	Weekly	-Check measuringerror
Cylinder Lifting Equipment& Hoist	-Check Smooth-Operation -Check lifting equipment	Monthly	-Check End-stopsystem
		As needed	-Check travelingspeed -Check hoist rails,

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
	-Check lifting and travelling performance -Check safety equipment	basis	structure & support
Safety Equipment	-Check performance of chlorine gas detectors and sensors, Ventilation system -Check sequence of Auto / manual mode -Check safety equipment	Weekly	-Cleaning gas detector& sensors -Clean up the areainstalled detectors -Check safety shower performance
		Monthly	-Try-on oxygen mask,other safety appurtenances -Check Gas LeakageRepair Kits
Neutralization Equipment (Emergency Chlorine Scrubber)	-Check NaOH solution leakage from the tank / equipment /pipe/ valves -Check solution level -Check performance of splays, pumps -Check performance of exhaust blower -Check safety equipment	Weekly	-Check pH of NaOH solution
10. PLANT WATER PUMP STATION			
Submersible Pumps	-Check Smooth-Operation -Check discharge rate, pressure, abnormal noise -Check safety equipment	Monthly	-Check pump damage -Check the pump lifting equipment for performance and smoothness -Clean up with water
		Every 6 Months	-Check wear on pump impeller -Pump speed & rotation direction
		Every 1~3 Year	-Check pump performance
Monorail Motorized Hoist	-Check Smooth-Operation -Check all lifting equipment including wire and hook -Check lifting and travelling performance -Check safety equipment	Monthly	-Check End-stopsystem
		As needed basis	-Check travelingspeed -Check hoist rails, structure & support
11. CENTRIFUGE BUILDING			
Centrifuge Feed Pumps	-Check Smooth-Operation -Check discharge rate, pressure, abnormal noise, bearing temperature & vibration -Check feeding rate to meet speed of dewatering equipment -Check sludge leakage -Check safety equipment	Weekly	-Check grease up &Oil level of reduction gear box -Check safety equipment -Clean-up with water
		As needed basis	-Check pump performance

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
Dewatering Centrifuges	-Check Smooth-Operation -Check pressure, abnormal noise, bearing temperature & vibration	Monthly	-Check quality of oilin reduction gear box -Check all safety equipment -Clean-up drain pipeof separate liquid
	-Check feeding sludge concentration and ratio of Polymer dosing -Check cake moisture and G-value -Check SS in drain -Check emergency stop system -Check no liquids leakage from casing, loose bolts/ Nuts/ tighten -Check grease up & Oil level of reduction gear box -Check safety equipment	Every 1~3 Year	-Check dewatering centrifuge performance
		As needed basis	-Check dewatering centrifuge system -Check space betweenscrew and casing
Conveyer (Sludge Cake)	-Check Smooth-Operation -Abnormal noise -Meandering of a belt -Check Smooth-Operation -Check scraper performance -Check rollers-performance -Cleaning of Conveyor -Check safety equipment	Weekly	-Check grease up &Oils -Check emergencystop system
		Monthly	-Check damage to abelt -Check Slack of a belt & adjustment of take-up -Check Belt-speed
Cake Hopper	-Check Smooth-Operation -Check abnormal noise& vibration -Check gate operation on opening and closing	Weekly	-Check grease up &Oils -Check gate performance
		As needed basis	-Check cake hopperassembly
Powder Polymer Storage Hopper	-Check Smooth-Operation -Check abnormal noise & vibration -Check no polymer bridge	Weekly	-Check grease up &Oils -Cleaning dust off

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
	-Check safety equipment -Check Smooth-Operation -Check abnormal noise & vibration -Check no polymer bridge -Check safety equipment	As needed basis	-Check powder polymer storagehopper assembly
Auto Feeder	-Check Smooth-Operation -Check abnormal noise &vibration -Check feeding rate -Clean-up feeder	Weekly	-Check feeding accuracy -Clean up feeder
Auto Feeder	-Check Smooth-Operation -Check abnormal noise & vibration -Check feeding rate -Clean-up feeder	As needed basis	Check the feeder performance
Polymer Batch Tanks	-Check corrosion condition -Check leakage -Check drain & Over flow pipe	Weekly	-Remove deposition substance -Clean up tank &touch-up painting
Polymer Mixers	-Check Smooth-Operation -Check abnormal noise & vibration -Check mixing time -Check safety equipment	Weekly	-Clean up mixer
Polymer Mixers	-Check Smooth-Operation -Check abnormal noise & vibration -Check mixing time -Check safety equipment	Monthly	-Check mixing speed -Check shaft and coupling connection
Polymer Feeding Pumps	-Check Smooth-Operation	Monthly	-Check accuracy offlow rate -Clean up with water
	-Check discharge rate, pressure, abnormal noise and vibration	Every 1~3 Year	-Check pump performance

Name of Facility	Daily	Periodic	
	Point to be checked	Frequency	Point to be checked
Motorized Monorail Hoist	-Check Smooth-Operation -Check all lifting equipment including wire and hook -Check lifting and traveling performance -Check safety equipment	Monthly	-Check End-stopsystem
Motorized Monorail Hoist	-Check Smooth-Operation -Check all lifting equipment including wire and hook -Check lifting and traveling performance -Check safety equipment	As needed basis	-Check traveling speed -Check hoist rails, structure & support
12. BELT FILTER PRESS (IF PROVIDED)			
Belts, nozzles, gear box, wash station, drainage section, rollers, tension assembly, drive train, hydraulic power unit	-Clean belts by running belt drive and wash system without sludge or polymer for a minimum period of 45 minutes -Clean spray nozzles on wash box -Check fluid level in hydraulic unit and fill as required -Lubricate bearings	Weekly	Inspect wear items specifically chicanes, scrpper blades, gravity drainage grid, dwatering belt, rubber seals on the sludge restrainer – and wash station. Replace as required. Follow lubrication requirements on motor nameplates. Inspect frame and and roller coatings for wear Inspect belt guides and wiper bars
		Monthly	- Clean belt with a soap and bleach mixture - Inspect belt seam wires for break and replace if broken.
		Every 6 - months	- Clean hydraulic filterscreen - Check il level in driveunit gear box - Inspect polymer mixer / injection assembly andclean if required. - Replace belt seamwires
		1~3 year	-Change the oil in thedrive unit gear box. If the drive unit gearbox is used in a high humidity,or corrosive environment, the lubricate has to be changed more frequently. -Drain, flush and grease the gearcase.

m) Operation & Maintenance practices (Electrical)

i. Typical items in Electrical Facility & their checks

Name of equipment	Daily	Periodic	
	Description	Frequency	Description
Transformer	Verification of KVA, V, A, abnormal sound, current protection, oil temperature	Every 6 Months	- Verification of general performance, - Verification of oil levels, silica gel in breather, OLTC, OTI, WTI, Buchholz relay, CTs etc, testing of oil, verification of earth connections, IR measurement.
11 Kv Switch board and Switch gears	Verification of kVA, kW, kWh, V, A, PF, Hz, healthiness of protections, indications, alarms, abnormal sound, burning smell.	Every 6 Months	- Verification of condition of breakers, switches, relays, protective devices, earthing, wiring and connections.
PCC/ MCCs/ MLDB	Verification of V, A, healthiness of protections, lamps, abnormal sound, burning smell	Every 6 Months	- Verification of condition of breakers, switches, push buttons, relays, protective devices, earthing, wiring and connections
Variable Frequency Drives	- Verification of Input & output voltage, current, frequency. - Verification of Indications, alarm & protections.	Every 6 Months	- Verification of condition of breakers, switches, pushbuttons, relays, protective devices, earthing, wiring and connections. - Verification of working of converter, inverter, DC Link. - Verification of Harmonic Distortion.
Lighting panels	Verification of lamps, abnormal sound, burning smell.	Every 6 Months	- Verification of condition of breakers, switches, earthing, wiring and connections.
Meters reading	Verification of V, Am, overload protection	Every 6 Months	- Verification of over load protection indication, switch on/Off, accuracy, damage

Diesel Generator Set	- Verification of Engine oil level, Engine oil leakage, air & oil filters, cooling fans, fuel level, water level etc. - Verification of battery voltage, charging & self-start. - Verification of abnormal sound, vibrations etc. - Verification of Voltage, current, frequency, RPM, Indications, Alarms & Protections. - Verification of Oil leakage, fuel leakage. - Verification of Interconnecting Cable, earthing, loose connections etc .	Every 250 hours/ 6 Months	- Verification of Conditions of filters. - Verification of Condition of cooling fan. - Verification of Condition of battery & charger. - Verification of self-start system - Verification of condition of engine, alternator & accessories, doors ofacoustic enclosure, exhaust system etc. - Verification of conditions of Breakers, Switches, Push Buttons, Relays etc. - Verification of Auto / Manual operation, all interlocks, synchronising . - Verification of Indications, Alarms & Protections. - Verification of Condition of Inter connecting Cables, Connection & earthing including Neutral Earthing of AC Generator.
Cable system	Verification of short circuit, burning smell, loose connections, local heating	Every 6 Months	- Verification of voltage drop, damage, insulation resistance
Lighting Fixtures	Verification of working of lamps & ballasts.	Every 6 Months	- Verification of illumination level - Verification of condition of lamps & ballasts. - Cleaning of lighting fixtures. - Verification of wiring.
Switch board	Verification of operation of switches, sockets.	Every 6 Months	- Verification of condition of switches, sockets & fan regulators. - Verification of wiring.
Switch Socket	Verification of operation of Switch	Every 6 Months	- Verification of condition of Switch &
Ceiling Fan	Verification of operation of Fan.	Every 6 Months	- Verification of condition of ceiling fan. - Verification of condition of bearing, abnormal sound/ noise.
Power sockets	Verification of operation of MCB, Plug & Socket.	Every 6 Months	- Verification of condition of MCB, Socket & Wiring.

General	- Inspection of General appearance of various Electrical equipment/ items. - Verification of Cable System for Short circuit, smell, damage etc.	Every 6 Months	- Verification of condition of cables, wires& connections. - Verification of Insulation resistance of individual equipment, cables and total system. - Verification of Condition of Earth Connections.

ii. Electrical System Operation Practices

All the electrical equipments shall be handled and operated by a trained and authorized person only. All the equipment shall be checked for its proper earthing and loose connections prior to start the equipment. Naked wire, loose connections and faulty connections shall be repaired immediately prior to start for operation.

Electrical sockets and switch shall not be touched by bare or wet hands. If there is any live wire found naked or on wet ground, main switch shall be turned off first then the wire shall be repaired or moved.

For any electrical works proper insulated tools shall be used. Do not try to use tools made for other purpose; it may be hazardous.

n) Operation & Maintenance practices (Instrumentation, Control & Automation)

i. General maintenance

A comprehensive maintenance program is critical to attaining long-term reliable performance of SCADA Systems / ICA systems. Periodic device calibration, preventive maintenance, and testing allow potential problems to be identified before they can cause mission failure. Prompt corrective maintenance assures reliability by minimizing downtime of redundant components.

The EPC or Turnkey contractor has to enter in to AMC contracts with system / equipment suppliers of ICA, as necessary. It is mandatory to enter into an agreement for a period of 5 years operation & maintenance contract with the instrumentation, PLC and SCADA system supplier and wireless communicationsupplier or the authorized system integrator, whosoever has executed the work for this project.

ii. Preventive maintenance

The SCADA system should be part of the overall preventive maintenance (PM)program for the facility.

Table below provides a list of recommended maintenance activities andfrequencies for ICA systems and their components.

Preventive maintenance schedules for ICA components and subsystems should be

coordinated with those for the mechanical/ electrical systems they serve tominimize overall scheduled down time.

