DETAILED TENDER CALL NOTICE (DTCN) FOR "EXTENSION OF ADMINISTRATIVE BUILDING WITH OTHER ANCILLARY STRUCTURES etc. INSIDE EXISTING SeTP AT KUCHINDA NAC ", ODISHA

ESTIMATED COST: Rs. 67.95 LAKH (Excluding GST)

Bid identification No. KCDA/NAC-18/2023-24

COST OF TENDER PAPER: Rs. 10,000/-

February- 2024

CONTENTS OF
DETAILED TENDER CALL NOTICE (DTCN)

ବିଜ୍ଞାପିତ ଅଞ୍ଚଳ ପରିଷଦ, କୁଚିଣ୍ଡା

DTCN PART-II: General & Technical Bid
SECTION-1
NOTICE INVITING TENDER (NIT) FOR THE WORK

"EXTENSION OF ADMINISTRATIVE BUILDING WITH OTHER ANCILLARY STRUCTURES etc. INSIDE EXISTING SeTP AT KUCHINDA NAC, ODISHA"

NATIONAL COMPETITIVE BIDDING THROUGH e-Procurement

Bid Reference No. 256 /NAC Dt. 21.02.2024

The Executive Officer, Kuchinda NAC 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 'B' Class Contractors registered with the Odisha State Government and Contractors of equivalent grade/class registered with Central Government/ any other State Government/Military Engineering Services (MES)/ Railways/ MSME fulfilling minimum eligibility criteria as stated hereunder and other detailed qualifying requirements given in the DTCN to be eventually drawn up in the Standard/Customised P1 Contract Form of Odisha PWD. The bid documents should be downloaded and submitted on-line through the website www.tendersodisha.qov.in by eligible Class of contractors. Each bidder should have necessary Portal Enrolment (with its Digital Signature Certificate).Contractor(s)/Agency(s), registered elsewhere in equivalent Class/Category but not registered with Government of Odisha as a contractor in required class, can also participate in the e-procurement/bidding process for the work after necessary enrolment in Govt. portal but when becomes successful in the bidding process for the work, the corresponding Contractor/Agency will have to register themselves subsequently in required Class as a Contractor with the appropriate registration authority of Govt. of Odisha within a reasonable time, as decided by the Tender Inviting Authority, before award of the work [issue of Letter of Acceptance(LOA)]/sign of Agreement. Non-adherence to this condition will render its bid non-responsive and hence rejected, followed by other actions as deemed fit by KUCHINDA NAC. In such case(s), KUCHINDA NAC will be at liberty to consider the balance available bid(s) for the work for evaluation and finalization.

Sl. No.	Name of the Work	Value of Work put to Tender Excluding GST (In Rs. Lakh)	Bid Security (EMD) (In Rs. Lakh) (online)	Cost of Bid Document (InRs.) (online)	Period of Completion
1	2	3	4	5	6
1.	"Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at Kuchinda NAC,Odisha"	67.95	68,000/-	10,000/-	6 (Six) Months

2. Critical Dates:

Sl. No	Description		Critical Dates
(i)	Period of availability of tenders on-line (Availability period 10 days)	:	From 10.00 Hrs. of dt.24.02.2024 to 13.00 Hrs.of dt. 06.03.2024
(ii)	Last date & time of seeking clarification (Clarification within 7 days of publication)	:	17.00 Hrs. of dt. 04.03.2024
(iii)	Last date & time of bidding on-line	:	13.00 Hrs. of dt. 06.03.2024
(iv)	Date & time of Opening of Technical Bid	:	15.00 Hrs. of dt. 06.03.2024

3. The bidders desirous to participate in bidding must possess up to date compatible Digital Signature Certificate and should follow the changes/ modifications/ addendum to this 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 on demand by Kuchinda NAC.

5. Any Bidder, intending to claim exemption for submission of EMD/BID Security as per OPWD Code, is required to submit necessary documentary evidence in support of such claim along with it's on-line bid failing which, it's bid will be treated as incomplete/non-responsive and hence, will be rejected out rightly.

6. The Firms/ Companies/ Registered Contractors should have Executed Civil Construction Work(s) valuing not less than Rs. 21.80 Lakh (30% of the estimated cost) in any one year during the last 3 (three) years (2020-21 to 2022-23). The constructed work(s) should have been executed in Govt. / Public Sector

Unit/Undertaking/Enterprise in India. The document regarding completion of work to be furnished by Agency duly certified by the Employer not below the rank of Executive Engineer/ Executive Officer/ equivalent. The work experience during the financial year 2023-24 shall also be considered. The experience certificate(s) and document(s) should have been issued/signed from/by appropriate authority i.e., not below the rank of Executive Engineer/ Executive Officer/ equivalent. Weightage @ 10% per year shall be given on the value of the work(s) executed in the preceding years as mentioned in Clause 8 below.

7. The Firms/Companies/Registered Contractors should have annual financial turnover of not less than Rs.29.07 Lakh (40% of the estimated cost) in any one year in Construction Works during last 3 (three) years (2020-21 to 2022-23) and the turnover need to be certified by Chartered Accountant. The certificate issued by Chartered Accountant should bear the Unique Document Identification Number (UDIN). Weightage @ 10% per year shall be given on the annual turnover of the preceding years as mentioned below.

8. Weightage Factor (On Compound basis):
Following enhancement/compounding factors will be used for the cost of work(s) executed and to bring the financial figures to a common base value.

Year	Multiplying factor
2022-23	1.10
2021-22	1.21
2020-21	1.33

9. To arrive at the value of construction work(s) undertaken in any financial year (2020-21 to 2022-23) vide SI. 6 above, value of such construction works executed through multiple contracts in the corresponding financial year shall also be considered. For this purpose, the certificate(s) given by the appropriate authority(s) [refer 6 above], for the corresponding financial year of execution of the said construction work(s), shall be the basis for evaluation. In case the value of work(s) executed in any one financial year is not available in the certificate(s), the same shall be calculated on a pro-rata basis, considering the total executed value and the
time schedule in days.

10. The Bidder should not have been blacklisted by the Central Govt./Union Territory Administration/State Govt. or its subsidiaries in India as on the bid submission date. **Declaration by the Bidder in the form of Affidavit is to be uploaded in the e-tender website.**

11. The bid for the work shall remain valid for a period of 120 (One Hundred Twenty) days from the date of opening of Financial Bid. If any Bidder/Tenderer withdraws it's bid/tender before the said period or makes any modifications in the terms and conditions of its bid, the said bid shall be rejected followed by forfeiture of its EMD and/or other actions as deemed fit by KUCHINDA NAC.

12. Bids from Consortium/ Joint Venture are not acceptable.

13. The above mentioned documents to be submitted along with the bid by each bidder should not be treated as exhaustive and sequential. Before bidding, each intending bidder should go through the Detailed Tender Call Notice (DTCN) available in website www. tendersodisha.qov.in.

14. Corrigendum, clarification, etc., if any 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. Mode of Submission of tender: Tender should be submitted on-line through www.tendersodisha.gov.in.

17. The word/words/expression; 'Employer', 'Authority', 'Executive Engineer', 'Executive Officer, KUCHINDA NAC etc., with its/their assignee(s),hierarchy(s) and personnel acting on behalf of him/her/them mentioned in this DTCN shall carry the same meaning and spirit and shall ordinarily be referred and understood combinedly or discretely as 'Authority'/'Employer' for the stated work from tender stage to closure of the contract and if required, thereafter.

18. Name and Address of the Officer Inviting Bids:

The Executive Officer,
Kuchinda NAC,
Mail: kuchinda_nac@yahoo.com

Executive Officer,
NAC , Kuchinda

Memo No. 257 Date. 21.02.2024.

Copy Submitted to the Collector, Sambalpur / P.D, DUDA, Sambalpur / Addl. Chief Engineer, PH Circle Sambalpur -cum-ILW, Kuchinda NAC for information and necessary action .They are requested to publish the same in their Office Notice Board for wide publication.

Executive Officer
NAC , Kuchinda

Memo No. 258 Date. 21.02.2024.

Copy Submitted to Sub-Collector , Kuchinda / Tahasildar ,Kuchinda / Asst. Executive Engineer (R&B), Kuchinda / Asst. Executive Engineer (R.D), Kuchinda/ Asst. Executive Engineer, RWSS ,Kuchinda / Asst. Engineer P.H.D. Kuchinda for information and necessary action. They are requested to publish the same in their Office Notice Board for wide publication.

Executive Officer
NAC , Kuchinda

Memo No. 259 Date. 21.02.2024.

Copy forwarded to the N.I.C, Sambalpur for information and necessary action with a request to publish the same in NIC website for wide publication.

Executive Officer
NAC, Kuchinda

Memo No. 260 Date. 21.02.2024.

Copy forwarded to the MIS Computer Programmer, NAC Kuchinda to upload the tender documents in the web portal of Kuchinda NAC.

Executive Officer
NAC, Kuchinda

Memo No. 261 Date. 21.02.2024.

Copy forwarded to the Dy. Director (Advertisement)-cum-Secretary to Govt. , I & PR Department, Odisha, Bhubaneswar with a request to get it published in two leading Oriya Daily News Paper & One leading English Daily News Paper at an early date for wide circulation of the Tender call notice. Complimentary copy of the News Papers containingthe Tender Call Notice may be sent to this office for reference and record. The bill will be submitted to the Executive Officer, Notified Area Council, Kuchinda for payment..

Executive Officer
NAC, Kuchinda

CHECK LIST TO BE FILLED UP BY THE BIDDER

Name of the Work "Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at KUCHINDA NAC, Odisha"

Sl. No	Particulars	Reference to Clause No.	Whether furnished		Reference to Page No.
			Yes	No	
01	Cost of Bid Document Rs.10,000/- (online remittance)	As per NIT			
02	Bid Security (EMD) 1% (Online remittance)	DTCN Clause No.2(B)23.1			
03	Copy of valid Registration Certificate	DTCN Clause No.2(A).a.v			
04	Copy of valid GST Registration Certificate/ GSTIN	DTCN Clause No.2(A).a.iii			
05	Copy of PAN Card	DTCN Clause No.2(A).a.iv			
06	Works Experience — List of civil construction works executed during last 5 years	Schedule-D			
07	Turnover certificate duly certified by Chartered accountant bearing UDIN	DTCN clause No. (1).7			
08	Information regarding current litigation, debarring / expelling of the tender or abandonment of the work by the tenderer	Schedule-E			
09	Affidavit	Schedule- F			
10	Structure & Organization	Schedule-A			
11	Tools & Plants and machineries	Schedule-B			
12	Financial statement	Schedule-C			
13	Declaration by the Tenderer	Schedule-H			

CONTRACT DATA

A. GENERAL INFORMATIONS

SN	Item	Details
1	Bid Reference No.	256/NAC Dt. 21.02.2024
2	Name of the Work	"Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at Kuchinda NAC Odisha
3	Officer inviting tender	Executive Officer, Kuchinda NAC
4	Officer concerned with headquarters authorized as Employer/ Engineer-in- Charge of this Work for drawl of Agreement, Execution of the Work, Payment, etc	Executive Officer, Kuchinda NAC
5	Approval of Designs, Drawings, Technical Support & Supervision as per necessity	Executive Officer, Kuchinda NAC
6	Tender Accepting Authority	Executive Officer, Kuchinda NAC
7	Estimated Cost	Rs. 67.95 lakh
B. BID INFORMATION		
8	Intended completion period/Time period assigned for Completion	06 Months
9	Last Date & time of submission of Bid	13.00 Hrs. of Dt. 06.03.2024
10	Cost of Bid Document(To be remitted online)	Rs.10,000/-
11	Bid Security (EMD) (To be remitted online)	Rs. 68,000/-
12	Additional Performance Security	(In case the accepted tender value is less than the estimated cost put to tender)
i)	Amount	For details refer clause 23.4 of section 2(B)of DTCN

ii)	Pledged in favour of	Executive Officer, KUCHINDA NAC
iii)	Payable at	KUCHINDA NAC
iv)	Type of Instrument	As specified in the DTCN
13	The Financial years of last three years	2020-21 to 2022-23
14	Bid validity period	120 days from the date of opening of Price Bid
15	Currency of Contract	Indian Rupees
16	Language of Contract	English

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. Cost of Bid Document (online remittance).
ii. Bid Security (EMD): (online remittance)
iii. GST Registration Certificate / GSTIN.
iv. PAN Card.
v. Registration Certificate.
vi. Affidavit regarding : Correctness of certificates / no relation certificate/ Acceptance of tender conditions / free from criminal proceedings etc (Schedule- F)
vii. Work experience certificate from the authority not below the rank of Executive Engineer/Executive Officer/Equivalent.
viii. Annual Turnover Certificate from Chartered Accountant for last five financial years in Construction works.
ix. Any other relevant required document, if any.