Activity	Frequency
Pneumatic Systems/Components/Instruments	
Check Regulators and Filters	Monthly
Inspect Tubing and Piping	Monthly
Actuate Pressure Switches	3 months
Calibrate Switches and Sensors	Yearly
Calibrate Pressure Gauges	Yearly
Calibrate Level Transmitters	Yearly
Calibrate Flow transmitters	Yearly
Calibrate Pressure Transmitters	Yearly
Calibrate Thermometers	Yearly
Calibrate Analytical Instruments/Online Instruments (pH, ORP, Turbidity, etc..)	6 Months
Change Sampling solution of Analytical Instruments	As required
Electronic Systems	
Lamp Test/Verify Indicators	Monthly
Inspect Enclosures for Dirt, Water, Heat	Monthly
Run PLC Diagnostics	3 Months
Calibrate Sensors and Transmitters	Yearly
Calibrate Meters	Yearly
PLC Communication Modules	Monthly
PLC Batteries	Yearly
Test Automatic control Sequences	Monthly
Verify Alarms	Weekly
Software Maintenance and Patching	3months
Anti-virus Definition Updates	Monthly
Inspect Wire, Cable and Connections	Monthly
Inter site Communication Network	Weekly
Dead Bus Relays	3 Months
UPS setting with SCADA	Weekly
PLC Redundant Power back up	Monthly
SCADA Redundancy	Monthly
Network Redundancy	Weekly
PLC Hot-Standby	Monthly
Historian Package (Capacity)	Monthly
Data Archiving	Monthly

a. Many components of SCADA systems, such as dead-bus relays, are not required to function under normal system operating modes. For this reason, the system should be tested periodically under actual

or

simulated contingency conditions. These tests should approach as closely aspossible the actual off-normal conditions in which the system must operate. For

example, SCADA for Dual Redundant system should be tested by interrupting the utility source as far upstream of the normal service as possible.

b. Periodic system testing procedures can duplicate or be derived from the functional performance testing procedures.

c. The SCADA software maintenance should include timely updates of any new versions from the supplier and testing to verify proper installation on the SCADA computer. In addition, software antivirus updates should be maintained. This should be performed any time after the computer is connected to the Internet or the antivirus patch should be downloaded as and when the updates are available. Normal operation requires that the SCADA computer not be connected to the Internet.

Faulty Instruments, sensors, transmitters, communication modules, computer hardware should be replaced with new components. Repair of the items would not be accepted.

iii. Concurrent maintenance

Concurrent maintenance is defined as testing, troubleshooting, repair or replacement of a component or subsystem while redundant component(s) or subsystem(s) are serving the load. The ability to perform concurrent maintenance is critical to attaining the specified reliability/ availability criteria for facilities and must be designed into the SCADA system. Where SCADA components are associated with equipment that has redundancy and therefore are not themselves redundant, their maintenance should be scheduled to occur during maintenance of the associated equipment. SCADA components and controllers that are redundant must be capable of being taken out of service, repaired or replaced and tested without interfering with the operation of the redundant component.

iv. Reliability centered maintenance

Reliability-centered Maintenance (RCM) is an approach for developing an effective and efficient maintenance program based on the reliability characteristics of the constituent parts and subsystems, economics, and safety. RCM provides a logical, structured framework for determining the optimum mix of applicable and effective maintenance activities needed to sustain the operational reliability of systems and equipment while ensuring their safe and economical operation and support.

A significant by-product of the application of SCADA systems to the control of facilities is the large amount of operational data made available through the trending and data storage features of the SCADA. This operational data can be used for automated performance monitoring of mechanical and electrical systems that can support a RCM approach.

v. Operations and maintenance documentation

The contractor should perform an O&M analysis to determine the O&M data required to support maintenance of the SCADA system. This analysis should be coordinated with BWSSB to determine maintenance parameters and O&M data that are available. Typical O&M data requirements include the following items:

a. System documentation as defined in FDS, FAT & SAT documents
b. Minimum spare parts list.
c. Recommended spare parts list.
d. Recommended onsite test equipment.

e. Recommended O&M training.
f. Recommended O&M to be performed by contractor

vi. Spare parts stocking

An adequate on-site stock of spare parts is essential to obtaining high availabilityof ICA systems. All spare parts used for the equipment in the maintenance of the system must be from the manufacturer of the equipment or, if the equipment itself has been made with parts from other manufacturers, the parts must be of the same make as used in the equipment supplied and installed.

All spare parts shall be packed for long storage under the climatic conditions prevailing at the Site. Each spare part shall be labelled on the outside of its packing with its description, number and purpose and, if more than one spare is packed in a single case, a general description of the case contents shall be shown on the outside and a packing list enclosed.

Minimum recommended stocking levels include the following. These quantities may need to be increased for components which are used in large numbers in the facility:

(1) Manufacturer's recommended spare parts list.

(2) One each of all line replaceable boards or modules.

(3) Six each power and control fuses used in the system.

(4) Tools required to terminate coaxial on fibre optic cables.

Automation:

(1) Laptop computer loaded with software required to access controllers.

(2) Licenses for all software installed on the system.

(3) Permission to modify program code.

(4) Spare cables for connecting computer to controllers.

(5) PLC CPU, Power supply module, 1 DI, DO, AI, AO modules, Communicationmodule, protocol converter etc.

(6) PLC batteries, fuses, etc.

vii. Utilities & Consumables

The contractor has to provide consumables for printers e.g.: Ink cartridges (colour& B/W), A4, A3, A1 size of paper, dot-matrix print paper for a period of 7 years.

Downtime of the above system should not exceed more than 2 hours.

viii. Technical support

The Contractor should specify functional areas of the operating system and/or equipment where a technical representative will be furnished by the manufacturer for training, test, checkout, validation, or pre-operational exercises.

Ongoing O&M of SCADA system software may require technical support from the system vendor or from agency technical personnel not located at the facility. Commercial SCADA software typically has provisions for remote modem access that permit this type of support from the vendor's location or an agency central engineering group.

Such remote access provisions represent a vulnerability to “hacking” and must be used with great caution. They should be monitored when in use and physically disconnected when not in use.

Password protection policies for all SCADA systems, including PLC’s, shall be in compliance with Established policies and to be agreed with the Authority’s representative.

These policies require that the default password that came from the control supplier be changed when placed into operation at the facility.

o) Release of Bio-Gas

The Contractor shall conduct their activities in the Plant and pumping stations in such manner that Bio-Gas will not be released or leak at the site or elsewhere. The Contractor shall bear the cost of correcting any adverse consequences resulting from any such release, leakage or spillage and shall make / file reports with respectto enquire under the conditions of contract for operation and maintenance and applicable law. In case release /flaring of bio-gas is required, necessary arrangement shall be provided for flaring the gas as per the norms as prescribed by PCB / competent regulatory authority.

p) Release of Hazardous Substances or Hazardous Wastes

The Contractor, after first notifying the Authority, shall be responsible for fulfilling all requirements associated with any release of any substance or waste into the environment (from the facility to the site) as required by the Applicable law or by any Legal Entitlement including but not limit to the notification or reporting of release of Hazardous Waste. The Contractor shall prepare memorandum evidence on such notification or reporting and provide copies thereof to the Authority along with any documents provided to the relevant regulatory agency regarding such release. The Contractor shall store and dispose of plant residuals (bio-solids) offsite in accordance with the rules and regulations in effect at the time the SEWAGEis commissioned, technically under latest norms as declared by Central / Orissa Pollution Control Board and get the certificate of residual disposal from the authority, submit to the Authority in each time.

q) Technical Audit

The Engineer has the right to conduct a technical audit of the Plant and pumping stations and to perform any analysis or inspection it deems necessary. Before any such inspection the Authority shall give a prior written notice of three days to the conductor of the audit. The Contractor shall at the Contractor‘s own cost and expenses provide all assistance the Authority requires to complete these audits and inspections. Such audits may cover all or any of the obligators, including without limitations:

1. Verifications of the system / capacity for normal wear and tear during the O&M period.
2. Verifications of the performance standards and useful life of the individual assets of the Plant and pumping stations for normal wear and tear during the O&M period.
3. Verifications of the capacity of the Plant and pumping stations to meet Output standards.
4. Measurement of various parameters of power generated.

r) Plant and Pumping Stations Visits

At any point of time or at the end of each twelve-month period or at the initiative of the Authority, a visit shall be organized so that both parties can check the condition of the installations of the Plant and pumping stations. A report shall be drawn up to record the opinions of both parties. The Authority reserves the right to call the equipment manufacturers or specialized technicians for these visits. All expenses are to be borne by the Contractor for the purpose.

s) Operations and Maintenance Manual

The Contractor shall provide six copies of draft O&M Manual to Employer at the time of the commissioning of the project and on approval of draft, 10 copies of the final O&M Manual shall be supplied by the Contractor. The O&M manual shall include detailed operation and maintenance instructions, procedures and policies required. The Contractor shall provide a complete O&M manual for the Plant and pumping stations to achieve full compliance with the operational guarantees. The O&M Manual shall also include the instructions required to provide the necessary maintenance and repair for the Plant and pumping stations for full compliance with the maintenance specifications.

Without limiting the generality of the foregoing, the O&M Manual shall include descriptions, procedures and shall comply with the requirements, set forth in the provisions of the Bid Documents. Four (4) copies of the draft O&M Manual shall be submitted for review. The draft O&M manual shall be subject to the review and approval of Employer who shall have all rights to make any changes and revisions to the O&M Manual as it may deem appropriate. The Contractor shall revise such draft O&M Manual prior to the commencement of the O&M period.

During the Defects Notification / Liability Period (D N/L P), the Contractor shall revise the draft O&M Manual to reflect any updates, changes or revisions, it deems appropriate, inter alia based on its experience and necessity to reflect any modifications or adjustments to the plant. Without limiting the above, the Contractor shall annually review, revise, update and modify the draft O&M Manual fully as may be necessary or appropriate. Any revision to the draft O&M Manual shall be subject to the review and approval of Employer. Employer shall have the right to require revisions to the O&M Manual as it may deem appropriate. The Contractor shall prepare and submit to Employer, for its review and approval, 30 days prior to the proposed date of "Taking Over", a revised draft O&M Manual which reflects all changes, revision and modifications. The Contractor shall prepare the O&M Manual, as approved by the Authority, prior to the date of taking over operation and maintenance of the Plant and pumping stations.

During the term of the Contractor's agreement, the Contractor shall promptly notify Employer of any revisions, additions or modifications which the Contractor, in the Contractor's professional opinion, believes should be made to the O&M Manual, whether as a result of additional experience in operating and maintainingthe Plant and pumping stations, or changes in influent quality or volume changes or modifications to any equipment, part component or structure incorporated in the Plant and pumping stations: Such notification shall set forth the reason for the proposed revision. Any proposed revision shall be subject to the approval of the Authority or Engineer. In addition, during the term of the Contractor's Agreement,

Employer shall have the right to require relevant changes, revisions, or additions to the O&M Manual, as it shall deem appropriate to ensure full compliance with O&M standards. The Contractor shall submit 10 copies of the Final O&M Manual.

t) Issue of Completion Certificate for Operation and Maintenance

The Authority shall issue a Completion Certificate for "Operation and Maintenance" after successful completion of O&M by Contractor to the satisfaction of the Authority.

9.17. Operation & Maintenance:

On issue of provisional completion certificate, the Operation & Maintenance of the project are to be under taken by the Executing Agency for a period of **5 (Five) years** with supply of manpower, chemicals, consumables & other repair & maintenance works including spare parts, if any. The energy charges shall be paid by the Department directly to the concerned electrical authority. Any defects/discrepancies noticed in civil, mechanical and electrical works has to be attended promptly. It is to be ensured consistently that the sewage is efficiently collected through the property connections and safely conveyed through gravity sewer network to the corresponding sewage pumping stations where from it is efficiently pumped to the proposed STP where the raw sewage shall be treated to consistently produce the treated sewage of desired quality. Daily test of the treated sewage samples is to be carried out by the Executing Agency. The entire project needs to be operated up to **24 Hours per day**.

9.18. Works to be performed for Operation & Maintenance:

9.18.1 **Raw sewage collection**

i) Monitoring of smooth flow from the property connections into the gravity network shall be assessed.

ii) Blockages if any has to be removed to maintain the smooth flow.

9.18.2. Raw sewage conveyance (gravity & pumping)

The conveyance would include gravity sewers as well as sewage pumping mains from sewage pumping station to the sewage treatment plant.

A) All pipes

i) Sufficient stock of spare pipes and specials and jointing materials should be maintained for replacement of damaged ones.

ii) Performance of Sluice valves, air valves, expansion joints, etc. shall be monitored regularly.

iii) Regular Leak detection surveys should be undertaken particularly for bursting of pipes and leaky joints.

iv) A detailed record of break downs and leaks observed and repaired should be maintained section-wise so that more vulnerable lengths could be identified and special measures to repair / replace them could be undertaking.

v) A regular schedule of inspection and attendance to all valves including air and scour valves should be drawn up and the same followed scrupulously. Specials attention should be given to air valves.

vi) Regular inspection of manholes to check and remove blockages

B) Pumping main laid above ground

i. Pipes should be painted at least once in five years to prevent corrosion.

ii. Appurtenances such as sluice valves, air valves, expansion joints, roller should be checked, cleaned at least twice a year and worn-out parts replaced. The cleaning and lubrication of rollers should also be done twice a year, preferably pre and post monsoon.

iii. Expansion joints should be inspected every month.

iv. The catch drains provided for the portion of water mains laid in cutting should be cleaned before on set of monsoons so that no water accumulates in the cutting portion, resulting in uplift pressure on pipes.

9.19. Sewage Treatment Plant

The person in charge of the maintenance and operation of sewage treatment plant should have a thorough knowledge of the functions of the several units under his control should be a position to bring to the notice of the concerned Engineer-in-charge any faults in design and execution giving rise to problems during the course of operation and rectify them immediately.

The maintenance programme should observe the following general rules.

a) Keep a set of plans giving details of the several units and indicting the layout and position of all pipe lines and appurtenances.
b) Establish a systematic plan of daily operations.
c) Establish a routine schedule for inspection of machinery and lubrication and maintain records thereof. Instructions for lubrication, the type of lubricant suggested and the frequency of lubrication should be drawn out.
d) Main data and record of each piece of equipment giving details of cleaning and replacement of worn parts and other data of importance such as unusual incidents on faulty operating conditions.
e) Keep a record of analysis of water collected at various points from the source to the distribution system and observation on the effect of such quality on the several units of operation.

9.19.1 Chemical Feeding Unit

i) Keeping adequate Spares
ii) Inspect test facilities

9.19.2 Stilling chamber, screen channel, grit chamber, chlorine contact tank

i) Periodical painting with weather proof paint.
ii) Annual Overhauling and repainting a month or two prior to monsoon.
iii) Free of blockage of sludge lines
iv) Periodical cleaning of channels
v) Keeping adequate spare parts for mechanical, electrical & instrumentation components

9.19.3 Sequential Batch Reactor Basin

i) Daily Check for cycle of operation.
ii) Free of blockage of sludge lines
iii) Check and monitor performance of blower
iv) Check and monitor performance of decanter & diffusors
vi) Keeping adequate spare parts for mechanical, electrical & instrumentation components
v) Status of functioning of Instrumentation, Valves, Blowers, gauges etc.
vi) Check for corrosion of all underwater equipment

9.19.4 All sumps & pump houses, centrifuge shed & centrifuge

i) Daily Check for cycle of operation.
ii) Free of blockage of sludge lines
iii) Check and monitor performance of pumps
iv) Check for leakages in pipes and pipe appurtenances
v) Keeping adequate spare parts for mechanical, electrical & instrumentation components
vi) Status of functioning of Instrumentation, Valves, gauges etc.
vii) Check for corrosion of all underwater equipment

9.19.5. MAINTENANCE AND REPAIRS OF ELECTRICAL EQUIPMENT

i) CONSUMABLES

Adequate stock of lubricating oil and transformer oil should be maintained.

ii) REPLACEMENT SPARES

To avoid downtime, stock of fast-moving spares and of spares likely to be damaged by short circuit should be maintained. A set of recommended spares for two years of trouble-free operation should be kept.

9.19.6 TOOLS AND TEST EQUIPMENTS

Tools such as crimping tools, soldering, brazing and usual electrical tools should be available.

9.19.7 PREVENTIVE MAINTENANCE

As preventive maintenance, a schedule for the maintenance of the equipment shall be followed. The schedule covers recommendations for checks and remedial actions, to be observed at different periodicities such as daily, monthly, quarterly, semi-annually, annually and bi-annually.

9.19.7.1. DAILY

(i) For Motors

(a) Check bearing temperatures

(b) Check for any undue noise or vibration

(ii) For panel, circuit-breaker, starter;

(a) Check the phase-indicating lamps

(b) Note readings for voltage, current, frequency etc

(c) Note energy meter readings

(iii) For transformer substation

(a) Note voltage and current readings

9.19.7.2 Monthly

(i) For motor: nothing special other than the daily checks

(ii) For panel, circuit-breaker, starter

(a) Examine contacts of relay and circuit breaker. Clean, if necessary.

(b) Check setting of cover-current relay, no volt coil and tripping mechanism and oil in the dashpot relay.

(iii) **For transformer substation**

(a) Check the level of the transformer oil

(b) Check that the operation of the GOD is okay.

(c) Check contacts of GOD and of over-current (OC) relay

(d) Check temperatures of the oil and windings

(e) Clean radiators to be free of dust and scales

(f) Pour 3 to 4 buckets of water in each earth-pit

9.19.7.3 Quarterly

(i) <u>For motor:</u>

(a) Blow away dust and clean any splashing of oil or grease

(b) Check wear of slip ring and bushes, smoothen contact-faces or replace, if necessary. Check spring-tension. Check bush-setting for proper contact on the slip-ring.

(c) Check cable connections and terminals and insulation of the cable near the lugs, clean all contacts, if insulation is damaged by overheating investigate and rectify. All contacts should be fully tight.

(ii) <u>For panel, circuit-breaker, starter, etc.</u>

(a) Check fixed and moving contacts of the circuit breakers/ switches. Check and smoothen contacts with fine glass-paper or file.

(b) Check condition and quantity of oil / liquid in circuit-breaker, auto-transformer starter and rotor-controller.

(iii) <u>For transformer substation:</u>

(a) Check condition of the H.T.bushing.

(b) Check the condition of the dehydrating breather and replace the silica-gel charge, if necessary. Reactivate old charge for reuse.

9.19.7.4. Semi-Annual

(i) <u>For motor</u>

(a) Check condition of oil or grease and replace if necessary. While greasing avoids excessive greasing.

(b) Test insulation by megger.

(ii) <u>For panel, etc</u>

Check for corrosion and take remedial measures. Check by megger the insulation-resistance of switches, bus-bar, starter-terminals, auto-transformer, etc for phase-to-earth and phase-to-phase, resistance.

(iii) <u>For transformer substation,</u>

(a) Check dia-electric strength and acid-test of transformer oil and filter, if necessary.

(b) Test insulation by megger

(c) Check continuity for proper earth connections.

9.19.7.5 Annual

(i) <u>For motors</u>

(a) Examine bearings for flaws, clean and replace if necessary

(b) Check end-play of bearings and reset by lock nuts, wherever provided.

(ii) <u>For panel, etc</u>

(a) All indicating meters should be calibrated

(iii) <u>For transformer substation</u>

(a) Check resistance of earth pit/earth electrode

9.19.7.6 Bi-Annual

(i) For motor: Same as Annual
(ii) For panel, etc. Same as Annual
(iii) For transformer substation

(a) Complete examination including internal connections, core and windings.

9.20 TROUBLE SHOOTING FOR ELECTRICAL EQUIPMENT

Trouble-shooting comprises detecting the trouble, diagnosing the cause and taking remedial action. Detection of the trouble is prompted by noticing the symptoms. The trouble shooting details are hence outlined hereunder for various symptoms.

9.20.1.MOTOR GETS OVERHEATED

(i) Check whether voltage is too high or too low. Change tapping of transformer, if HT supply is availed. Otherwise approach Power supply authorities for correction of the supply voltage.
(ii) Check whether air ventilation passage of motor is blocked. Clean the passage.
(iii) Check whether the motor bearings are properly lubricated or damaged. Replace the damaged bearings and provide proper lubrication.
(iv) Check whether the cable terminals at the motor are loose. Tighten the terminals.

9.20.2 MOTOR GETS OVER LOADED: (DRAWING MORE THAN THE RATED CURRENT AT THE RATED VOLTAGE)

i) Check any excessive rubbing in the pump or any clogging of the impeller passages.
ii) Check whether characteristics of pump (i.e. the related driven equipment) are of the overloading type.
iii) Check for any vortices in the sump
iv) Check that there is no short-circuiting or single-phasing.
v) Check whether any foreign matter has entered the air-gap, causing obstruction to the smooth running of the motor.

9.20.3 STARTER / BREAKER TRIPS

(i) Check whether the relay is set properly. Correct, the setting, if necessary
(ii) Tripping can also occur, if motor is drawing more than the rated current, for which details are mentioned above.
(iii) Oil in dashpot may be either inadequate or of flow viscosity
(iv) Check that there are no loose connections
(v) Check whether the time setting of star delta or auto transformer starter is proper.

9.20.4 VIBRATION IN MOTOR

(i) Check for structural rigidity of supporting frame and foundation
(ii) Check alignment of pump and motor
(iii) Check that the nuts on foundation bolts are tight
(iv) Check if rotor has an imbalance
(v) Check the resonance from supporting structure or foundation or from critical speed of rotor or from vibration of adjoining equipment.

9.20.5 CABLES GET OVER-HEATED

(i) Check whether the cable is undersized. Change the cable or provide another cable in parallel.
(ii) Check for loose termination or joint. Fasten the termination and make proper joint
(iii) Check whether only a few strands of the cable are inserted in the lug. Insert all strand using a new lug, if necessary.

9.21 Pumps:

Pumps should be operated only within the recommended range on the H-Q characteristics of the pump. The maintenance schedule should enlist items to be attended daily, semiannually, annually as follows:

9.21.1 Daily Checks:

A log book should be maintained to record covering the following items; such as;

a. Timing of pump running

b. Observe for leakages through stuffing box
c. Bearing temperature
d. Any undue noise or vibration
e. Readings of pressure, voltage and current

9.21.2 Half Yearly checks

i) Free movement of the gland of stuffing box
ii) Cleaning and oiling of gland bolts
iii) Inspection of the gland packing and repacking, if necessary.
iv) Alignment of pump and drive
v) Cleaning of oil/grease lubricated bearings and replenishing fresh oil and grease.

9.21.2 Annual Checks:

a. Clean and examine all bearings for flows
b. Examine shaft sleeves for wear or scour
c. Check clearance at wearing ring
d. Check impeller hubs and vane tips for pitting or erosion
e. Calibration of all instruments and flow meters
f. Check performance of pump Q, H, KW and efficiency
g. Check for availability of required tools
h. Check for availability of lubricants and other consumables such as gland packing, bolts etc.
i. Check for repair facilities such as pullers, clamps, machinery, welding set, grinder, blower, drilling machine etc.
j. Records to be kept on the operations.
k. Stock of fast-moving recommended spares for two years of trouble-free operation shall be kept.