Note:

Non submission of any other documents as per clauses not relevant to the nature of the work as per BOQ will not be considered for rejection.

(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 - Affidavits
Schedule G - Form of Bank Guarantee for Additional Performance Security/ Initial Security Deposit
Schedule H - Declaration by the Tenderer.

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

(¢) 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, can not participate in the tender.

SECTION- 2(B)
INSTRUCTIONS TO BIDDERS

A. GENERAL

1. Definitions:

(a) "Employer" means the Executive Officer, Kuchinda NAC or his authorised representative with whom the selected Contractor 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 Kuchinda Town of Sambalpur District in the State of Odisha.

4. Source of Funding:

The work will be funded by Government of Odisha.

5. Eligibility:

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

5.2. A Bidder shall be 'B" Class Contractors registered with the Odisha State Government and Contractors of equivalent grade/class registered with Central Government/ any other State Government/ MES/ Railways/ MSME.

5.3. Registered Contractor of *'B' Class of Odisha State PWD or equivalent class of CPWD / Railway / MES/MSME / 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 Executive Engineer and above in the Organisation of Executive Officer, KUCHINDA NAC 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 poor 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.

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, Executive Officer, KUCHINDA NAC 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 Kuchinda Town of Sambalpur District in the State of Odisha 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.

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. Amendment of Tender Documents:

13.1 At any time prior to the dead line for submission of tenders, Executive Officer, KUCHINDA NAC may for any reason, whether at its own initiative or in response to the clarifications requested by the prospective Contractor, modify the tender documents by issuing an Addendum/Corrigendum.

13.2. Such addendum will be notified in the website and will be binding upon them.

13.3. In order to afford intending Contractor reasonable time to take such addenda into account in preparing their tenders, Executive Officer, KUCHINDA NAC at his discretion, may extend the dead line for the submission of tenders, if necessary.

C. PREPARATION OF TENDER DOCUMENT

14. Language of the Documents:

All documents relating to the Tender shall be in the English language.

15. 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.

16. 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.

17. Preparation of Proposal:

17.1. 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.

17.2. 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. 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 manpower to execute & complete the work within the time schedule. 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)19.10) 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. Annual financial turnover of the last 5 (Five) years of the firm/Contractor duly certified by Chartered accountant bearing UDIN to be indicated in Schedule-B.

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 Executive Engineer/Executive Officer/equivalent in support of the work executed as furnished in Scheduled-D.
19.5. Affidavit/ Declaration as in Schedule 'EF', 'F' & 'H'.
19.6 GST Registration Certificate / GSTIN.
19.7. Copy of PAN Card.
19.8 Copy of Contractor's Registration Certificate.
19.9. General Power of Attorney if required in favour of the authorised signatory.
19.10. Other information as required.

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 percentage 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 utilised in the work, cost of T&P, consumables, infrastructure backup etc. The offer shall also be inclusive of all duties, levies, and taxes of the Central and State Govt. but exclusive of GST. 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 authorised 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 Executive Officer, KUCHINDA NAC

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. Earnest Money Deposit / ISD / SD / Additional Performance Security & GST:

23.1. Earnest Money Deposit:

The bidders are requested to deposit an amount of Rs. 69000.00 only in online mode towards EMD.

As per office memorandum No. 503/W dt.17.01.2022 of Govt. of Odisha, Works Dept. Local Micro and Small Enterprises (MSEs) are exempted from payment of Earnest Money deposit and concessional payment of performance security @ 25% of the value of performance security

23.2. Return of EMD:

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 (as per the Appendix-II of DTCN).

The earnest money given by other parties 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/Performance Security:

After issue of tender acceptance letter (LoA) by Executive Officer, KUCHINDA NAC, the successful bidder shall have to furnish Initial Security Deposit (ISD) amounting to not less than 2% (two percent) of the accepted value of the tender (save as EMD exemption facility available to bidders as per OPWD Code vide CL.5 of Section -1 of DTCN Part — I) in shape of NSC/Post Office Savings Bank Account /Post Office Time Deposit Account/Kisan VikashPatra/Bank Guarantee from any nationalized schedule Bank in India counter- guaranteed by its local branch at Bhubaneswar/ e-Bank Guarantee executed on the National e-Governance Services Limited (NeSL) (vide Works Department O.M. No.1499 dt. 01.02.2023) duly pledged in favour of the Executive Officer, KUCHINDA NAC within 15(fifteen) days of issue of LoA failing which the EMD/Bid security of the successful bidder shall be forfeited and other action as deemed fit shall be taken against the said bidder. The BG should remain valid at least till one month after expiry of defect liability period of one year from the stipulated date of completion of the work as per the contract.

23.4. Additional Performance Security:

As per FD O.M. no 4559/W dt. 05.04.2021, Additional Performance Security (APS) should be submitted by the successful bidder when the accepted bid amount is less than the estimated cost put to tender in following manner.

Sl. No	Range of Difference between the estimated cost put to tender and Bid amount	Additional performance security to be deposited by the successful bidder
I	Below 5%	No Additional Performance Security
ii.	From 5% and above and below 10%	50% of (Difference between estimated cost put to tender and Bid amount)
iii.	From 10% and above	150% of (Difference between estimated cost put to tender and Bid amount)

It should be in shape of NSC/Post Office Savings Bank Account / Post Office Time Deposit Account/Kisan Vikash Patra/Bank Guarantee from any nationalized schedule Bank in India counter-guaranteed by its local branch at Bhubaneswar/e-Bank Guarantee executed on the National e-Governance Services Limited (NeSL) (vide Works Department O.M. No. 1499 dt. 01.02.2023) duly pledged in favour of the Executive Officer, Kuchinda NAC. The BG should remain valid at least till one month after expiry of stipulated date of completion of the work as per the contract.

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

23.6. Security Deposit
5% of gross value will be deducted from running bill(s) of the contractor towards Security Deposit (SD) which will be refunded after the defect liability period subject to payment of final bill. Thus, the total security deposit will be 7% (i.e. 5% + 2%).

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 (¢) the successful tenderer fails to sign the Agreement for whatever reason.

23.8. In consideration of the Executive Officer, KUCHINDA NAC 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 liableto 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 furnish bid security for the amount shown in Col. 4 of the table of Notice Inviting Tender (NIT) on online mode.

ii) Bid Security/EMD shall 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 other action shall be taken as deemed fit against the bidder.

26.6. Submission of Bid:

In case of submission of bids though e-Procurement portal, 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.

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 Executive Officer, KUCHINDA NAC 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) BOQ 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 remitted online on submission of bid.
d) Proof of eligibility (i.e Valid registration certificate) is not enclosed.
e) PAN is not enclosed.
f) Affidavit is not enclosed as in Schedule-F.
g) Copy of GST Registration is not enclosed.
h) If the rate quoted by the bidder is less than 15% of the tendered amount.
i) Work experience certificate.
j) Financial Turnover certificate.

(ii) Tenderer should up load other required documents as stipulated in the Section-2(A) of DTCN. In case if the bidder has not submitted other required documents 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.

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 — 2(B) 33. 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 Executive Officer, NAC/Municipality/ MC 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 Executive Officer, KUCHINDA NAC 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 Executive Officer, KUCHINDA NAC during the evaluation of the tenders.

32. Determination of Responsiveness:

32.1. Prior to the detailed evaluation of tenders, Executive Officer, KUCHINDA NAC 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 Executive Officer, KUCHINDA NAC. 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.

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 may have to make a presentation on their technical proposal before the Evaluation Committee if felt necessary. The date of such presentation shall be intimated to them in writing or by mail.

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 L1 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 Li.

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:

Notwithstanding Clause 2(B)(F)35, the Executive Officer, KUCHINDA NAC 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)(E)30 & 2(B)(E)33, information relating to examination, clarification, 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, clarification, 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 15 (fifteen) 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, 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 L1 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 L bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to the condition that L, bidder negotiates at par with the rate quoted by the L; 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 811.2013)

g) 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 38.d. hereof.

ii) Standard/Customized Bid Document P.W.D. Form P1.

iii) The letter to proceed with the work shall be issued by Executive Officer, KUCHINDA NAC only after signing of the agreement. The notification of award will constitute the formation of the contract subject 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 Executive Officer, KUCHINDA NAC 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 "Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at Kuchinda NAC Odisha"
Section-8	Broad Scope of Works includes construction of: • Knowledge Centre cum Meeting Room: (10.375m x 4.0m) and provision of 1.5 m wide verandah. • Lounge Facility Room: (9.125m X 4.0m) and provision of 1.5 m wide verandah. • Wash cum Toilet Room: (5.5m X 4.5 m) • Staircase with Head Room: (5.75m X 2.8m) • Co-Compost Sale Counter Room: (4.0 m X 3.m) • o-Compost Shed Room: (6.5 m X 5.0 m) • PH works of buildings • Internal electrical works • Office furniture and other non - core components Interlocking Paver block road • Garden lightings • Stainless steel hand railing for garden area
2(B)1.(a)	Name of the Employer: Executive Officer, KUCHINDA NAC
2(B)33.6	Method of selection: Qualifying in the Technical Bid and L. 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-2(B) 26.
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	Clarifications may be requested till 17.00 Hrs. of Dt. 08.01.2024
2(B)30	The tender (Technical Bid) will be opened on date & time: Hrs. of Dt.

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 —-3
FORM OF AGREEMENT

This contract made the ..... day Of ……between the ..... acting through revere ——— 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

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 Executive Officer

SECTION-4
CONDITIONS OF CONTRACT

4.1. Decision of Employer is Final:

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 Employer 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 Executive Officer is to decide which shall be followed.

4.2. 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 Executive Officer and during the progress of the works to amend on the requisition of the Executive Officer 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.