9.22 Sumps and basin

i) Check for proper operation of valves, functioning of Water level indicators, lighting arrestor, functioning /cleaning of ventilators; to guard against mosquito breeding and bird dropping.
ii) Check for corrosion of Manhole covers; inter connecting pipes, ladder and railings and replace, if required.
iii) Cleaning of sumps shall be under taken at least once in a year.
iv) Roofing shall be periodically checked to ensure no leakages are there.
v) Check for any structural damages/leakages through the structure of sumps and interconnecting pipes, valves etc. Structural damages and leakage should be promptly repaired.
vi) Check for the availability of consumables, spares and tools
vii) General cleanliness in around the reservoirs should be maintained.

9.23 Additional checks to be carried out in the gravity sewer network:

i) Check for oozing of manholes in gravity sewer and leaking of pipe & valves in pumping mains etc. shall be made at regular intervals.
ii) Adequate spares for valves and pipes and jointing materials shall be kept.
iii) A regular programme of leak detection of all pumping amins and gravity sewers shall be made at least once in three years. Leaks and damages detected shall be promptly required.
iv) Recording of number of property connections given
v) Status of bulk metering at pumping stations - number of meters out of order, quantity of inflows and outflows shall be made.
vi) Identification and disconnection of unauthorised property connections if any shall be made.
vii) Identification and disconnection of storm water connection if any shall be made.

9.24 Control of quality of treated sewage:

The physical, chemical and bacteriological tests of sewage samples need to be carried out at frequent intervals as per direction of Engineer-in-charge at stilling chamber and at chlorine contact tank.

9.25 Odour control:

It shall be made as per CPHEEO Manual.

Note:

1. Any item or any provision/requirement if not included in the Scope of work, but is necessary to be provided for the completion of the project and for its functional necessity, the contractor shall provide the same. No extra payment shall be admissible on this account.

2. If any mismatch is observed between the specifications reflected in the BoQ and the corresponding details mentioned in Section-8 & 9 of DTCN or, if specification of any item/component/sub-item is not mentioned in the DTCN/BoQ then, in such cases, decision of the Engineer-in-charge shall be final & binding.

All provisions of the technical scope of work & terms & conditions of the contract have been read by Me/Us and I/We certify that I/We clearly understand them & agree to abide by them.

Witness **Contractor**

SECTION-10

PAYMENT BREAK-UP SCHEDULE

(A) Payment Break-Up Schedule for Pump Sets, VFD Control Panels, PLC System, Actuator Valves, Electric Operated Electromagnetic Flow Meter
(To be procured after approval of QAP & permission from Authority)

Sl.No.	Description of item (payment after completion of item)	Percentage breakup of Price Bid.
1	On Supply of materials with all original test/ guarantee certificates & other required documents	70%
2	On Completion of Installation, Testing & Commissioning	30%

(B) Payment Break-Up Schedule of Treated Effluent Sump

Sl.No.	Description of item (payment after completion of item).	Percentage breakup of Price Bid.
1	On submission and final approval of lay out plan, design & drawing.	01%
2	On completion of Earth work excavation with P.C.C.	05%
3	On Casting of Base Slab	15%
4	On casting of 50% of wall height.	20%
5	On casting of 100% of wall height.	20%
6	On completion of casting of roof	20%
7	On completion of fitting of required pipes,valves and other accessories including completion of all finishing work	09%
8	On completion of Testing & Commissioning	10%

(C) Payment Break-Up Schedule of Plant-cum-SCADA Room /Chemical Storage Room

Sl.No.	Description of item (payment after completion of item).	Percentage breakup of Price Bid.
i.	On submission and approval of design & drawing.	01%
ii.	On completion up to plinth level of Building.	20%
iii.	On completion up to lintel level of building.	20%
iv.	On completion of casting of roof slab.	15%
v.	On completion of all finishing work of civil items including Toilets with required PH fittings all complete including construction of 10 users septic tank.	20%
vi.	On completion of Electrification work of building	14%
viii.	On completion of Testing & Commissioning	10%

(D) Payment Break-Up Schedule of ETP/STP

The Payment Break-Up Schedule for construction of ETP/STP shall be approved later based on the Technology Options proposed in the offer. The bidder has to propose a realistic payment break-up schedule with justifications for approval of the Authority.

SCHEDULE – A

STRUCTURE & ORGANISATION

1. General Information

a) Name of Applicant

b) Head Office Address

e-Mail Address:

Telephone No. Fax :

Mobile Phone No.

c) Regional Office Address (if any)

e-Mail Address:

Telephone No. Fax :

d) Local Office (if any)

e-Mail Address:

Telephone No. Fax :

e) Class of contractor / firm and year of incorporation
(attach copy of certificate of registration)

f) Name and Address of Bankers

g) Main Lines of Business

2. STAFF PROPOSED FOR EXECUTION OF THE WORKS

a) Office

Name(s)	Educational qualification	Designation	Relevant Experience	Remarks

b) Key Engineering Personnel to be deployed at the site

Sl. No.	Name of Engineering Personnel to be deployed	Educational qualification	Experience	Remark
1.				
2.				
3.				
4.				
5.				

Note: **BIO-DATA of each personnel shall be attached related with the proposed site.**
A summary of the work experience of each key staff shall be attached.

3. STAFF PROPOSED FOR OPERATION & MAINENANCE

- **Key Personnel –** Nos and Details
- **Sewer Cleaning Gang -** Nos and Details
- **Construction & Repair Gang -** Nos and Details
- **O&M of Pump sets, STP/ETP, PLC & SCADA System etc. -** Nos and Details

SCHEDULE – B

FINANCIAL STATEMENT

[To be given separately for each constituent Firm]

Financial statement shall be audited for five years by Regd. Chartered Accountant or competent financial organization / authority. The audit certificate should be included with the document.

1) Name of Applicant:

2) Total annual turnover & Annual turnover in **Construction Works**, undertaken for each of the last five financial years.

(Rs. In lakh)

FINANCIAL YEAR	Home		Abroad		**Total**	
	Total Turnover	**Turnover in Const. Works**	**Total Turnover**	**Turnover in Const. Works**	**Total Turnover**	**Turnover in Const. Works**
2025-26						
2024-25						
2023-24						
2022-23						
2021-22						

3. Applicant's specific financial arrangements (mention amount in Indian Rupees)
   a) Own Resources

   b) Bank Credits

   c) Others (specify)

4. Credit Facilities :

   To be supported by certificate for the Bank in **Scheduled 'H'.**

SCHEDULE – C

LIST OF TOOLS, PLANT & EQUIPMENT

Proposed to be deployed by the Applicant for use on the work

Sl. No.	List of plants & equipments	Minimum Requirement	Owned	Leased / Hired	Remarks
			Nos. / qnty	Nos. / qnty	
1	2	3	4	5	6
1.	Concrete Hopper Mixer (tilting hopper type)	2 Nos.			
2.	Plate / Skid Vibrator	2 Nos.			
3.	Needle Vibrator	2 Nos.			
4.	Water Tank	2 Nos.			
5.	Levelling instrument	1 No			
6.	Dewatering Pump set from 5 to 20 HP capacity	1 No.			
7.	Steel shuttering plates (600 x 1200mm) with steel scaffoldings	100 Sqm.			
8.	Transportation trolley	2 Nos.			

SCHEDULE – D
WORK EXPERIENCE

1. Name of the firm:

2. Total number of years of experience in **construction work**:

3. List of the similar works executed during last 5 years. (Rs. in lakh)

Sl. No.	Name of the work/ location Agmt. No. & Dt.	Name of the employer	Value of Contract price	Total Value of work executed	Financial year-wise Computed amount	Stipulated date of commence-ment	Stipulated date of completion	Actual date of completion	Reasons for delay	Remarks
1	2	3	4	5	6	7	8	9	10	11

NB: Certification of the employer not below the rank of General Manager/equivalent is to be furnished in support of the above claim.

4. Approximate value of existing commitment and ongoing works: (Rs. in lakh)

Description of work	Place	Name of employer	Contract No	Contract value	Stipulated period of completion (indicate date of commencement & completion)	Balance value of work to be executed	Remarks
1	2	3	4	5	6	7	8

NB: Certification by the engineer in charge not below the rank General Manager/equivalent in support of the above claim should be furnished. Certificate from Chattered Accountant with verifiable UDIN/Self declaration by the bidder in shape of affidavit shall also be accepted. Non-disclosure sou-moto/hiding of any information if detected later will result in disqualification of the firm.

5. Bid Capacity Calculation (*Refer clause 32.3 of Section 2 (B) of DTCN*).

A = Maximum value of works executed in any one year during the

last five years (updated to the current price level) = Rs. _____ lakhs.

B= Value of current price level of the existing commitments

and ongoing works to be completed during the next years = Rs. _____lakhs

N= Number of years prescribed for completion of the works for which the bids are invited = **1.0**

Assessed Available Bid Capacity = (AxNx2-B) ≥ Amount put to tender in Lakhs

6. Works for which bid already submitted but not finalized.

(Rs. in lakh)

Description of work	Place of work	Name & address of employer	Estimated cost of work	Offer valued by the bidder	Stipulated period of completion	Date on which decision expected.	Remarks
1	2	3	4	5	6	7	8

Note: - a) Certificate from the employers not below the rank of General Manager or equivalent may be attached

SCHEDULE –E

INFORMATION REGARDING CURRENT LITIGATION, DEBARRING / EXPELLING OF TENDER OF ABANDONMENT OF WORK BY TENDER

1.(a) Is the applicant currently involved in any litigation relating to any contract works - **Yes/No**

(b) If yes, give details

2.(a) Has the applicant or any of its constituent partners have been debarred / expelled by any agency in India during the last 5 years - **Yes/No**

(b) If yes, give details

3 (a) Has the applicant or any of its constituent partners failed to perform/absconded/ rescinded on any contract work in India during the last 5 years - **Yes/No**

(b) If yes, give details

Note : If any information in this schedule is found to be incorrect or concealed pre-qualification application will be summarily rejected.

SCHEDULE – F

(Applicable where the proposed works covers Electrical Items of works only)

1. The contractor shall have appropriate class of electrical license for External & Internal Electrical Works.

2. If not, collaboration with contractor having Electrical license of equivalent capacity issued by licensing authority is to be furnished.

SCHEDULE – G

AFFIDAVITS / DECLARATION

1. I/We have read the instructions appended in the DTCN.

2. I/We agree that the decision of the Govt. of Odisha in selection of contractors will be final and binding upon me/us.

3. All the information furnished herewith are correct to the best of my/our knowledge and belief. In case of any information or documents furnished found to be false or incorrect, I / we have no objection if my / our tender is rejected.

4. I/We agree that I/We have no objection if inquiries are made about construction work and its related areas regarding all projects and works listed by us in the accompanying sheets or any other enquiry on information furnished herewith in the accompanying sheets.

5. I/We agreed that I/We have no objection if our past construction works are inspected by any authority of Govt. of Odisha to assess the quality of construction.

Date:

Place:

Signature
Name & Designation
Name of the organisation

SCHEDULE – H

(Refer: Schedule "B" Item – 4)

FORM OF SOLVENCY CERTIFICATE FROM A SCHEDULE BANK

This is to certify that to the best of our knowledge and information M/s./Sri ……..…… having marginally noted address a customer of our bank and are/is respectable and can be treated as good for any engagement upto a limit of Rs. (10% of Amount put to tender)…… (Rupees ……..…….)

Signature

For the Bank

Note: In case of partnership firm, certify names of all partners as recorded with the Bank.

SCHEDULE – I

ANY OTHER INFORMATION, IF ANY

SCHEDULE – J

Format for Seeking Clarification

(to be furnished in both MS Word/Excel & PDF Format)

Name of the Firm with e-mail & Mobile No.:_____

_____

Sl. No.	Reference to DTCN/ Clause/ Page	Existing Description & Subject	Clarification Sought	Remarks
1	2	3	4	5

SCHEDULE – K

FORM OF BANK GUARANTEE
[Additional Performance Security]

To
The General Manager,
WATCO Division, Kataka.