4.3. 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 Executive Officer 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.

4.4. Approved Drawings & Specification of Site with Contractors Agent: Complete copies of the drawing and specifications signed by the Executive Officer 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 Executive Officer.

4.5. 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 Employer 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.

4.6. 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 Executive Officer 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 Executive Officer 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 Executive Officer and no such authority shall be given if the work is capable of being measured and being paid for at an agreed rate.

4.7. Rate for Extra Work.

Any authority given by the Executive Officer, 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-6 (Scope of work) of the DTCN, in carrying out the works are to be measured and valued and certified by the Executive Officer, 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 Employer will fix the rates to be paid and his decision shall be final.

4.8. 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 Executive Officer 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 bebinding on the contractor.

4.9. 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 Executive Officer 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.

4.10. 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 Executive Officer 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 Executive Officer 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 Executive Officer is also to have full power to require other proper materials to be substituted and in case of default, the Executive Officer 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.

4.10.1 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.

4.11. Execution with Defective Workmanship & Improper Materials.

If in the opinion of the Executive Officer any of the works have been executed with improper materials or defective workmanship, the contractor is then required by the Executive Officer 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 Executive Officer is to have full power to employ other agency to re-execute the work and the cost thereof shall be borne by the contractor.

4.12. 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 Executive Officer to be amended and made good by the contractor at his own cost unless the Executive Officer 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.

4.13. 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.

4.14. Execution of Works in the Site by Other Workmen:

The Executive Engineer 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.

4.15. 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 Executive Officer / 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 Executive Officer/ 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% of the whole time allowed under the contract has elapsed, 2 of the whole of the work before 2 of the whole time allowed under the contract has elapsed, 3/4" of the whole of the work before 3/4t% of the whole time allowed under the contract has elapsed.

iv) If at any time it should appear to the Executive Officer/ Engineer-in-Charge that the actual process of the work does not confirm to the programme to which consent has been given the Contractor shall produce, at the request of the Executive Officer/ 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 Executive Officer/ 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 Executive Officer/ 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 Executive Officer/ 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 Executive Officer/ 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 competent Authority . 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 Executive Officer/ 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.

In case of delay occurred due to any of the reasons mentioned below, the Contractor shall immediately give notice thereof in writing to the Executive Officer/ 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 Executive Officer/ 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 lockoutaffecting 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 Executive Officer/ 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 Executive Officer/ 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 relevant clauses of G; 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 Employer (whose decision in writing shall be final and binding) 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 relevant Clauses of G, 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 relevant Clauses, 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 Executive Officer 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 Superintending Engineer, Chief Engineer & 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 0.M. No.5288 dt.04.05.2016). In the present tender, this clause will be applicable when the SeTP will be completed before the stipulated date of completion in all respect.

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 Executive Officer shall be conclusive evidence), 20% of the value of leftover work will be realized from the contractor as penalty.

(Amendment as per letter No0.10639 dt.27.05.2005 of Works Department, Odisha)

4.16. 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 4.15 or in consequence of not having proper instructions for which the contractor shall have duly applied) the Executive Officer 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 Executive Officer 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 Executive Officer by the contractor or may be set off by the Executive Officer 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.

4.17. Payment Certificate.

A Certificate of the Executive Officer 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-4.11.

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

4.19 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 Material mponen

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:

Vm = 0.85 x Pm/100 X R x (M1- Mo)/Mo

Vm = 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.

Mo = 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.

M1 = 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.

Pm = 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:

$V_M = 0.85 \times P¢/100 \times R \times (C1 - Co)/Co$

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

M_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.

M_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_m= 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:

Vc = 0.85 x Ps/100 x R x (C1- Co)/Co

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

S0= 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

S1= 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.

Ps= 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:

Vb = 0.85 x Po/100 x R x (B1- Bp)/Bo

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

Bo = 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.
Bi: = The official retail price of bulk bitumen at IOCL/ BPCL depot at nearest center for the 15th day of the month under consideration.
Pb = 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:
Voi = 0.85 x Ppi/100 x R x (Piz-Pio)/Pio
V,i = Differential cost of pipe i.e. amount of increase or decrease in rupees to be paid or recovered during the month under consideration.
Poi = Percentage of pipe component of the work
Pi = 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.

Pio = 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 Component

Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the fallowing formula:
VL= 0.85 x Py/100 x R x (Ls Lo)/Lo
VL = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour.
Lo= 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.
Li = 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.
Pi = Percentage of labour component of the work.

19(c) : Adjustment o f 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:
Vs= 0.85 xP¢/100 x R x (F1- Fg)/Fo
Vr = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for fuel and lubricants.
Fo = 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.
Fi= 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 .

Pr= 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:

Vp- 0.85 x Pp/100 x R x (P1-Po)/Po

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

Po- 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;- 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- 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 E LATION 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 (P1)	P.O.L (Pr)	Steel (Ps)+ Cement(Po)+ Bitumen+ Pipes (Pp) + Plant & Machinery Spare & Component (Pp) +Other Materials*
1.	R&B works (% of component)	Road works	5	5	90
		Bridge work	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
		Piper line 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 @ 5% each. Steel, Cement, Pjpes, 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]

Cl. No-31 of F2/G2/P1 Contracts Sl. No.	Index description	Source of index	Base value*	Base Date*	Weightage of Item**
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 India, Ministry of Commerce and Industry.			
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 India, Ministry of Commerce and Industry.			
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 India, Ministry of Commerce and Industry.			
31 (a)(iv)	Bitumen (VG-30)	Official retail price of bulk bitumen at the nearest IOC/HPCL Depot.			
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.			
31 (b)	Labour	Minimum Wage notified by the Labour and Employee's State Insurance Department of Government of Qdisha, India.			5%
31 (¢)	POL	Official retail price of HSD at nearest IOCL/ HPCL/ BPCL Consumer Pump Depot.			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.	
		Total :	100%

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

4.20. 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 Executive Officer/ 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.

4,21. Defects Liability Period:

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

4.22. 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

4.23. 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/ PH/ Electrical 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.

4.24. 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 Executive Office/ 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 Executive Officer/ 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 Executive Officer may refuse to make such monthly payments if in his opinion, the progress of the work or the conduct of the contractor is notsatisfactory 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.

4.25. 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) Misbehavior/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.

4.26. If the rate quoted by the bidder is less than 15% of the tendered amount, then such a bid shall be rejected and the tender shall be finalized basing on merits of rest bids. But if more than one bid is quoted (Decimals upto two numbers will be taken for all practical purposes) either bat 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 bidders / their authorized representatives, the concerned SE/ Executive Officer of concerned Division and DAO will remain present.
(As included in Appendix — IX, Clause — 36 of OPWD Code Vol.II vide Works Department OM No.1437/W dt.31.01.2023).

4.27. If L1 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; bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to the condition that L, bidder negotiates at par with the rate quoted by the L; 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).

4.28. 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 ofthe 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).

4.29. Grant of Concession to Scheduled Caste & Scheduled Tribe Contractors:
If the tender of the individual registered contractors belonging to Scheduled Caste and Scheduled Tribe is within 10% of the rate quoted by the lowest tenderer for any work, the work may be considered for award to him/her at the lowest tendered rate in the relaxation of Rule 18 of the O.G.F.R. Vol.I and Para 3.5.14 of OPWD Code Vol.I. (Resolution No.16/37 — 27748 Dated 11.10.1977 amended vide No.16262/W Dt.30.10.2018).

4.30. Percentage rate contract (vide Works Department letter no.8310 dt.17.05.2006): In case of percentage rate tender:-

i. The Contractor has to mention percentage excess or less over the estimated Cost (In figures as well as words) in the prescribed format appended to thetender document.
ii. Contractors participated in the tender for more than one work may offer conditional rebate. Rebate offer submitted in separate sealed envelope shall be opened, declared and recorded first. The rebate so offered shall be considered after opening of all packages called in the same Tender Notice. The Contractors who wish to tender for two or more works shall submit separate

tender for each. Each tender shall have the Bid Identification No., Name & Sl. No. of the work (as per IFB) to which they refer, written on the envelope.

iii. Only percentage quoted shall be considered. Percentage quoted by the Contractor should be accurately filled-in figures and words, so that there is no discrepancy.

a. If any discrepancy is found in the percentage quoted in words and figures, then the percentage quoted by the Contractor in words shall be taken as correct
b. If any discrepancy is found in the percentage quoted in percentage excess/ less and the total amount quoted by the Contractor, then percentage will be taken as correct.
c. The percentage quoted in the tender without mentioning excess or less and not supported with the corresponding amount will be treated as excess.
d. The percentage quoted in the tender without mentioning excess / less supported with corresponding amount does not tally with either to percentage excess or less then it will be treated as percentage excess.
e. The percentage quoted in the tender without mentioning excess / less supported with corresponding amount if tallied with the percentage then it will be treated as to which side the amount tallies.
f. The Contractor will write percentage excess/ less unto one decimal point only. If he writes the percentage excess / less upto two or more decimal points, the first decimal point shall only be considered without rounding off.
g. The tender shall be written legibly and free from erasures, over writings or corrections of figures. Corrections, over writings & interpolations where unavoidable should be made by making out, initialing, dating and rewriting.
iv. In the contract P1 time is the essence. The contractor is required to maintain a certain rate of progress specify in the contract.
v. The quantity mentioned can be increased or reduced to the extent of 10% for individual items subject to a maximum of 5% over the estimated cost. If it exceeds the limit stated above prior approval of competent authority is mandatory before making any payment.
vi. The period of completion is fixed and can not be altered except in case of exceptional circumstances with due approval of next higher authority.
vii. Bills for percentage rate tenders shall be prepared at the estimated rates for individual items only and the percentage excess or less shall be added or subtracted from the gross amount of the bill.

4.31 The safety certificate of the E.I. work will be furnished by the agencies after getting necessary verification from the electrical inspector / equally competent authority responsible for the work prior to Energisation of the building.

SECTION-5
SPECIAL CONDITIONS OF CONTRACT

5.1. 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 Executive Officer, KUCHINDA NAC / their authorized representative for his information. In case of failure to notify the change in the constitution within 15 days, the Executive Officer, KUCHINDA NAC / their authorized representative 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.

5.2. Access to Work:
The Executive Officer 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.

5.3. 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.

5.4. 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 inregard to the matters covered by this contract at any place outside Odisha.

5.5. 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.

5.6. 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.

5.7. 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.

5.8. 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.

5.9. 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.

5.10. 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.

5.11. Rates:
The Tenderer shall quote their offer on 'Percentage Rate' 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 on different components to arrive at such rates. 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 as per prevailing govt. norms from time to time shall be paid over the bill amount at the time of Payment of Bill.

The Offers are also to include

a) To supply all materials, labour, supervision, services, supports scaffoldings, approach road, construction equipments, tools etc., as required for proper execution of all the items of the work as per drawing and specification.
b) To provide all incidental items not shown or specified in particular, but reasonable or necessary for successful completion of the work in accordance with the drawings, specifications and schedule of quantities.
c) Cleaning, Uprooting the stumps, vegetation and old masonry etc., met in the trenches and excavations.
d) Providing shoring and shuttering to avoid sliding of the soils and removal of the same or completion.
e) De-watering as required and directed.
f) Excavation at all depths (Unless otherwise mentioned in schedule), stacking separately usable and disposal of surface earth and materials from site as directed.
g) Curing of all concrete and cement works as per specification and direction,
h) Centring, shuttering as required for all concrete work.
i) Bending, binding, tying the grill & placing in position, including supply of all materials & labour etc.
i) To provide water and power required for construction testing and commissioning,

5.12. 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.

5.13. Custody of the Materials:

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

5.14. 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 Executive Officer/ Engineer-in-Charge and approved with necessary modification if any after acceptance of the tender. However, the Executive Officer/ 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.

5.14(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.

(ii) 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 upto date progress.
(iv) Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative upto 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 upto 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 upto date, to indicate visually the actual progress of the work.
(xX) Quality assurance and quality control tests conducted during the month, with the results thereof.
(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 Executive Officer 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.

5.15.Initial Security Deposit:

In addition to the 2% ISD, another 5% of the bill amount shall be deducted fromeach bill towards the security deposit. The earnest money deposit, the initial security deposit before and after acceptance of tender together with the subsequent deduction from the contractor's bill shall form part of the security deposit for the due fulfillment 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 (as applicable) and initial security deposit forming part of the security deposit may be refunded on orders of competent authority.

5.16. 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 Executive Officer/ Engineer-in-charge. The monthly progress report shall be evaluated by the Executive Officer / Engineer-in-charge vis-a-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 Executive Officer/ Engineer-in-charge failing which the contractor shall be liable for action as per Clause -5.26.

5.17. 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.

5.18. 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.

5.19 Land:

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

5.20. 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.

5.21. Resident Engineer:

The contractor shall engage for this work competent, qualified and authorized 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.

5.22. Force Majeure:

Neither the contractor nor the Executive Officer 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.

5.23. 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.

5.24. 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.

5.25.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.

ii) 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. 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.

5.26. Rescission of Contract:

Subject to other provisions contained in this clause the Executive Officer of the ULB 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 Executive Officer 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 Executive Officer (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 Executive Officer.

iv) If the contractor fails to comply with the provisions of Clause-5.15 & 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 Executive Officer.

When the contractor has made himself liable for action under any of the cases aforesaid, the Employer/Authority shall have the powers to rescind the contract (of which rescission notice in writing to the contractor under the hand of Executive Officer shall be conclusive evidence), 20% of the value of the left over work will be realized from the contractor as Penalty

5.26.1. In case of rescission of contract as per Clause-5.26 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.

5.27 (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 (46% 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 Employer/Authority (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.

5.27 (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.

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

5.28. 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 Executive Officer 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 Executive Officer or Sub-Divisional Officer 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-a-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]

5.28.1. Short title — These regulations may be called “The Odisha Public Works Department / Electricity Department Contractor's Regulations”.

5.28.2. 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.

ii) “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.

5.28.3. 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.

5.28.4. 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

5.28.5. 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.

5.28.6. 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 Executive Officer 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.

5.28.7 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.
(iv) 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.

5.28.8 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.

5.28.9 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.

5.28.10. 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.

5.28.11. 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 Executive Officer 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.

5.28.12. 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 Executive Officer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

5.28.13. 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.

5.28.14. Submission of return:

The contractor shall submit periodical returns as may be specified from time to time.

5.28.15. 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.

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-6
SCOPE OF WORK
GENERAL

The intent of this Section is to specify the work items to be covered on 'Percentage rate contract' in conformity with the technical specifications as enumerated in the subsequent clauses for the work "Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at Kuchinda NAC, Odisha"

6.1. Location:
1. Town: Kuchinda District: Sambalpur State: Odisha

6.2. Detailed Scope of the Bid:

This is a "Procurement and Construction Contract" in which the contractor is responsible for the execution of the work including the supply and installation of all materials, machineries, equipment etc. in accordance with the specifications stipulated in the Bid Document and in conformity with the Quality Parameters laid down in the relevant BIS, CPHEEQ, Bid Document etc. and completing the entire work in all respect satisfactorily and commissioning within the stipulated time period.

The agency is advised to carefully study the detailed scope of the work along with the available drawing and design and proceed as per the direction of the Engineer-in-charge.

6.3. Detail Scope of work:

1. Construction of Knowledge Centre cum Meeting Room, Lounge Facility, Wash cum Toilet, Staircase with Head Room, Co-Compost Sale Counter and Co-Compost Shed:

i. Following buildings are to be constructed with Normal footing in accordance with the PWD specifications. The internal dimensions of the buildings are:
A. Knowledge Centre cum Meeting Room: (10.375m x 4.0m) and provision of 1.5 m wide verandah.
B. Lounge Facility Room: (9.125m X 4.0m) and provision of 1.5 m wide verandah.
C. Wash cum Toilet Room: (5.5m X 4.5 m)
D. Staircase with Head Room: (5.75m X 2.8m)
E. Co-Compost Sale Counter Room: (4.0 m X 3.m)
F. Co-Compost Shed Room: (6.5 m X 5.0 m)

ii. The Knowledge Centre cum Meeting Room shall be constructed above the existing Admin building.
iii. The provision of 1.5m corridor in 1% floor shall be constructed by jointing with the existing RCC roof slab of GF of Admin building. The jointing of new and old concrete shall be made by cutting the old slab

and continuing the existing reinforcement and using concreting by applying water proofing jointing compound.
iv. All buildings shall be RCC framed structure with RCC M-25 duly as per attached drawing.
v. The plinth height of building shall not be less than 600 mm above FGL.
vi. P.C.C. (1:3:6) of 100 mm thick shall be provided below the footing.
vii. RCC plinth band of 250x 250 mm & 250 X 400 mm shall be provided as per drawings attached.
viii. Reinforcement shall be high strength deformed bar of grade Fe-500 confirming to 1S:1786-2008
ix. Fly Ash brick masonry in CM (1:4) using fly ash bricks shall be used for brick work.
x. 16mm/12mm thick cement plaster (1:6) shall be provided over brick work. 6 mm thick cement plaster (1:4) shall be provided over RCC surfaces
xi. Porcelain glazed tiles and Ceramic tiles (anti-skid) of reputed make i.e. KAJARIA/ SOMANY/J&J shall be provided on the walls and floors of toilet room respectively.
xii. Vitrified tiles of size 600 mm x 600 mm of reputed make i.e. KAJARIA/ SOMANY/J&J/Netco make laid on 20 mm thick cement mortar (1:4) shall beprovided on the floors of all rooms.
xiii. The sub base below flooring to be with 100mm thick PCC 1:3:6 followed by compacted sand filling.
xiv. Aluminium door with OEL anodized with 12mm thick pre laminated NOVAPAN Board of appropriate size shall be provided as per BoQ.
xv. Window (sliding type) made of Aluminium section as window frame with 5mm thick black glass as panel of appropriate size shall be provided as per BoQ.
xvi. M.S. window grill for the windows shall be provided as per BoQ.
Xvii FRP doors for bathroom/toilet of appropriate size shall be provided as per BoQ.
Xviii All buildings shall be complete with required electrical wirings, fittings connections etc as per BoQ.
xix. All toilets shall be complete in all respect with required pipings and fixtures as per BoQ.
xx. Wall painting for two coats with plastic emulsion paint over a coat of primer of approved make shall be done on the inner portion of the buildings.
xxi. Wall painting for two coats with weather seal coat over a coat of water bound wall primer of approved make shall be done on the outer portion of the buildings.
xxii. Painting two coats with synthetic enamel paint over a coat of primer over iron works for grill and other iron works shall be provided.
xxiii. Adequate numbers of windows along with ceiling fan including LED bulbs shall be provided as per BoQ.
xxiv. LED bulbs of preferably 9 W capacity shall be provided. The make of all electrical items like switch, plug, ceiling fan, exhaust fan, cables/internal wiring etc. to be installed shall be duly approved by the Engineer-in-charge as per BoQ.
xxv. One exhaust fan shall be provided in the toilet rooms as per BoQ.
xxvi. All arrangements shall be completed as per the direction of Engineer-in-charge.
xxvii The external & internal PH works shall be provided in complete shape as per BoQ.
xxviii. The buildings shall be completed with all related items as per standard PWD, PH & electrical IS code specifications.

2. Supply and installation of following Non-core components as per BoQ.
i) Office furniture
a) Godrej make Conference Table
b) Godrej make Sally Mid Back Chair with wide back rest and arm rest
c) Godrej make metal rectangular office table with 5 drawers storage
d) Godrej or Durian make L shaped help desk
e) Godrej make Brawn 6 seater Dining table with 6 M.S chairs
f) Nilkamal MAGIC IRON BLACK plastic chair with arm rest
g) Godrej Glass double Door Storwel Almirah/ Bookshelf
h) Godrej make Vurv Queen Size Bed
i) High quality Kurl-on/ sleepwell make mattress

j) Godrej make, 4 full Shelves Iron Office Cupboard
k) Nilkamal Magna 15 Personal Locker
l) Regular Steel (Magnetic) Whiteboard for Office, Home & School , Lightweight Aluminium Frame
ii) 43" 4K LED Smart TV
iii) Water purifier
iv) Fire Extinguisher
v) Electronic weighing balance machine of 20KG capacity
vi) CCTV surveillance system and its accessories.
vii) All-in-One 12th Gen Intel Core i7-27inch(68.6 cm) Personal Computer system
viii) Plastic Shoe Cabinet
ix) Color laser printer
x) Stainless steel of 304 grade in hand railing
xi) Signage Boards
xii) Garden Lights with laying of cables and accessories
xiii) Stainless steel Hand railing around the garden area
xiv) Signage with acrylic/ Stainless steel Board

SECTION — 07
TECHNICAL SPECIFICATIONS & DESIGN CRITERIA

7.1. Intent of specification.

This Specification intends to stipulate the technical requirements for construction, testing, commissioning & trial run of septage treatment plant.

7.2. General Conditions

a) Codes and standards. IS — 3589 — 2001, IS — 10221- 1982 & CPHEO Manual of latest versions.

1. Cement shall not be less than O.P.C.-43 grade of reputed manufactures such as Lafarge/ L&T/ACC/ Ultratech /Konark/ Ambuja confirming to relevant IS.

2. The steel reinforcement shall be of SAIL/TATA/JINDAL STEEL/ VIZAG make of Fe-500 grade confirming to relevant IS specification.

3. As & when required, the steel/cement & other building materials will be tested by Department at the cost of contractor to ensure proper quality as per IS specification.

4. Testing of water tightness shall be conducted as per relevant IS Codes.

5. Machine mix shall be used in concrete work for all structure. Design mix of concrete will be preferred. Vibrator of appropriate type shall be used for compaction of concrete.

6. All the structures are to be designed as permanent type and shall have aesthetic elevation.

7. Form work shall be of steel plates and frame, sound seasoned timber or any approved materials as decided by Engineer-in-charge to be used for the centring and shuttering of the structures.

8. Painting of all steel / MS structure to be done as per approved quality of enamel paint over a coat of primer.

9. All electrical work / earthings including wiring of pump house, office building & laboratory etc., to be done as per relevant IS specification and Indian Electrical Rules. Single phase wiring shall be done for lighting purpose.