WHEREAS:

(A) _____ [name and address of contractor] (hereinafter called the "**Contractor**") has executed an agreement (hereinafter called the "Agreement") with the **[General Manager, WATCO Division, Kataka,** representing **Managing Director, WATCO, Bhubaneswar**], (hereinafter called the "**Authority**") for the construction of the work **"DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS"** subject to and in accordance with the provisions of the Agreement.

(B) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the {Construction Period & Defects Liability Period} (as defined in the Agreement) in a sum of Rs. _____ Lakh (Rupees _____ Lakh) (the "**Guarantee Amount**").

(C) We, _____ through our branch at _____ (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") by way of Additional Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period & Defects Liability Period} under and in accordance with the Agreement, and agrees and

undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the Authority, under the hand of an officer not below the rank of [General Manager, WATCO Division, Kataka], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/ or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement

and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

8. The Guarantee shall cease to be in force and effect on ****$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.

9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have

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$ Insert date being 18 (Eighteen) Months from the date of issuance of this Guarantee (in accordance with Clause 23.4 of the Section 2(B) & Clause 6.22 of Section 6).

been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until the Authority pursuant to the provisions of the Agreement releases it earlier.

Signed and sealed this _____ day of _____, 20_____ at _____.

SIGNED, SEALED AND DELIVERED
For and on behalf of the Bank by:
(Signature)
(Name)
(Designation)
(Code Number)
(Address)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

(iii) The stamp papers of appropriate value shall be purchased in the name of bank who issues the "Bank Guarantee".

(iv) The bank guarantee shall be from a Nationalised/ Scheduled Indian Bank with **counter guaranteed** by its branch at **Kataka/Bhubaneswar.**

SCHEDULE - L

(*See Clause 6.15 of DTCN*)

PROJECT COMPLETION SCHEDULE

[In order to closely monitor the execution of the project and to ensure quality, cost and time of the project are not compromised in any manner, the contractor shall provide bar chart & PERT Chart in such a realistic manner so that there will be balance between financial & physical progress with reference to cost & completion time.]

1 Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this **Schedule-L** for each of the Project Milestones and the Scheduled Completion Date. Soon after the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

2 Project Milestone-I

2.1 Project Milestone-I shall occur on the date falling on the $^{1}/_{4}$ of the Whole Time allowed from the Commencement Date (the "**Project Milestone-I**").

2.2 Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Water Supply Project and submitted to the Authority duly and validly prepared a Work done Statements for a value of work not less than **20%** (Twenty percent) of the Contract Price.

3 Project Milestone-II

3.1 Project Milestone-II shall occur on the date falling on the $^{1}/_{2}$ of the Whole Time allowed from the Commencement Date (the "**Project Milestone-II**").

3.2 Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Water Supply Project and submitted to the Authority duly and validly prepared a cumulative Work done Statements for a value of work not less than **45%** (Forty-five percent) of the Contract Price.

4 Project Milestone-III

4.1 Project Milestone-III shall occur on the date falling on the $^{3}/_{4}$ of the Whole Time allowed from the Commencement Date (the "**Project Milestone-III**").

4.2 Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Water Supply Project and submitted to the Authority duly and validly prepared a cumulative Work done Statements for a value of work not less than **75%** (Seventy-five percent) of the Contract Price.

5 Scheduled Completion Date

5.1 The Scheduled Completion Date shall occur on the Whole Time allowed **12 (Twelve) Calendar Months** from the Commencement Date.

5.2 On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

If the contractor fails to maintain the required progress in terms of each Project Milestone or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount as give in Clause No. 6.15 of

the agreement.

SCHEDULE - M

(*See Clause 23 & 23.1 of Section-2(B) of DTCN*)

Bank Guarantee for BID Security

B.G. No. Dated:

1. In consideration of **MD, WATCO, Odisha, Bhubaneswar** having its office at **Bhubaneswar**, (hereinafter referred to as the "Authority", which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the BID of …….…… and having its registered office at …… (hereinafter referred to as the "Bidder" which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the Project **"DESIGN, DRAWING, CONSTRUCTION, TESTING & COMMISSIONING OF SEWERAGE SYSTEM, 225 KLD SEWAGE TREATMENT PLANT (STP) & 75 KLD EFFLUENT TREATMENT PLANT (ETP) FOR SISHU BHAWAN HOSPITAL IN KATAKA INCLUDING OPERATION & MAINTENANCE FOR A PERIOD OF FIVE YEARS"** on [Percentage] basis (hereinafter referred to as "the Project") pursuant to the **DTCN dated 16.102026** issued in respect of the Project and other related documents including without limitation the draft contract Agreement (hereinafter collectively referred to as "Bidding Documents"), we (Name of the Bank) having our registered office at …… and one of its branches at …….. (hereinafter referred to as the "Bank"), at the request of the Bidder, do hereby in terms of Clause 23 read with Clause 23.1Section-2(B) of the DTCN, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the Bidding Documents (including the DTCN) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to the Authority an amount of Rs. *** ** (Rupees *** ** only) (hereinafter referred to as the "Guarantee") as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfil or comply with all or any of the terms and conditions contained in the said Bidding Documents.
2. Any such written demand made by the Authority stating that the Bidder is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.
3. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of the Authority is disputed by the Bidder or not, merely on the first demand from the Authority stating that the amount claimed is due to the Authority by reason of failure of the Bidder to fulfil and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its BID open during the BID validity period as set forth in the said Bidding Documents for any reason whatsoever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. *** ** (Rupees *** ** only).
4. This Guarantee shall be irrevocable and remain in full force for a period of 180(one hundred and eighty) days from the BID Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between the Authority and the Bidder, and agreed to

by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.

5. We, the Bank, further agree that the Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, *inter alia*, the failure of the Bidder to keep its BID open during the BID validity period set forth in the said Bidding Documents, and the decision of the Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Authority and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.
6. The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.
7. In order to give full effect to this Guarantee, the Authority shall be entitled to treat the Bank as the principal debtor. The Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the BIDs or the BID validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the Authority, and the Bank shall not be released from its liability under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Bidder or by any change in the constitution of the Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
9. We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch which shall be deemed to have been duly authorised to receive the said notice of claim.
10. It shall not be necessary for the Authority to proceed against the said Bidder before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which the Authority may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealised.
11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of the Authority in writing.
12. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorised and has full power to execute this Guarantee for and on behalf of the Bank.
13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. *** crore (Rupees *** ** crore only). The Bank shall be liable to pay the said amount or any part thereof only if the Authority serves a written claim on the Bank in accordance with

paragraph 9 hereof, on or before [*** (indicate date falling 180 days after the BID Due Date)].
Signed and Delivered by ……. Bank
By the hand of Mr./Ms …….., its …….. and authorised official.

(Signature of the Authorised Signatory)
(Official-Seal)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

(iii) The stamp papers of appropriate value shall be purchased in the name of bank who issues the "Bank Guarantee".

(iv) **The bank guarantee shall be from a Nationalised / Scheduled Indian Bank with counter guaranteed by its branch at Bhubaneswar.**

Bank Details

Name of Bank: State Bank of India, HOD Branch
A/c No. : 35406572672
IFSC: SBIN0010249
Payee Name: Managing Director, WATCO, Bhubaneswar (Current Account)
MICR: 751002028

Appendix - I

Executive Instruction regarding calling for and acceptance of tenders in e-Procurement in Govt. of Odisha.

Government of Odisha
Works Department

***

Office Memorandum

File No.07556900042013 (Pt-II) – 7885/W Dated 23.07.2013

Sub: Codal Provision regarding e-Procurement

After introduction of e-procurement in Government of Odisha, necessary guidelines / procedures has been issued in Works Department Office Memorandum No.1027 dt.24.01.2009 which consists of the procedural requirement for e-procurement of tenders. After careful consideration Government have been pleased to make following modifications to codal provisions by way of addition as Appendix – IX(A) of OPWD Code Vol.II) as follows:

(Appendix-IX (A) of OPWD Code, Vol-II)

Executive instructions regarding calling for and acceptance of tenders in e-Procurement.

1. This office memorandum consists of the procedural requirement of e-procurement and shall be made part of the Detailed Tender Call Notice or Instruction to Bidder for all "works" tenders hoisted in the portal.
2. The e-procurement portal of Government of Odisha is "https://tendersodisha.gov.in".
3. Use of valid Digital Signature Certificate of appropriate class (Class II or class III) issued from registered certifying authorities (CA) as stipulated by Controller of Certifying Authorities (CCA), Government of India such as n-Code, Sify, TCS, MTNL, e-Mudhra is mandatory for all users.
4. The DSC issued to the Department users is valid for the period of two years only. All the Department users are responsible to revalidate their DSC prior to expiry.
5. For all purpose, the server time displayed in the e-Procurement portal shall be the time to be followed by all the users.
6. Government after careful consideration have decided to hoist all tenders costing 10 lakhs or above in the e-procurement portal. This will be applicable across all Engineering Departments such as Works Department, Department of Water Resources, Rural Development and Housing & Urban Development Department. Government of Odisha also welcomes hoisting of tenders by any other departments, authority, corporations, local bodies etc. of the State with prior approval from Works Department. Works

Department is the Nodal Department for the implementation of e-Procurement in the State.

7. The e-procurement shall be operated compliant to relevant provisions of OGFR/ OPWD code/ Accounts code/ Government statues including any amendments brought from time to time to suit to the requirement of the best national practice.

8. Registration in the e-procurement portal is without levy of any charges but Government reserves the right to levy any charges for such value added services in future.

9. Contractor not registered with Government of Odisha, can participate in the e-Procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of the work as per prevalent registration norms of the State.

10. For the role management "Department" is the Administrative Department, Organisation or wing is the Chief Engineer or highest tender accepting authority or equivalent officer, Division is the General Manager or equivalent Officer and Subdivision is the Assistant Engineer or equivalent officer.

11. The e-Procurement software assigns roles for operation of the module for specific function. The terminologies used in the portal and their respective functions in the software are as follows.

    11.1 Application Administrator (NIC & State Procurement Cell)

    i. Master Management
    ii. Nodal Officer Creation
    iii. Report Generation
    iv. Transfer of Officer's login ID.
    v. Blocking & unblocking of officer's and bidder's login ID.

    11.2 Nodal Officer (At organization level not below the Superintending Engineer or equivalent rank)

    i. Creation of Users
    ii. Role Assignment
    iii. Report Generation
    iv. Transfer of Officer's login ID.
    v. Blocking & unblocking of officer's Login ID.

    11.3 Procurement Officer Publisher (Officer having tender inviting power at any level)

    i. Publishing of Tender
    ii. Publishing of Corrigendum / addendum / cancellation of Tender
    iii. Bid Clarification
    iv. Uploading of Pre-Bid minutes.
    v. Report generation.

    11.4 Procurement Officer Administrator (Generally sub-ordinate officer to Officer Inviting Tender)

    i. Creation of Tender

ii. Creation of Corrigendum / addendum / cancellation of Tender
iii. Report generation.

11.5 Procurement Officer Opener (Generally sub-ordinate officer to Officer Inviting Tender)

i. Opening of Bid

11.6 Procurement Officer Evaluator (Generally Sub-Ordinate Officer to Officer Inviting Tender)

i. Evaluating Bid

11.7 Procurement Officer-Auditor (Procurement Officer Publisher and/or Accounts Officer / Finance Officer)

i. To take up auditing

12. NOTICE INVITING BID (NIB) or INVITATION FOR BID (IFB):

12.1 The Notice Inviting Bids (NIB) and Bid documents etc., shall be in the Standard formats as applicable to conventional Bids and will be finalized / approved by the officers competent as in the case of conventional Bids.