10. All the valves are to conform with relevant IS specification and of reputed make.

11. The surplus earth and debris should be lifted after completion of work and proper levelling of site as directed by Engineer-in-charge without any extra claim.

12. Pumps and motors to be of reputed and approved make.

13. All the work including supply of materials to be executed as per relevant IS specification and direction of Engineer-in-charge.

14. Foundation of all structure including supply of materials shall be designed depending on Ground water table / subsoil condition. In no case the Depth of foundation below virgin soil shall be less than 1 mtr. at respective places.

15. All equipment, accessories, auxiliaries, piping, electrics, instruments, installations, construction, buildings etc. including all mechanical, electrical & civil engineering works covered under the scope of work of contractor shall be subjected to inspection & testing by the Department for its material, quality, workmanship and the performance. The contractor shall arrange and carryout all such inspection, testing, trial run etc. and demonstrate in presence of the Engineer-in-charge of the Department.

16. The cost of such inspection, testing, trial run, demonstration etc. shall be borne by the contractor. All responsibility of such inspection, testing, trial run, demonstration etc. and any damage/ loss that may cause directly or indirectly shall exclusively rest with the contractor.

17. Such inspection, testing, trial run, demonstration etc. shall, however, not relieve the contractor of their liability for replacing/ rectifying any defects, which may subsequently appear or be detected during erection and guarantee period.

18. All equipment, sub-assembly and components, auxiliaries and accessories shall be tested at manufacturer's workshop/site in accordance with relevant Indian Standards/ International Standards. The contractor shall furnish all test certificates etc. related to the quality of all the materials to the Department along with the delivery of the materials at site without which no payment shall be released. However, such test certificates, quality assurance certificate shall not relieve the contractor of it's obligation to replace forth with any instrument/ materials found defective during tests at works / trial running period/guarantee period.

19. Testing for performance of equipment shall be carried out and be checked with the approved parameters and performance characteristic curves for the purpose of acceptance.

20. Design Criteria and Specification for Water retaining structures: All the RCC Water Retaining structures shall be designed as per 15456-2000 and IS: 3370 -2009. The structural design shall be done by Working Stress Method. The steel used for reinforcement shall be Corrosion resistance high yield strength deformed bars confirming to 1S:1786 (with latest revision).

21. Design Criteria and specification for RCC Structures: Concrete structures should be designed as per IS:456 -2000 using Limit State Method of design. For RCC works the Grade of concrete shall not be less than M-25 Machine mix shall be used in concrete works of the structures. Vibrators of appropriate type shall be used for compaction of the concrete. The contractor shall give at his own cost concrete cubes to the department made from fresh concrete prepared for the work taken as per IS:1199 cured for 7 days and 28 days for testing by the department at any recognized/Govt. testing laboratory, and the testing charges shall be borne by the contractor.

22. Electrical equipment/ installation: All the Electrical equipment/ installations shall be energy efficient and confirm to star rated/ BEE as applicable. The Electrical Power Factor should not be less than 0.92.

23. The successful bidder shall source all ISI Marked Pipes & Fittings.

24. Power Supply: The installations shall generally be carried out in conformity with the requirements of Indian Electricity Act 1910 as emended up to date and Indian Electricity Rules, 1956 framed there under, the relevant regulations of the Electric Supply Authority concerned and also with the specifications laid down in the Indian Standard 1S:732/1963 “Code of Practice (Revised) for Electrical Wiring Installations (System Voltage not exceeding 650-V)". The work shall be executed as per the National Electrical Code and if any item is not covered there under or there is any doubt, the specification approved by the Engineer-in-Charge will be final and binding.

25. GENERAL SPECIFICATIONS

25.1 Earth Work And Backfill:

The scope of work covered under this specifications pertains to excavation of foundations, trenches, pits and over areas, in all sorts of soils, soft and hard rock, correct to dimensions given in the drawing including shoring, protections of existing underground utilities if any, such as water lines, electric cables etc., dewatering and shoring if necessary, stacking the useful materials as directed within the lead specified, refilling around the foundation and into the plinth with selected useful excavated earth and disposing off the surplus earth/materials within specified lead and finishing the surface to proper levels, slopes and camber etc. all complete.

SITE CLEARANCE:

Before the earth work is started the area coming under cutting and filling shall be cleared of all obstructions, loose stones, shrubs, rank vegetation, grass, brush-wood, trees and saplings of girth upto 30 cm. measured at a height of one metre above ground and rubbish removed upto a distance of 150 metres outside the periphery of the area under clearance. The roots of trees shall be removed to a minimum depth of 60 cm. below ground level, or a minimum of 30 cm. below formation level whichever is lower, and the hollows filled up with earth, levelled and rammed. This work is deemed to be included in the earth work items and no separate payment will be admissible for the work. The trees of girth above 30 cm. measured at a height of one meter above ground, shall only be cut after permission of the Engineer-in-charge is obtained in writing. The roots shall also be removed as described in the preceding sub-para. Payment for cutting and removing roots of such trees shall be made separately. Any material obtained from the site will be the property of the Department and the useful materials as decided by the Engineer-in-charge will be conveyed and properly stacked as directed within the lead specified.

SETTING OUT AND MAKING PROFILES:

Masonry or concrete pillars will be erected at suitable points in the area to serve as bench marks for the execution of the work. These bench marks shall be connected with G. T. S. or any other permanent bench mark approved by the Engineer-in-charge. Necessary profiles with pegs, bamboos and strings or Burjis shall be made to show the correct formation levels before the work is started. The contractor shall supply labour and materials for setting out and making profiles and Burjis for the work at his own cost and the same shall be maintained during the excavation work. The Department will show grid Co-ordinate or other reference points. It shall be the responsibility of the contractor to set out centre lines correctly with reference to the drawings and install substantial reference marks. Checking of such alignment by the Department will not absolve the contractor from his responsibility to execute the work strictly in accordance with the drawings.

EARTHWORK:

The contractor shall notify the Engineer-in-charge before starting excavation and before the ground is disturbed, to enable him to take existing levels for the purpose of measurements. The ground levels shall be taken at 5 to 15 metres intervals in uniformly sloping ground and at closer distance where local mounts, pits or undulations are met with, as directed by the Engineer-in-charge. The ground levels shall be recorded in field books and plotted on plans, which shall be signed by the Contractor and the Engineer-in-charge, before the earth work is actually started. The labour required for taking levels, shall be supplied by the Contractor at his own cost. The Contractor shall perform excavation in all types of soils, murrum, soft and hard rock, boulders etc. in foundation, over areas and in trenches to widths, lines, levels, grades and curves as shown in the drawing or lesser widths, lines and levels as directed by the Engineer-in-charge and as per items in the schedule of quantities.

The item in the schedule of quantities shall specify the excavation in trenches For this purpose, the excavation in trenches for foundations and for pipes, cables etc. not exceeding 1.5 m. in width and for chambers, manhole, shafts, wells, cesspits and the like not exceeding 10 sqm. on plan and to any depth

shall be described as Excavation in trenches for foundation, drains, pipes and cables and returning the excavated material to fill the trenches after pipes, cables etc, are laid and their joints tested and passed and disposal of surplus excavated material upto 50 m lead.

Excavation exceeding 1.5 m. in width as well as 10 sqm. on plan (excluding trenches for pipes, cables etc.) and exceeding 30 cm in depth shall be described as Excavation over areas.

CLASSIFICATION OF EARTH WORK:
The earth work shall be classified under the following main categories and measured separately for each category.
a) All types of soils, murrum, boulders.
b) Soft rock.
c) Hard rock.

a) ALL TYPES OF SOILS, MURRUM, BOULD : This includes earth, murrum, top deposits of agricultural soil, reclaimed soil, clay, sand or any combination thereof and soft and hard murrum, shingle etc. which is loose enough to be removed with spades, shovel and pick axes. Boulders not more than 0.03 cum. in volume found during the course of excavation shall also fall under this classification.

b) EXCAVATION IN SOFT ROCK : This shall include all materials which are rock or hard conglomerate, all decomposed weathered rock, highly fissured rock, old masonry, boulders bigger than 0.03 cum. in volume but not bigger than 0.5 cum. and other varieties of soft rock which can be removed only with pick axes, crow bars, wedges and hammers with some difficulty. The mere fact that the contractor resorts to blasting and/or wedging and chiselling for reasons of his own, shall not mean the rock is classifiable as hard rock.

c) EXCAVATION IN HARD ROCK : This includes all rock other than soft rock mentioned in para 27.1.5.1 b viz. soft rock, occurring in masses, boulders having approximate volume more than 0.5 cum. plain or reinforced cement concrete, which can best be removed by blasting or chiselling and wedging where blasting cannot be permitted owing to any restriction at site.

EXCAVATION IN HARD ROCK BY BLASTING : Where blasting is permitted the excavation in rock shall be done by means of blasting. No heavy blasting will be permitted and only controlled/muffled blasting will be permitted at the discretion of the Engineer-in- Charge. The Contractor shall be governed by the relevant statutory laws, rules and regulations on explosives, pertaining to the acquisition, transport, storage, handling and use of explosive which shall be rigidly followed and shall obtain himself all necessary materials and equipment for blasting. Blasting shall be executed through a licensed blaster with prior permission from police authorities. Prior to blasting sufficient notice shall be given to concerned parties to avoid danger to people, materials and nearby structures. All the damages caused by careless blasting if any shall be made good by the contractor at his own expenses.

EXCAVATION IN HARD ROCK BY CHISELLING AND WEDGING: Where blasting is not permitted and if the Engineer-in-Charge so desires, the excavation shall be done by chiselling and wedging or any other agreed method.

NOTE: All the excavated hard rock obtained shall be stacked properly and neatly within the specified lead by the contractor as directed by the Engineer-in-Charge.

EXCAVATION: The excavation under all classifications in areas in trenches or in pits shall be carried out systematically. Cutting shall be done from top to bottom and no under-pining or undercutting will be allowed. The bottom and sides of excavation shall be dressed to proper level, slopes, steps, camber etc.

by removing high spots, and ramming thoroughly as directed by the Engineer-in-charge. All the excavation shall be carried out strictly to the dimensions given in the drawing. The width shall generally be of the width of mud mat concrete and depth as shown in drawing or as directed by the Engineer-in-Charge, according to availability of the desired bearing capacity of soil below. Any excavation if taken below the specified depths and levels, the contractor shall at his own cost fill up such overcut to the specified level with cement concrete 1:4:8 in case of excavation in all types of soils and with cement concrete 1:2:4 in case of excavation in soft and hard rock. After the excavation is completed, the contractor shall notify the Engineer-in-Charge to that effect and no further work shall be taken up until the Engineer-in-Charge has approved the depth and dimensions and also the nature of foundation materials. Levels and measurements shall also be recorded prior to taking up any further work.

MODE OF MEASUREMENTS:

All excavation in areas having depth more than 30 cm. pits, trenches etc. shall be measured net. The dimensions for the purpose of payment shall be reckoned on the horizontal area of the excavation at the base for foundations of the walls, columns, footings, rafts or other foundations, multiplied by the mean depth from the surface of ground determined by levels. Excavation for side slopes will not be paid for. Excavation in areas having depths less than 30 cms. shall be measured as surface excavation on square metre basis, mentioning the average depth of excavation. Reasonable working space beyond concrete dimension required for waterproofing and shuttering where considered necessary in the opinion of Engineer-in Charge will be allowed in execution and considered for payment for underground water tank, sump, septic tank etc.

Wherever direct measurements of rock excavation are not possible, volume of rock be calculated on the basis of length, breadth and depth of stacks made at site. The net volume shall be worked out by reducing it by 50%, taking the voids into consideration as 50%. Similarly to arrive at net quantity to be paid in the case of soil, reduction @ 20% of corresponding stack/truck measurements shall be made.

The rate for excavation shall include carting and disposing and levelling the excavated materials within the specified lead. The rate shall also be inclusive of cost of all tools, plants, explosives, shoring, dewatering at various stages, labour, materials etc. to complete all the operations specified.

The backfilling and consolidation in sides of foundation and in plinth with excavated material will not be paid for separately. The rate quoted for excavation shall be deemed to have been included the cost of stacking of excavated materials, conveying within the specified lead, picking of selected stacked materials, conveying it to the place of final backfill, compaction to the required proctor density etc.

Payment for filling and consolidation inside the trenches, sides of foundations, plinth etc. with selected materials brought by the contractor other than the excavated material, shall be paid for separately as per the rates in schedule of quantities which includes cost of such materials/excavation, royalty, its conveyance within the specified lead, watering, consolidating, dressing etc. Actual quantity of consolidated filling shall be measured and paid in cubic metres upto two places of decimal.

The rate quoted in cum. for items of excavation is deemed to include the necessary additional quantity of excavation involved beyond the plan dimensions of the work which may be necessary to be carried out for carrying out the work in an engineering manner, decided upon by the contractor. Therefore no extra payment will be made for any excavation done other than the required quantity as per the plan dimension indicated in the drawings.

Measurements for excavation over areas shall be determined by levels or by “Dead men” or both at the discretion of the Engineer-in-Charge. If however the Engineer-in-Charge decides on measurement by levels, levels of site shall be jointly taken and recorded by the Engineer-in-Charge or his representatives

and the contractor, before commencement of the work and after completion of the work and the quantity of work done shall be computed based on these levels. The volume of earthwork shall be computed based on “Simpson's formula” or any other approved method at the discretion of the Engineer-in-Charge.

MODE OF PAYMENT: The contract rate shall be for unit cubic meter of earthwork.

25.2. PLAIN CEMENT CONCRETE:

GENERAL: The specification covers the requirement of ordinary Cement Concrete of the specified proportion to be used for various concrete items.

MATERIAL: The material requirement for particular item shall be as per IS 456

CEMENT: Cement shall be OPC/PPC cement conforming to IS 269 & IS 1489 respectively. Cement shall be stored in dry godowns or sheds use of PPC slag cement as approved by the Engineer In-charge, out of construction with damp ground on a 0.6M height platform. Cement shall not be stored in the open. All cement shall be kept well stacked and no cement other than intended to use in the work, shall be used. The cement shall be stored as received and shall be consumed in the order in which consignments are received and shall not be stored for long periods. No clogged cement caused by dampness shall be used. Blended cement for finishing work shall be used with the prior approval of the Engineer In-charge.

FINE AGGREGATE: The sand shall be clean, well graded, hard, strong, durable and gritty particles of size 0.15 mm to 5 mm fee from mica, dust, clay, kankar, soft or flaky particles and other deleterious materials. If the fine aggregate contain more than 4 percent of clay, dust or silt it shall be washed. Sea sand should not be used. The fineness modulus may range between 2.6 to 3.6.
COARSE AGGREGATE: All stone aggregate to be used for cement concrete shall be from approved sources. The aggregate shall be clean hard, strong and durable. It shall not contain soft, flaky thin or elongated pieces, alkali organic matter or other notorious matter.
The specific gravity of the aggregate shall be between 2.5 to 2.7.

STORAGE, SCREENING AND WASHING: It shall be stored at the work site in such a manner as to prevent contamination. All aggregate shall be stored to convenient height on hard and dry platform. The contractor shall install screens, one for coarse aggregate and one for sand and shall thoroughly wash all aggregate if directed by Engineer-in-charge.

WATER: The water shall be confirming to IS 3025. The water shall be clean and free from deleterious matters such as acids, oils, alkalies, sugar and vegetable matter. Every attempt shall be made to use water that is fit for drinking and whenever possible, water shall be used direct from the supply mains. PH value of water shall not be less than 6.

PROPORTIONING OF MIX: In ordinary concrete although proportion of cement to fine and course aggregate is specified by volume, the quantity of cement shall be determined by weight assuming one bag of cement weighing 50 kg. net to be equivalent to 35 Ltrs. Fine and course aggregate shall be measured by dry volume in suitable measuring boxes. The allowance shall be made for bulking in the fine aggregate due to moisture if any at the time of mixing. Water cement ratio will be such as will give concrete just sufficient workable to place and compact without difficulty.

MIXING: In all the cases concrete shall be mixed in a mechanical mixer at the site of work, mixer and other accessories should be in first class condition and well maintained throughout the construction. Mixing shall be continued till the homogeneous mixture is obtained but in no case mixing shall be done

for less than 1.5 minutes. When hand mixing is permitted by Engineer-in-charge in any special condition, it shall be done on a smooth, hard and water tight, platform large enough to allow sufficient turning over of the ingredients of concrete after adding the water. The material shall be mixed in dry state and turned over until they are thoroughly and fully mixed homogeneously. In hand mixing, the quantity of cement shall be increased by 10 percent without any extra cost. Retampering or remixing of partially hardened concrete shall not be permitted.

PLACING: The concrete shall be transported in such a manner that there shall be no tendency for the segregation of the different ingredients and it shall not be dropped into position from the height greater than 1.00 meter and shall be placed within 30 minutes after mixing. It shall not be interfered when once it has become to set. When new concrete is to be placed on the already set concrete, the surface of the old concrete shall be thoroughly roughened & wetted before the new concrete is laid. Cement sand slurry (1:2) being laid over the surface of the old concrete which is roughened, washed and wetted. The stripped surface of concrete shall be smooth & sharp. Any honey combing, air holes, board marks etc, shall be finished smooth.

COMPACTION: The concrete shall be thoroughly compacted during depositing to get dense concrete. The concrete shall not be disturbed once it is set. For important works, the use of mechanical vibrator is essential. The vibrator shall not be less than 4000 to 5000 impulse per minute and shall be worked at an interval about 600 mm. Over vibration shall be avoided.

DEWATERING: The item rate shall include bailing or pumping out all water if accumulated during the progress of the work either from seepage, springs, rain or any other cause.

FORM WORK: The forms shall generally comply with IS 456 & IS 14687. The shuttering shall be of wood or metal. Before placing the concrete the inside of the forms which comes into contact with concrete shall be coated with mineral oil. The forms shall be erected in position firmly so that it should not be dislocated during concreting. The forms shall be removed without damaging the concrete structure after development of sufficient strength and taking consent of the Engineerln-Charge.
DEFECTIVE CONCRETE: The defective concrete surface shall be made good as per the direction of Engineer-in-Charge at the contractor's own cost and charges.
WATERING AND CURING: All the concrete work shall be kept wet continuously for a period of a least 14 days to prevent excessive evaporation. In hot and dry weather matting or gunny bags may be hung on outside of the concrete surface to keep moist.
THE RATE INCLUDES FOR: 1. Installation and removal of scaffolding and shuttering. 2. Cost includes transporting, placing, compacting, curing and finishing cement concrete, 3. Necessary sampling and tests for materials and concrete. 4. Dewatering the pit or trench if found necessary till completion of work. 5. All labour, materials, use of equipment, tools and plants.
MODE OF MEASUREMENT: The measurement shall be for unit cubic meter of concrete or as specified in schedule of work. The concrete shall be measure for its length, breadth and depth. Deduction for pipe shall be made as per the actual outer dimension of the pipe.

MODE OF PAYMENT: The contract rate shall be for unit cubic meter of concrete or as specified in the schedule of work.

25.3. SPECIFICATION FOR REINFORCED CONCRETE AND ALLIED WORKS

GENERAL:

The quality of materials, method, control of manufacture and transportation of all concrete work in respect of mix whether reinforced or otherwise shall confirm to the applicable portion of these specification.

The Engineer-In-Charge shall have the right to inspect the source of materials, the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment and the quality control system. Such an inspection shall be arranged by the contractor and the Engineer-In- Charge's approval shall be obtained prior to starting of concrete work.

SCOPE: This specification covers the general requirements for concrete to be used on jobs using on-site production facilities including requirements in regard to the quality, quantity, handling, storage of ingredients, proportioning, batching, mixing, and testing of concrete and also requirements in regard to the quality, storage, cutting, bending and fixing of reinforcement in position. This also covers the transportation of concrete from mixer to the place of final deposit and placing, curing, protecting, repairing and finishing of concrete.

APPLICABLE CODES & SPECIFICATION:
The following specifications, standards and codes are made a part of this specification. All standards, tentative specifications, codes of practices referred to herein shall be the latest edition including all applicable official amendments, revisions and additional publications. In case of discrepancy between this specification and those referred to herein this specification shall govern.

No.	I.S No.	I.S. Name
1	I.S. 269	Specification for ordinary, rapid hardening and low heat Portland cement.
2	I.S. 383	Specification for coarse & fine aggregate from natural source or concentrate.
3	I.S. 456	Code of practice for plain and reinforced concrete.
4	I.S. 457	Code of practice for plain and reinforced concrete for dams and other massive structures.
5	I.S. 515	Specification for natural and manufactured aggregate for use in mass concrete.
6	I.S. 516	Method of test for strength of concrete.
7	I.S. 650	Specifications for standard sand for testing of cement.
8	I.S.1199	Method of sampling and analysis of concrete.
9	I.S 1200 (Part-II)	Method of measurement of building works.
10	I.S. 1791	Specification for batch type concrete mixers.
11	I.S. 2386 (Part-I)	Method of test for aggregates for concrete : Particle sizeand shape.

12	I.S. 2386 (Part-II)	Method of test for aggregates for concrete : Estimation ofdeleterious materials and organic impurities.
13	I.S. 2386 (Part-III)	Method of test for aggregates for concrete : Specificgravity, density, voids, absorption and bulking.
14	I.S. 2386 (Part-IV)	Method of test for aggregates for concrete : Mechanical properties.
15	I.S. 2386 (Part-V)	Method of test for aggregates for concrete : Soundness.
16	I.S. 2386 (Part-VI)	Measuring mortar making properties of fine aggregates.
17	I.S. 2386 (Part-VII)	Method of test for Alkali aggregates reactivity.
18	I.S. 2386 (Part-VIII)	Petrographic examination of aggregates.
19	I.S.2438	Specification for roller pan mixer.
20	I.S.2505	Specification for immersion type concrete vibrators.
21	I.S. 2506	Specification for screed board concrete vibrators.
22	I.S.2514	Specification for concrete vibrating table.
23	I.S. 2645	Specification for integral cement water proofing compound.
24	I.S.2722	Specification for portable swing weigh batcher for concrete.
25	I.S. 3025	Methods of sampling and test (physical and chemical) forwater used in industry.
26	I.S.3366	Specification for pan vibrator.
27	I.S. 3370 (Part-I)	Code of practice for concrete structures for the storage of liquids : General.
28	I.S. 3370 (Part-II)	Code of practice for concrete structures for the (Part-I) storage ofliquids : Reinforced concrete structure.
29	I.S. 3385	Code of practice for measurement of Civil Engineering works.
30	I.S. 3414	Code of practice for design and installation of joints in buildings.