12.2 The officers competent to publish NIB in case of conventional Bids will host the NIB in portal. Simultaneously, a notification should also be published in the newspapers, as per existing rules preferably, in the following format, to effect economy:-

Government of Odisha "e" procurement Notice
Bid Identification No.----------
1. Name of the work: ……. 2. Estimated cost: Rs. ……. 3. Period of completion ---------- 4. Date & Time of availability of bid document in the portal _____ 5. Last Date / Time for receipt of bids in the portal _____ 6. Name and address of the O.I.T.:……..
Further details can be seen from the e-procurement portal "https://tendersodisha.gov.in"

12.3 The tender documents published by the Tender Inviting Officer (Procurement Officer Publisher) in the website https://tendersodisha.gov.in will appear in the "Latest Active Tender". The Bidders/ Guest Users can download the Bid documents only after the due date & time of sale. The publication of the tender will be for specific period of time till the last date of submission of bids as mentioned in the 'Notice inviting Bid' after which the same will be removed from the list of "Latest Active tenders".

13. ISSUE OF ADDENDA/ CORRIGENDA/ CANCELLATION NOTICE:

13.1 The Procurement Officer Publisher (Officer Inviting Tender) shall publish any addendum/ corrigendum/ cancellation of tender in the website

https://tendersodisha.gov.in, notice board and through paper publication and such notice shall form part of the bidding documents.

13.2 The system generates a mail to those bidders who have already uploaded their tenders and those bidders if they wish can modify their tenders. The bidders are required to watch the website till last date and time of bid submission for any addendum/ corrigendum/ cancellation thereof. Tender Inviting Authority is not responsible for communication failure of system generated mail.

14. CREATION AND PUBLISHING OF BID:

14.1 All the volumes/documents shall be uploaded in the portal by the tender creating officer (Procurement Officer Administrator) and published by the Officer Inviting Tender (Procurement Officer Publisher) using their DSCs in appropriate format so that the document is not tampered with

14.2 The tender document comprise the notice inviting tender, bid document/ SBD, drawings in .pdf format and the schedule of quantities / BoQ in .xls format to be uploaded by the Officer Inviting Tender.

14.3 Procurement Officer Administrator creates tender by filling up the following forms:

i. BASIC DETAILS

ii. COVER CONTENT: The Procurement officer Administrator should briefly describe the name and type of documents to be uploaded by the bidder in the following format:

(a) For Single Cover/Packet:

Sl No	Cover Type	Document Description	Type
1	Fee/ Prequal/ Technical/ Finance	Tender Cost, EMD, VAT, PAN, Contractor RC	.pdf
		Affidavits, undertakings and any other document as per SBD/DTCN.	.pdf
		BoQ	.xls

(b) For Two Cover/Packet:

Sl No	Cover Type	Document Description	Type
1	Fee/ Prequal/ Technical	Tender Cost, EMD, VAT, PAN, Contractor RC	.pdf
		Affidavits, undertakings and any other document as per SBD/DTCN.	.pdf
2	Finance	BoQ	.xls
		Special condition if any specifically mentioned by Officer Inviting Tender	.pdf

iii. TENDER DOCUMENT: The Procurement Officer Administrator should upload the NIT in .pdf format.

iv. WORK ITEM DETAILS

v. FEE DEATILS: The Procurement Officer Administrator should mention the cost of tender paper and EMD amount as laid down in DTCN/SBD.

vi. CRITICAL DATES: The Procurement Officer Administrator should mention the critical dates of tender such as publishing date, document download start date & end date, seek clarification start date & end date (optional), bid submission start date & closing date, bid opening date as per DTCN/SBD.

vii. BID OPENER SELECTION: The Procurement Officer creator can select two / three / four bid openers for a particular bid. If required the bid openers can also be selected within an organization from other procurement units (Circles /Divisions).

viii. WORK ITEM DOCUMENTS: The Procurement Officer Administrator should upload the digitally signed tender document (SBD/DTCN) or any other addition document/drawings in .pdf format and Bill of Quantities in .xls format.

ix. PUBLISHING OF TENDER: The Procurement Officer Publisher shall publish the tender using his/her DSC after detail scrutiny of the fields created and documents uploaded by the Procurement Officer Administrator. Procurement Officer Publisher can publish tenders for multiple procurement units using multiple DSCs procured for each post separately. After being relieved from the additional charges he has to surrender the additional DSCs to the Nodal Officer of the concerned organisation.

15. **PARTICIPATION IN BID:**

15.1 PORTAL REGISTRATION: The Contractor/Bidder intending to participate in the bid is required to register in the portal using his/her active personal/official e-mail ID as his/her Login ID and attach his/her valid Digital signature certificate (DSC) to his/her unique Login ID. He/She has to submit the relevant information as asked for about the firm/contractor. The portal registration of the bidder/firm is to be authenticated by the State Procurement Cell after verification of original valid certificates/documents such as (i) PAN and (ii) Registration Certificate (RC) / VAT Clearance Certificate (for procurement of goods) of the concerned bidder. The time period of validity in the portal is at par with validity of RC/ VAT Clearance. Any change of information by the bidder is to be re-authenticated by the State Procurement Cell. After successful authentication bidder can participate in the online bidding process.

15.1.1 Bidders participating through Joint Venture shall declare the authorised signatory through Memorandum of Understanding duly registered and enrol in the portal in the name and style of the Joint venture Company. It is mandatory that the DSC issued in the name of the authorised signatory is used in the portal.

15.1.2 Any third party/company/person under a service contract for operation of e-Procurement system in the State or his/their subsidiaries or their parent companies shall be ineligible to participate in the procurement process that are undertaken through the e-Procurement system irrespective of who operates the system.

15.2 LOGGING TO THE PORTAL: The Contractor/Bidder is required to type his/her *Login ID* and password. *The* system *will again ask to* select the DSC and confirm it with

the password of DSC as a second stage authentication. For each login, a user's DSC will be validated against its date of validity and also against the Certificate Revocation List (CRL) of respective CAs stored in system database. The system checks the unique Login ID, password and DSC combination and authenticates the login process for use of portal.

15.3 DOWNLOADING OF BID: The bidder can download the tender of his choice and save it in his system and undertake the necessary preparatory work off-line and upload the completed tender at his convenience before the closing date and time of submission.

15.4 CLARIFICATION ON BID: The bidder may ask question related to tender online in the e-procurement portal using his/her DSC; provided the questions are raised within the period of seeking clarification as mentioned in tender call notice/Bid. The Officer Inviting the Bid / Procurement Officer-Publisher will clarify queries related to the tender.

15.5 PREPARATION OF BID

15.5.1 The bids may consist of general arrangements drawings or typical or any other drawings relevant to the work for which bid has been invited. Bidder may download these drawings and takeout print for detail study and preparation of his bid. Any other drawings and documents pertaining to the works available with the Officer Inviting The bid will be open for inspection by the bidders.

15.5.2 The Bidder shall go through the Bid carefully and list the documents those are asked for submission. He shall prepare all documents including cost of Bid Document, Bid Security, Declaration form, price bid etc. and store in the system.

15.6 PAYMENT OF EMD/BID SECURITY AND COST OF BID DOCUMENTS:

15.6.1 The Bidder shall furnish, as part of his Bid, a Bid security for the amount mentioned under NIT/Contract Data. The bidder shall scan all the written/printed pages of the bid security and up load the same in portable document format (PDF) to the system in designated place of the technical BID. Furnishing scanned copy of such documents is mandatory otherwise his/her bid shall be declared as non-responsive and liable for rejection.

15.6.2 The EMD or Bid Security payable along with the bid is 1% of the estimated contract value (ECV) or as mentioned in the bid document. The validity period of the EMD or Bid Security shall be as mentioned in the bid document. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in the bid document shall be rejected as non-responsive. The bid security shall be retained till such time the successful bidder furnishes Initial Security Deposit (ISD) or Performance Security acceptable to the Officer Inviting the Bid. Failure of the successful Bidder to comply with the requirements shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security. The Bid security in the form of FD / BG shall be from a Nationalized Bank valid for a period of 45 days beyond the validity of the bid. Bid security in other form is acceptable if the bid

documents provides for it.

15.6.3 The Fixed Deposit / Bank Guarantee or any other form as mentioned in detailed tender call notice in respect of Earnest Money Deposit / Bid Security and the Bank Draft in respect of cost of Bid are to be scanned and up loaded in portable document format (PDF) along with the bid.

15.6.4 The tender accepting authority will verify the originals of all the scanned documents of the successful lowest bidder only within 5 days of opening of the tender. In the eventuality of failure on the part of the lowest successful bidder to produce the original documents, he will be debarred in future from participating in tender for 3 years and will be black listed by the competent authority. In such a situation, successful L-2 bidder will be required to produce his original documents for consideration of his tender at the negotiated rate equal to L1 bidder.

15.6.5 Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption

15.6.6 Government of Odisha has been actively considering integrating e-payment gateway in to the portal for payment of Cost of Bid and Bid Security/ Earnest Money Deposit. The process of using e-payment gateway shall be issued separately after it is established.

16. SUBMISSION OF BID:

16.1 The bidder shall carefully go through the tender and prepare the required documents. The bid shall have a Technical Bid & a Financial Bid. The Technical bid generally consist of cost of Bid documents, EMD/ Bid Security, VAT, PAN / TIN, Registration Certificate, Affidavits, Profit Loss statement, Joint venture agreement, List of similar nature of works, work in hand, list of machineries, and any other information required by OIT. The Financial Bid shall consist of the Bill of Quantities (BOQ) and any other price related information/undertaking including rebates.

16.2 Bidders are to submit only the original BoQ (in .xls format) uploaded by Procurement Officer Publisher (Officer Inviting Tender) after entering the relevant fields without any alteration/ deletion / modification. Multiple BoQ submission by bidder shall lead to cancellation of bid. In case of item rate tender, bidders shall fill in their rates other than zero value in the specified cells without keeping it blank. In the percentage rate tender the bidder quoting zero percentage is valid and will be taken at par with the estimated rate of the work put to tender.

16.3 The bidder shall upload the scanned copy/copies of document in support of eligibility criteria and qualification information in prescribed format in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid.

16.4 The bidder shall write his name in the space provided in the specified location in the Protected Bill of Quantities (BoQ) published by the Officer Inviting Tender. The bidder shall type rates in figure only in the rate column of respective item(s) without any blank cell in the rate column in case of item rate tender and type

percentage excess or less up to two decimal place only in case of percentage rate tender.

16.5 The bidder shall log on to the portal with his/her DSC and move to the desired tender for up loading the documents in appropriate place one by one simultaneously checking the documents.

16.5.1 Bids cannot be submitted after due date and time. The bids once submitted can not be viewed, retrieved or corrected. The Bidder should ensure correctness of the bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid. The bids cannot be opened even by the OIT or the Procurement Officer Publisher/ opener before the due date and time of opening.

16.5.2 Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.

16.5.3 The Bidder should ensure clarity/legibility of the document uploaded by him to the portal.

16.5.4 The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender.

16.5.5 The bidder should check the system generated confirmation statement on the status of the submission.

16.5.6 The Bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.

16.5.7 The Tender Inviting Officer is not responsible for any failure, malfunction or breakdown of the electronic system used during the e-procurement process.

16.5.8 The Bidder is required to upload documents related to his eligibility criteria and qualification information and Bill of Quantity duly filled in. It is not necessary for the part of the Bidder to up-load the drawings and the other Bid documents (after signing) while uploading his bid. It is assumed that the bidder has referred all the drawings and documents uploaded by the Officer Inviting the Bid.

16.5.9 The Bidder will not be able to submit his bid after expiry of the date and time of submission of bid (server time). The date and time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer Inviting the Bid.

16.6 **SIGNING OF BID:** The 'online bidder' shall digitally sign on all statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity as per IT ACT 2000. If any of the information furnished by the bidder is found to be false / fabricated / bogus, his EMD/Bid Security shall stand forfeited & his registration in the portal shall be blocked and the bidder is liable to be blacklisted.

17. **SECURITY OF BID SUBMISSION:**

17.1 All bid uploaded by the Bidder to the portal will be encrypted.

17.2 The encrypted Bid can only be decrypted / opened by the authorised openers on or after the due date and time.

18. **RESUBMISSION AND WITHDRAWAL OF BIDS:**

18.1 Resubmission of bid by the bidders for any number of times before the final date and time of submission is allowed.

18.2 Resubmission of bid shall require uploading of all documents including price bid afresh.

18.3 If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.

18.4 The bidder should avoid submission of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc.

18.5 The Bidder can withdraw his bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the Procurement Officer Publisher (Officer Inviting Tender) citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.

19. **OPENING OF THE BID:**

19.1 Bid opening date and time is specified during tender creation or can be extended through corrigendum. Bids cannot be opened before the specified date & time.

19.2 All bid openers have to log-on to the portal to decrypt the bid submitted by the bidders.

19.3 The bidders & guest users can view the summary of opening of bids from any system. Contractors are not required to be present during the bid opening at the opening location if they so desire.

19.4 In the event of the specified date of bid opening being declared a holiday for the Officer Inviting the Bid, the bids will be opened at the appointed time on the next working day.

19.5 Combined bid security for more than one work is not acceptable.

19.6 The electronically submitted bids may be permitted to be opened by the predefined Bid opening officer from their new location if they are transferred after the issue of Notice Inviting Bid and before bid opening. Further, action on bid documents shall be taken by the new incumbent of the post.

19.7 In case of non-responsive tender the officer inviting tender should complete the e-Procurement process by uploading the official letter for cancelled / re-tender.

20. **EVALUATION OF BIDS :**

20.1 All the opened bids shall be downloaded and printed for taking up evaluation. The officer authorized to open the tender shall sign and number on each page of the documents downloaded and furnish a certificate that "the documents as available in the portal containing _____ nos. of pages".

20.2 The bidder may be asked in writing/ online (in their registered e-mail ids) to clarify on the uploaded documents provided in the Technical Bid, if necessary, with respect to any doubts or illegible documents. The Officer Inviting Tender may ask for any other document of historical nature during Technical Evaluation of the

tender. Provided in all such cases, furnishing of any document in no way alters the Bidder's price bid. Non submission of legible documents may render the bid non-responsive. The authority inviting bid may reserve the right to accept any additional document.

20.3 The bidders will respond in not more than 7 days of issue of the clarification letter, failing which the bid of the bidder will be evaluated on its own merit.

20.4 The Technical evaluation of all the bids shall be carried out as per information furnished by Bidders.

20.5 The Procurement Officer-Evaluators; will evaluate bid and finalize list of responsive bidders.

20.6 The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.

20.6.1 The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorised representative who wish to be present.

20.6.2 At the time of opening of "Financial Bid", bidders whose technical bids were found responsive will be opened.

20.6.3 The responsive bidders' name, bid prices, item wise rates, total amount of each item in case of item rate tender and percentage above or less in case of percentage rate tenders will be announced.

20.6.4 Procurement Officer-Openers shall sign on each page of the downloaded BoQ and the Comparative Statement and furnish a certificate to that respect.

20.6.5 Bidder can witness the principal activities and view the documents/summary reports for that particular work by logging on to the portal with his DSC from anywhere.

20.6.6 System provides an option to Procurement Officer Publisher for reconsidering the rejected bid with the approval of concern Chief Engineer / Head of Department.

21. NEGOTIATION OF BIDS:

21.1 For examination, evaluation, and comparison of bids, the officer inviting the bid may, at his discretion, ask the lowest bidder for clarification of his rates including reduction of rate on negotiation and breakdown of unit rates.

22. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:

22.1 The Employer/Engineer-in-Charge shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. This Letter of Acceptance will state the sum that the Engineer-in-Charge will pay the contractor in consideration of execution & completion of the Works by the contractor as prescribed by the contract & the amount of Performance Security and Additional Performance Security required to be furnished. The issue of the letter of Acceptance shall be treated as closure of the Bid process and commencement of the contract.

22.2 The Contractor after furnishing the required acceptable Performance Security & Additional Performance Security, "Letter to Proceed" or "Work Order" shall be issued by the Engineer-in-Charge with copy thereof to the Procurement Officer – Publisher. The Procurement Officer-Publisher shall up load the summary and declare the process as complete.

22.3 If the L-1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the contractor. Besides the consortium / JV / firm where such an agency / firm already happens to be or is going to be a partner/member/proprietor, he/ they shall neither be allowed for participation in bidding for three years nor his/ their application will be considered for registration and action will be initiated to blacklist him / them. In that case, the L-2 bidder, if fulfils other required criteria, would be called for drawing agreement for execution of work subject to condition that the L-2 bidder negotiates at par with the rate quoted by the L-1 bidder, otherwise the tender will be cancelled.

23. BLOCKING OF PORTAL REGISTRATION:

23.1 If the Registration Certificate of the Contractor is cancelled /suspended by the registering authority/ blacklisted by the competent authority his portal registration shall be blocked automatically on receipt of information to that effect.

23.2 The portal registration blocked in the ground mentioned in the above Para-23.1 shall be unblocked automatically in receipt of revocation order of cancellation / suspension/ blacklisting from the concerned authority.

23.3 The Officer Inviting Tender shall make due inquiry and issue show cause notice to the concerned contractor who in turn shall furnish his reply, if any, within a fortnight from the date of issue of show cause notice. Thereafter the Officer Inviting Tender is required to issue an intimation to the defaulting bidder about his unsatisfactory reply and recommend to the Chief Manager (Tech.) for blocking of portal registration within 10 days of intimation to the defaulting bidder regarding his unsatisfactory reply with intimation to the Registering Authority and concerned Chief Engineer/ Heads of Office if any of the following provisions are violated.

23.3.1 Fails to furnish original Technical / Financial (Tender Paper Cost, EMD/Bid Security) instruments before the designated officer within the stipulated date and time.

23.3.2 Backs out from the bid on any day after the last date of receipt of tender till expiry of the bid validity period.

23.3.3 Fails to execute the agreement within the stipulated date.

23.3.4 If any of the information furnished by the bidder is found to be false / fabricated / bogus.

Accordingly the Officer Inviting Tender shall recommend to the Chief Manager (Tech.), State Procurement Cell, Odisha for blocking of portal registration of bidder and simultaneously action shall also be initiated by OFFICER INVITING TENDER for blacklisting as per Appendix- XXXIV of OPWD Code, Volume-II.

24. GUIDELINES FOR UNBLOCKING OF PORTAL REGISTRATION:

24.1 UNBLOCKING OF PORTAL REGISTRATION:

Unblocking of portal registration of a contractor shall be done by a Committee consisting of the following members.

EIC (Civil)-cum-CPO,	-	Chairman
Engineer-in-Chief (WR)	-	Member
Concerned Chief Engineer	-	Member
Sr. Manager (Finance), SPC	-	Member
Officer Inviting Tender	-	Member
Chief Manager (Technical), SPC	-	Convener

24.2 The Chief Manager (Tech), State Procurement Cell will be the convener and he will maintain all records for this purpose. The Committee shall meet not less than once in a month if required & shall consider the recommendation of the officer inviting tender for unblocking of portal registration. The quorum of the meeting will be four.

24.3 The minimum period of blocking of Portal Registration shall in no case be less than 90 days. After blocking of Portal Registration, the Contractor whose Portal Registration has been blocked may file application to the concerned officer inviting tender showing sufficient ground for unblocking of his portal registration along with a Treasury Challan showing deposit of Rs. 10,000/- (Rupees ten thousand) only (non-refundable) under the head of accounts '0059 - Public Works' as processing fees. The officer inviting tender shall forward the application filed by the contractor to the Chief Manager (Tech), State Procurement Cell.

24.4 On receipt of recommendation from the concerned Chief Engineer along with the copy of challan as mentioned above, the Chief Manager (Tech) being the member Convener of the Committee shall place the case before the Committee for examination and taking a decision in this regard. After examination the Committee may recommend for unblocking of the portal registration of said contractor if the Committee is satisfied that the fault committed by the contractor is either unintentional or done for the first time.

24.5 After scrutiny by the State Procurement Cell if it is found that the portal registration of a contractor has been blocked for the 2nd time the Chief Manager (Tech), SPC may not consider his case to be placed before the Committee and may advice the concerned officer inviting tender to issue show cause notice to the contractor asking him to explain as to why his portal registration shall not remain blocked. On receipt of show cause reply from the contractor the officer inviting tender shall examine the same & if considered proper he may report to the Chief Manager (Tech), SPC along with his views furnishing the copy of the show cause reply for placement of the same before the Committee for taking a decision in respect of blocking/ unblocking. If the Committee found that the contractor is in habit of committing such fault again and again intentionally the committee may advice the concerned officer inviting tender to initiate proceeding for blacklisting as per the existing rule.

1. These amendments shall take effect from the date of issue of the order.
2. This amendment is an addition to the existing provision and will be placed below Appendix-IX to OPWD Col, Vol-II.
3. Accordingly Office Memorandum No.1027 dt.24.01.2009 stands modified.
4. This has been concurred in by the Finance Department vide their UOR No.3-WF-1 dt.04.01.2013.

Sd/19.07.2013
E.I.C-cum-Secretary to Govt.

Appendix – II

Online Receipt of Tender Paper Cost & Earnest Money Deposit through e-Procurement Portal as per Works Department Letter No.17276/W Dt.06.12.2017

Government of Odisha
Works Department

***

Office Memorandum

File No.07556900012016–17254/W Dt.05.12.2017

Sub: Electronic receipt, accounting and reporting of Cost of Tender Paper and Earnest Money Deposit on submission of bids.

1. The State Government have formulated rules and procedures for Electronic receipt, accounting and reporting of the receipt of Cost of Tender Paper and Earnest Money Deposit on submission of bids through the e-procurement portal of Government of Odisha i.e. "https://tendersodisha.gov.in".

2. Electronic receipt of cost of tender paper has been successfully tested through SBI payment gateway. Now it has been decided to introduce electronic receipt of **Cost of Tender Paper and Earnest Money Deposit on submission of bids** through payment gateway of designated banks such as **SBI/ICICI Bank/HDFC Bank** for all Government Departments, State PSUs. Statutory Corporations, Autonomous Bodies and Local Bodies etc. in phases (ANNEXURE-I). The process outline as well as accounting and reporting structure are indicated below:

a) It will be carried out through a single banking transaction by the bidder for multiple payments like **Cost of Tender Paper and Earnest Money Deposit on submission of bids.**

b) Various payment modes like **Internet banking/ NEFT/RTGS** of Designated Banks and their Aggregator Banks as well can be accessed by the intending bidders.

c) Reporting and accounting of the **e-receipts** will be made from a single source.

d) Credit of receipts into the Government accounts and to the designated Bank account of the participating entities indicated in Para 2 above would be faster.

3. Only those bidders who successfully remit their **Cost of Tender Paper and Earnest Money Deposit on submission of bids would be eligible to** participate in the tender/bid process. The bidders with pending or failure payment status shall not be able to submit their bid. Tender inviting authority, State Procurement Cell, NIC, the designated Banks shall not be held responsible for such pendency or failure.