31	I.S. 3558	Code of practice for use of immersion vibrators for consolidating concrete.
32	I.S.3935	Code of practice for composite construction.
33	I.S. 4031	Method of physical test for hydraulic cement.
34	I.S. 4656	Specification for form vibrator.
35	1.S. 7861 (Part-I)	Code of practice for extreme weather concreting (for hot weather concreting).
36	I.S.8112	Specifications for high strength ordinary Portland cement(Grade 43).
37	I.S.10262	Code of practice for design mix.
38	I.S.12269	Specifications for high strength ordinary Portland cement(Grade 53).
39	I.S. 13311 (Part-I)	Non-destructive testing of concrete: Method of test for ultrasonic pulse velocity.
40	I.S. 13311 (Part-ll)	Non-destructive testing of concrete: Method of testing by rebound hammer

25.4 MATERIALS FOR STANDARD CONCRETE:

The ingredients to be used in the manufacture of standard concrete shall consist solely of a standard type Portland cement; clean sand, natural coarse aggregate, clean water, ice, an admixture, if specifically called for on drawings or schedule of quantities.

CEMENT: Unless otherwise specified or called for by the Engineer-In-Charge cement shall be ordinary Portland cement / Portland Pozzolana cement (Fly ash based meeting the 28 day strength requirement of OPC 43 grade cement) in 50 kg bags. The use of bulk cement will be permitted only with the approvalof the Engineer-In-Charge. Changing of brand or type of cement within the same structure will not be permitted. In case it is required to change the brand of cement in the same structure, prior permission shall be obtained from the Engineer-In-Charge.

If demanded a certified report attesting to the conformity of the cement to I.S. specifications by the cement manufacturer's chemist shall be furnished to the Engineer-In-Charge.

The contractor will have to make his own arrangements for the storage of adequate quantity of cement. Cement in bulk may be stored in bins or silos, which will provide complete protection from dampness, contamination and minimize cracking and false set. Cement bags shall be stored in dry enclosedshed (storage under tarpaulins will not be permitted), well away from the outer walls and insulated from the floor to avoid contact with moisture from ground and so arranged as to provide ready access. Damaged or reclaimed or partly set cement will not be permitted to use and shall be removed from site. The storage bins and storage arrangements shall be such that there is no dead storage. Not more than 12 bags shall be stacked in any tier. The storage arrangement shall be approved by the Engineer-In-Charge.

Consignment of cement shall be stored as received and shall be consumed in the order of their delivery.

Cement held storage for a period of Ninety (90) days or longer shall be tested before use in work. Should at any time the Engineer-In-Charge have reason to consider that any cement is defective, then

irrespective of its origin and / or manufacturer's test certificate, such a cement shall be tested immediately at a National Test Laboratory / Departmental Laboratory or such approved laboratory and until the result of such test are found satisfactory, it shall not be used in any work.

AGGREGATES: Aggregate in general designates both fine and coarse inert materials used in the manufacture of concrete. Fine Aggregate is aggregate most of which passes through 4.75 mm L.S. sieve. Coarse Aggregate is aggregate most of which retained on 4.75 mm |.S. sieve.

All fine and coarse aggregate proposed for use in the work shall be subjected to Engineer- In-Charge's approval and after specific materials have been accepted the source of supply of such materials shall not be changed without prior approval of the Engineer-In-Charge.

Aggregates shall consist of natural sand, crushed stone and gravel from source known to produce satisfactory aggregate for concrete and shall be chemically inert, strong, hard, durable against weathering, of limited porosity and free from deleterious materials that may cause corrosion of the reinforcement or may impair the strength and/ or durability of concrete. The grading of aggregate shall be such as to produce a dense concrete of specified strength and consistency that will work readily into position without segregation and shall be based on the "mixed design" and preliminary test on concrete specified herein after.

SAMPLING AND TESTING:
Samples of the aggregates for mixed design and determination of suitability shall be taken under the supervision of the Engineer- In-Charge and delivered to the laboratory, well in advance of the scheduled placing of concrete. Records of tests, which have been made on proposed aggregates and on concrete made from this source of aggregates shall be furnished to the Engineer- In-Charge in advance ofthe work for use in determining the aggregate suitability.

STORAGE OF AGGREGATES:
All coarse and fine aggregates shall be stacked separately in stock piles in the material yard near the work site in bins properly constructed to avoid inter mixing of different aggregates. Contamination with the foreign materials and earth during storage and while heaping the materials shall be avoided. The aggregate must be specified quality not only at the time of receiving at site but more so at the time of loading into mixer. Rakers shall be used for lifting the coarse aggregates from the bins or stock piles. Coarse aggregate shall be piled in layers not exceeding 1.20 metres in height to prevent coning or segregation. Each layer shall cover the entire area of the stock pile before succeeding layers are started. Aggregates that have become segregated shall be rejected. Rejected material after re-mixing may be accepted, if subsequent tests demonstrate conformity with required gradation.

SPECIFIC GRAVITY:
Aggregate having a specific gravity below 2.60 (saturated surface dry basis) shall not be used without special permission of the Engineer- In-Charge.

FINE AGGREGATE:
Fine aggregate except as noted above and for other than lightweight concrete shall consist of natural river sand (suitable for concrete, preferably from Mahad or screened sand from Khanwada or Vaitharna), crushed stone sand orcrushed gravel sand stone dust confirming to I.S. 383. The sand shall be clean, sharp, hard, durable, chemically inert and free from dust, vegetable substances, adherent coating, clay, organic matter, alkalis, mica, salt or other deleterious substances which can be injurious to the setting qualities/ strength/ durability of concrete. No creek / sea sand shall be allowed.
Machine made sand will be acceptable provided the constituent rock/ gravel composition is sound, hard, dense, non-organic, uncoated and durable against weathering.

Sand shall be prepared for use by such screening or washing or both as necessary to remove all objectionable foreign matter while separating the sand grains to the required size fractions. Sand with silt content more than 3% will not be permitted for use unless the same is washed and silt content is brought within 3% by weight.

The percentage of deleterious substances in sand delivered to the mixer shall not exceed the following:

Sl. No	Substances	Percent by weight Uncrushed : Crushed
1	Material finer than 75 micron I.S. sieve	3.00% : 15.00%
2	Shale	1.00% -—
3	Coal and Lignite	1.00% : 1.00
4	Clay lumps	1.00% : 1.00%
5	Total of all above substances including items 1 to 4for uncrushed sand and items 3 & 4 for crushed sand.	5.00% 2.00%

Unless otherwise directed or approved, the grading of sand shall be within the limits indicated hereunder:

Sl. No	I.S. Sieve Designation	Percentage passing for			
		Zone - I	Zone -ll	Zone - III	Zone – IV
1	10 mm	100	100	100	100
2.	4.75mm	90-100	90-100	90-100	95-100
3.	2.36 mm	60-95	75-100	85-100	95-100
4.	1.18 mm	30-70	55-90	75-100	90-100
5.	600 micron	15-34	35-59	60-79	80-100
6.	300 micron	5-20	8-30	12-40	15-50
7.	150 micron	0-10	0-10	0-10	0-15

Where the grading falls outside the limits of any particular grading zone of sieves, other than 600 micron LS. sieve by total amount not exceeding 5% (five percent), it shall be regarded as falling within the grading zone. This tolerance shall not be applied to percentage passing the 600-micron |.S. sieve or to percentage passing any other sieve size on the coarser limit of Grading Zone-l or the finer limit of Grading Zone-lV. Fine aggregates confirming to Grading Zone-IV shall not be used unless mix designs and preliminary tests have shown its suitability for producing concrete of specified strength and workability.

The sand shall have a fineness modulus of not less than 2.2 or more than 3.2. The fineness modulus is determined by adding the cumulative percentage retained on the |.S. sieve (4.75 mm, 2.36 mm, 1.18mm, 600 micron, 300 micron and 150 micron) and dividing the sum by 100.

COARSE AGGREGATE:

Coarse aggregate for concrete except as noted above and for other than lightweight concrete shall confirm to 1.S. 383. This shall consist of natural or crushed stone and gravel, and shall be free from elongated, flaky or laminated pieces, adhering coatings, clay lumps, coal residue, clinkers, slag, alkalis, mica, organic matter or
other deleterious matter.

The coarse aggregate and fine aggregate shall be tested from time to time as required by the Engineer-In-Charge to ascertain its suitability or use in construction and the charges for testing aggregate shall be born by the contractor as specified herein after.

Crushed rock shall be screened and/or washed for the removal of dirt or dust coating if so demanded by the Engineering- In-Charge.

Coarse aggregates shall be either in single size or graded. In both cases grading shall be within the following limits:

"Table - |"

Sl. No.	I.S. Sieve Designation	Percentage passing for single sized aggregate ofnominal size				
		40 mm	20 mm	16 mm	12.5 mm	10 mm
1.	63mm	100	--	--	--	--
2.	40mm	85-100	100	--	--	--
3.	20mm	0-20	85-100	100	--	--
4.	16mm	--	--	85-100	100	--
5.	12.5 mm	--	--	--	85-100	100
6.	10mm	0-5	0-20	0-30	0-45	85-100
7.	4.75mm	--	0-5	0-5	0-10 | 0-20	
8.	4.36mm	--	--	--	-- | 0-5	

"Table - ||"

Sl. No.	I.S. Sieve Designation	Percentage passing for graded aggregate of Nominal size			
		40mm	20mm	16mm	12.5 mm
1.	63 mm	10 0			
2.	0mm	95-100	100		
3.	20mm	30-70	95-100	100	100
4.	16mm	--	--	90-100	--
5.	12.5 mm	--	--	--	90-100
6.	10mm	10-35	25-55	30-70	40-85
7.	4.75 mm	0-5	0-10	0-10	0-10
8.	2..36 mm	--	--	--	--

The pieces shall be angular in shape and shall have granular or crystalline surfaces. Friable, flaky and laminated pieces, mica and shale if present shall be only in such quantities that will not in the opinion of Engineer-In-Charge affect adversely the strength and / or durability of concrete. The maximum size of coarse aggregate shall be the maximum size specified above but in no case greater than % of the

minimum thickness of the member provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corners of form. Plums above 160 mm and up to any reasonable size can be used in plain mass concrete work of large dimensions up to a maximum limit of 20% by volume of concrete when specially approved by the Engineer-In-Charge. For heavily reinforced concrete members the nominal maximum size of the aggregate shall be 5 mm less than the minimum clear distance between the main reinforcing bars or 5 mm less than the minimum cover to the reinforcement whichever is smaller. The amount of fine particles occurring in the free state or as loose adherent shall not exceed 1% when determined by laboratory sedimentation tests as per 1.S. 2386. After 24 hours immersion in water, a previously dried sample shall not have gained more than 10% of its oven dry weight in air as determined by 1.S. 2386.