4. Banking arrangement:

a) Designated Banks **(SBI/ICICI Bank/HDFC Bank)** payment gateway are being integrated with e-Procurement portal of Government of Odisha (https://tendersodisha.gov.in)

b) The Designated Banks participating in **Electronic receipt, accounting and reporting of Cost of Tender Paper and Earnest Money Deposit on submission of bids** will nominate a **Focal Point Branch** called e-FPB, who is authorized to collect and collate all e-Receipts. Each such branch will act as the Receiving branch and Focal Point Branch notwithstanding the fact that the bidder might have debited his account in any of the bank's branches while making payment.

5. Procedures of bid submission using electronic payment of tender paper cost and EMD by bidder:

a) Log on to e-Procurement Portal: The bidders have to log onto **the** Odisha e-Procurement portal (https://tendersodisha.gov.in) using his/her digital signature certificate and then search and then select the required active tender from the "Search Active Tender" option. Now, submit button can be clicked against the selected tender so that it comes to the "My Tenders" section.

b) **Uploading of Prequalification/Technical/Financial bid:** The bidders have to upload the required Prequalification /Technical/Financial bid, as mentioned in the bidding document and in line with Works Department office memorandum no.7885, dt.23.07.2013.

c) **Electronic payment of tender paper cost and EMD:** Then the bidders have to select and submit the bank name as available in the payment options

i. A bidder shall make electronic payment using his/her **internet banking** enabled account with designated Banks or their aggregator banks.

ii. A bidder having account in other Banks can make payment using **NEFT/RTGS** facility of designated Banks.

- Online NEFT/RTGS payment using internet banking of the bank in which the bidder holds his account, by adding the account number as mentioned in the challan as an interbank beneficiary.

d) **Bid submission:** Only after receipt of intimation at the e-Procurement portal regarding successful transaction by bidder the system will activate the 'Freeze Bid Submission' button to conclude the bid submission process.

e) **System generated acknowledgement receipt for successful bid submission:** System will generate an acknowledgement receipt for successful bid submission. The bidder should make a note of **'Bid ID**' generated in the acknowledgement receipt for tracking their bid status.

6. Settlement of Cost of Tender Paper;

a) Cost of Tender Paper: In respect of Government receipts on account of **Cost of Tender Paper,** the e-Procurement portal shall generate a MIS for the State

Procurement Cell (SPC). The MIS will contain an abstract of the cost of tender paper collected with reference to **Bid Identification Number.** The State Procurement Cell shall generate Bank-wise-head-wise challans separately for **Cost of Tender Paper** and instruct the designated Banks to remit the money to the State Government account under different heads. In respect of the cost of tender paper received through the e-procurement portal, the remittance to the Cyber Treasury account will be made to the Head of Account 0075-Misc, General Services-800-Other Receipts -0097-Misc. Receipts-02237-Cost of Tender Paper.

b) For the time being, the State Procurement Cell (SPC) will use over the counter payment facility of the Odisha Treasury portal. Thereafter, remittance through NEFT & RTGS will be facilitated through the Odisha Treasury portal.

c) Similarly, in case of State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc., **Cost of Tender Paper,** the e-Procurement portal shall generate a MIS for the State Procurement Cell (SPC). The MIS will contain an abstract of the cost of tender paper collected with reference to **Bid Identification Number.** The State Procurement Cell shall generate Bank-wise list of challans and instruct the designated Banks to remit the money through the Odisha Treasury portal. The cost of tender papers will be credited to the registered Bank account of the concerned State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc.

d) Bank will refund (in case the Tender Inviting Authority (TIA) issues such instructions) the tender fee, EMD to the bidder, in case the tender is cancelled before opening of Bid as per direction received from TIA through e-procurement system.

e) Back-end Transaction Matrix of Electronic receipt of Cost of Tender Paper and Earnest Money Deposit on submission of bids is enclosed in the Annexure.

7. Settlement of Earnest Money Deposit on submission of bids:

a) The Bank will remit the **Earnest Money Deposit on submission/ cancellation of bids** to respective bidders accounts as per direction received from TIA through e-procurement system.

8. Forfeiture of EMD :

Forfeiture of **Earnest Money Deposit on submission of bid** of defaulting bidder is occasioned for various reasons.

a) In case the **Earnest Money Deposit on submission of bid** is forfeited, the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority.

b) The Tender inviting authorities of the Government Departments will deposit the forfeited **Earnest Money Deposit on submission of bid,** in the State Government Treasury under the appropriate head (8782-Cash Remittances and Adjustments between the officers rendering accounts to the same Accounts Officer-102-P.W.Remittances-1683-Remittances-91028-Remittances into Treasury) after taking the amount as a revenue receipt in their Cash Book under

the head 0075-Misc. General Services-00-101 -Unclaimed Deposits-0097-Misc, Receipts-02080-Misc. Deposits and submit the detail account to DAG (Puri) as a deposit of the Division.

c) By clicking submit button, system will initiate the forfeiture of EMD. System will not allow the evaluator to edit the initiation after clicking the submit button. Forfeiture option can be carried out in phased manner like one bidder at a time.

9. Role of the Banks:

a) Make necessary provision / customizations at their end to enable the provision for online payments / refunds as per this document.

b) Provide necessary real-time message to bidders regarding successful or unsuccessful transactions during online payment processes and redirect them to e-Procurement website with necessary transaction reference details enabling them to submit their bids.

c) The bank shall ensure transfer of funds from the pooling account to the Government Head/current account of PSUs/ULBs within the next bank working day as per the directions generated from e-Procurement portal.

d) Bank should provide timely reports and reference details to NIC enabling them to carry out their role as stated below.

e) Refund of amount to bidders as per the XML file provided by e-Procurement system on the next bank working day from the date of generation of the XML file and also provide a confirmation to NIC on the same.

10. Role of State Procurement Cell:

a) Communicate requirements of Government departments/ State PSUs/ Autonomous Bodies/ ULBs online payment requirements to National Informatics Centre / the authorised Banks for mapping/ customization.

b) In every working day, the State Procurement Cell shall generate MIS from the e-Procurement portal to ascertain the tender paper cost received in the e-Tendering process separately bank-wise for the Government Department and the PSUs/ULBs. The SPC shall generate bank-wise separate online challans from the Odisha Treasury portal and make the remittance through over-the-counter facility or NEFT/RTGS (as and when this functionality is available in Treasury portal) and issue instruction to the bank for remittance of the receipt to the State Government account.

c) The State Procurement Cell shall be responsible for providing challan details and MIS in respect of the remittance towards tender paper cost to the Tender inviting authorities for their record.

d) State Procurement Cell shall monitor the progress of e-Tendering by different Government departments / State PSUs/ Autonomous Bodies / ULBs through an MIS. State Procurement Cell shall monitor and send monthly progress reports to the Government.

e) The e-Procurement system will generate a consolidated refund & settlement XML file as an end of the day activity.

f) e-procurement system will provide a web service for payment gateway (PG) provider to pull the encrypted refund and settlement details in XML file against a day.

g) Similarly, payment gateway (PG) provider will provide a web service to pull the refund and settlement status against a day

h) e-procurement system will update the status accordingly for reconciliation report.

11. Role of National Informatics Centre:

a) Customize e-Procurement software and web-pages of Government of Odisha (https://tendersodisha.gov.in) to enable the provision for electronic payment.

b) The NIC, Odisha will modify / rectify the errors in electronic data relating to the Chart of Account.

c) NIC will provide an interface to organisations to download the electronic receipt data.

d) Enable automatic generation of daily XML files from e-Procurement system and ensure delivery of the same to the authorised Banks for enabling automatic refund/settlement of funds.

e) NIC shall enable the e-Procurement portal to generate MIS as required for the State Procurement Cell in order to make remittance of the tender paper cost to the State Government account using the Odisha Treasury portal.

12. Role of Cyber Treasury:

a) The cost of the tender paper deposited by the SPC using the Odisha Treasury Portal which will be accounted for by the Cyber Treasury and it shall submit the accounts to A.G (O) as per the established process.

b) The Cyber Treasury will provide MIS as required to the SPC for the purpose of accounting and reconciliation of the electronic remittances made to the State Government account.

13. Redressal of Public grievances:

a) The State Procurement Cell, Odisha, National Informatics Centre, Odisha and the e-FPB will have an effective procedure for dealing with, public complaint for e-Receipt related matters. In case, any mistake is detected by any of the stakeholders in reporting of receipt of tender paper cost and EMD, either suo moto or on being brought to its notice, the State Procurement Cell, Odisha, National Informatics Centre, Odisha unit, Cyber Treasury and the bank will promptly take steps for rectification. The e-Focal Point Branch of the participating Banks, National Informatics Centre, Odisha and the State Procurement Cell, Odisha will notify the contact number and address of the Help Desk for resolution of any dispute regarding e-Receipt.

14. Applicability and modification of existing rules / orders:

The modalities prescribed in this Office Memorandum for downloading of tender paper, submission and rejection of bid, acceptance of Bids as well as refund and forfeiture of earnest deposit will be applicable for electronic submission of bids through e-

procurement portal. Existing provisions regulating cost of tender paper, earnest money deposit in OPWD Code and OGFR would stand modified to the extent prescribed.

15. These arrangements would be made effective after signing of MoU between the designated Banks and the State Procurement Cell, firming up of Banking arrangements and technical integration between designated Bank and e-Procurement Portal.

1. This shall take effect from the date of issue of this Office Memoradum.
2. Accordingly, relevant existing codal/ contractual provision exist vide Office Memorandum No.6785/W Dt.09.05.2017 of Works Department stands modified to the above extent.
3. This has been concurred in by the Finance Department vide their UOR No.-39-WF-I Dt.09.11.2017.

Sd/05.12.2017
E.I.C-cum-Secretary to Govt.

[For any Technical related queries please call at Help desk numbers of State Procurement Cell (SPC), Govt. of Odisha – 1800 3456 765, 0674-2530998, 2530996]

ANNXURE-I of Appendix - IV

Back-end Transaction Matrix of Electronic receipt and remittance of Cost of Tender Paper and Earnest Money Deposit on submission of bids.

	Cost of Tender Paper on submission of bids	**Earnest Money Deposit on submission of bids**
Government Departments	I. The payment towards the **cost of Tender Paper**, in case Government Departments, shall be collected in separate Pooling accounts opened in Focal Point Branch called e-FPB of respective designated banks [as stated in Para 2] at Bhubaneswar on T+1_day. II. With reference to the Notice Inviting Tender/ Bid Identification Number, the amount so realized is to be remitted to Government Account under the Head Of Account 0075-Misc. General Services-800-Other Receipts-0097-Misc. Receipts-02237-Cost of Tender Paper through Odisha Treasury Portal after opening of the bid.	I. In case of tenders of Government Departments, amount towards **Earnest Money Deposit** on submission of bids shall be collected in a pooling account opened for this purpose at Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar and the banks will remit the amount to respective bidder's account within two working days on receipt of instruction from TIA through refund and settlement of e-procurement system. II. In case of forfeiture of **Earnest Money Deposit** on submission of bids, the e- Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.
State PSUs Statutory Corporations, Autonomous Bodies and Local Bodies.	I. In case of State PSUs, Statutory corporations, Autonomous Bodies and Local Bodies etc. the amount towards **Cost of Tender Paper,** on submission of bids shall be collected in separated pooling accounts opened in Focal Point Branch called e-FPB of respective designated Banks at Bhubaneswar on T+1 days. II. The **Paper cost** will be transferred to the respective current accounts of concerned State PSUs, Statutory Corporation, Autonomous Bodies and Local Bodies etc. after opening of bid.	I. Amount towards **EMD** on submission of bids shall be collected in a separate pooling account of Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar and the banks will remit the amount to respective bidder's account on receipt of instruction from TIA through refund and settlement of e-procurement system within two working days from receipt of such instruction. II. In case of forfeiture of **Earnest Money deposit** on submission of bids, the e- Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.