The percentage of deleterious substances in the coarse aggregate delivered to the mixer shall not exceed the following:

Sl. No.	Substaes	Percentage by weight of aggregates Uncrushed : Crushed	
	Materia finer than 75 micron I.S. sieve.		
2.	Coal and lignite.	1.00	1.00
3.	Clay lumps.	1.0	1.00
4.	Sift fragments.	0	
	Total of all above substances.	5.00	5.00

WATER:

Water used for both mixing and curing shall be free from injurious amounts of oils, acids, alkalis, salts, sugar, organic materials or other substances that may be deleterious to concrete or steel. Potable water is generally satisfactory for mixing and curing of concrete. In case of doubt the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time test specified in 1.S. 456. The sample of water taken for testing shall be typical for the water proposed to be used for concrete, due account being paid to seasonal variation. The sample shall not receive any treatment before testing other than that envisaged in the regular supply of water proposed for use in concrete. The sample shall be stored in a clean container previously rinsed out with similar water.

Average 28 days compressive strength of at least three 150 mm size concrete cubes prepared with water to be used shall not be less than 90% of the average strength of three similar concrete cubes prepared with distilled water. The cubes shall be prepared, cured and tested in accordance with the requirements of IS: 516.

The initial setting time of test block made with the appropriate test cement and the water proposed to be used shall not be less than 30 minutes and shall notdiffer by more than + 30 minutes from the initial setting time of control test block prepared with the appropriate test cement and distilled water. The block shall be prepared and tested in accordance with the requirements of 1S:4031 (Part 5).

27.5.8.2 Where water can be shown to contain an excess of acid, alkali, sugar or salt, Engineer-In-Charge may refuse to permit its use. As a guide the following concentration represent the maximum permissible values:

To neutralize 100 ml sample of water, using Phenolphthalein as an indicator, it should not require more than 5 ml of 0.02 normal NaOH. The details of test shall be as given in 8.1 of IS: 3025 (Part 22).

To neutralize 100 ml sample of water, using Methyl Orange as an indicator, it should not require more than 25 ml of 0.02 normal H_2SO_4. The details of test shall be as given in 8 of IS: 3025 (Part 23).

The percentage of solids, when tested in accordance with the IS: 3025 shall not exceed the following:

Sl. No	Substances	Tested as per	Permissible percentage
1	Organic	IS: 3025 (Part 18)	0.02% (200 mg/litre)
2	Inorganic	IS: 3025 (Part 18)	0.30% (3000 mg/litre)
3	Sulphates (as SO3)	IS: 3025 (Part 24)	0.04% (400 mg/litre
4	Chlorides (as Cl)	IS: 3025 (Part 32)	0.20% (2000 mg/litre) for concrete not containing embedded steel and 0.05% (500 mg/litre) for reinforced concrete works.
5	Suspended matter	IS: 3025 (Part 17)	0.20% (2000 mg/litre

P.H. value of water shall generally be not less than 6.

PROPORTIONING:

The proportions which shall be decided by conducting preliminary tests, shall be by weight. These proportions of cement, fine and coarse aggregates shall be maintained during subsequent concrete batching by means of weigh batchers confirming to I.S. 2722, capable of controlling the weights within one percent of the desired value. Except where it can be shown to the satisfaction of the Engineer-In-Charge that supply of properly graded aggregate of uniform quality can be maintained over the period of work, the grading of aggregate shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions. The different sizes shall be stacked in separate stock piles. The grading of coarse and fine aggregates shall be checked as frequently as possible, as determined by the Engineer-In-Charge, to ensure maintaining of grading in accordance with samples used in preliminary mix design. The material shall be stock piles well in advance of use.

The cement shall be measured by weight for design mix. Every facility should be provided to the Engineer-In-Charge for sampling and inspection of stored cement at site of work.

Only such quantity of water shall be added to the cement and aggregate in the concrete mix as to ensure dense concrete, specified surface finish, satisfactory workability, consistent with strength stipulated for each class of concrete. The water added to the mix shall be such as not to cause segregation of materials or the collection of excessive free water on the surface of the concrete.

The water cement ratio (W/C) is defined as the weight of water in mix (including the surface moisture of the aggregate) divided by the weight of cement in the mix. The actual water cement ratio to be adopted shall be determined in each instance by the contractor and approved by the Engineer-In-Charge.

The water cement ratio specified for use by the Engineer-In-Charge shall be maintained. The contractor shall determine the water content of the aggregate as frequently as directed by the Engineer-In-Charge as the work progresses and as specified in 1.8. 2386 (Part-lll) and the amount of mixing water added at the mixer shall be adjusted as directed by the Engineer-In- Charge so as to maintain the specified water cement ratio. To allow for the variation in their moisture content, suitable adjustments in the weights of aggregates shall also be made.

CONSISTENCY AND SLUMP :

Concrete shall be of a consistency and workability suitable for the conditions of the job. After the amount of water required is determined the consistency of mix shall be maintained through out the progress of the corresponding parts of the work and approved tests e.g. slump tests, compacting factor test etc. in accordance with I.S. 1199, shall be conducted from time to time to ensure the maintenance of such consistency.

The following tabulation gives a range of workability which shall generally be used for various types of construction unless otherwise instructed by the Engineer-In-Charge:

WORKABILITY OF CONCRETE :

Placing Conditions	Degree of workabilit	Value of Workabilit
Blinding concrete' shallow sections, pavements usingpavers .	Very low	0.75 - 0.80 compacting factor.
Mass concrete; lightly reinforced sections in slabs,beams, walls, columns, floors, hand placed pavements, canal lining; strip footings.	Low	Slump of25-75mm.
Heavily reinforced sections in slabs, beams, walls,columns, Slip form work; Pumped concrete	Medium	Slump of 50-100mm. Slump of 75-100 mm.
Trench fill; In-situ piling.Tremie concrete	High Very high	Slump of 100-150 mm.

BATCHING AND MIXING OF CONCRETE:
The material and proportions of concrete ingredients as established by the preliminary tests for the mix design shall be rigidly followed for all concrete works on the project and shall not be changed except when specifically permitted by Engineer-In-Charge.

Concrete shall be produced only by weigh batching the ingredients. The mixer and weigh batcher shall be maintained in clean serviceable condition. The accuracy of weigh batcher shall be periodically checked. They shall be set up in level on a firm base and the hopper shall be loaded evenly. The needle shall be adjusted to zero when the hopper is empty. Fine and coarse aggregates shall be weighed separately unless other wise stated.

Volume batching will not permitted. However Engineer-In-Charge may permit volume batching by subsequent conversion of weights of ingredients into their equivalent volumes in respect of their bulk densities only in the case of small and less important pours involving concrete of not more than 0.25 cubic metre on the day when other pours involving weigh batching are not likely tobe taken up.

The concrete shall be of strength as stipulated in the respective items. All concrete shall be mixed in mechanically operated batch mixers complying with 1.8. 1791 and of approved make with suitable provision for correctly controlling the water delivered to the drum.

The quantity of water actually entering the drum shall be checked with the reading of the gauge or valve setting when starting a job. The test should bemade while the mixer is running.

The volume of the mixed material shall not exceed the manufacturer's rated mixer capacity. The batch shall be charged into the mixer so that some water will enter the drum in advance of cement and aggregate. All water shall be inthe drum by the end of the first 15 seconds of the specified mixing time. Each batch shall be mixed until the concrete is uniform in colour for a minimum period of two minutes after all ingredients are in the drum.

The entire contents of the drum shall be discharged in one operation before the raw materials for the succeeding batches are fed into the drum.

Each time the work stops the mixer shall be cleaned out and when next commencing the mixing the first batch shall have 10% addition cement to allow for sticking in the drum.

The concrete test cubes will be tested at Department's or site laboratory. The contractor shall make all arrangements to cure, store of concrete cubes and transport the same to the laboratory at his own cost as directed by the Engineer-In- Charge.

SAMPLING AND STRENGTH TEST OF CONCRETE:

The samples from fresh concrete shall be taken as per I.S. 1199 and cubes shall be made, cured and tested at 28 days in accordance with I.S. 516.

ADMIXTURES:

Admixture may be used in concrete only with the approval of the Engineer-In-Charge based upon evidence that with the passage of time neither the compressive strength nor its durability reduced. Calcium chloride shall not be used for accelerating set of the cement for any concrete containing reinforcement or embedded steel parts. When calcium chloride is permitted to be used such as in mass concrete works it shall be dissolved in water and added to the mixing water in an amount not exceed 1.5 percent of the weight of the cement in each batch of concrete. When admixtures are used the designed concrete mix shall be corrected accordingly. Admixtures shall be used as per manufacturer's instructions and in the manner and with the control specified by Engineer-in-Charge. The cost of admixtures shall be included in the item rate and no extra amount shall be paid on this account.

Where specified and approved by Engineer-In-Charge neutralized vinsol resin or/ and other approved air entraining agent may be used to procedure the specified amount of air in the concrete mix and these agents shall conform to the requirements of ASTM standard 6-260 air entraining admixture of concrete. The recommended total air content in the concrete is 4% + 1%. The method of measuring air content shall be as per |.S. 1199.

RETARDING ADMIXTURES:

Where specified and approved by the Engineer-In-Charge retarding agents shall be added to the concrete mix in quantities specified by Engineer- In- Charge.

WATER REDUCING ADMIXTURES:

Where specified and approved by Engineer- In-Charge water reducing lignosulfonate mixture shall be added in quantities specified by Engineer- In- Charge. The admixtures shall be added in the form of a solution.

WATER PROOFING AGENT:
Where specified and approved by Engineer-In-Charge chloride and sulphide free waterproofing agent shall be added in the quantities specified by Engineer-In- Charge.

OTHER ADMIXTURES:
Engineer-In-Charge may at his discretion instruct contractor to use any other admixture in the concrete.

25.5 INSPECTION AND TESTING OF STRUCTURES:

Immediately after stripping the form work all concrete shall be carefully inspected and any defective work or small defects either removed or made good before the concrete has thoroughly hardened as instructed by the Engineer-In-Charge.

In case of doubt regarding the grade of concrete used either due to poor workmanship or based on results of cube strength tests the contractor may be asked to carry out compressive strength test of concrete on the basis of core test, ultrasonic test and/ or load test.

In case of results of cube strength are observed to be lower than the required designed strength at 28 days as per specifications, ultrasonic test shall be carried out by the digital ultrasonic concrete tester by an approved agency at the cost of the contractor.

In case the ultrasonic test do not satisfy the requirement as above the department will be at liberty to reject the concrete and the contractor has to dismantle and redo the same or carry out such remedial measures as approved by the department at the contractor's own cost.

The unit rate for concrete shall be all inclusive of making preliminary mix design and test cubes, works cubes, testing them as per specifications, slump test, optional tests etc. However, the department will test the same departmentally the contractor will have to make arrangement for transportation of the cubes to the departmental laboratory.

In case cube tests give unsatisfactory results the contractor should also conduct conclusive tests such as ultrasonic pulse test, core test etc. to prove the suitability of concrete. The cost of the conclusive tests shall have to be borne by the contractor.

If the results of ay test prove unsatisfactory or the structure shows signs of weakness, undue deflection or faulty construction the contractor shall remove and rebuild the member(s) involved or carry out such other remedial measures as may be required by the Engineer-In-Charge. The contractor shall bear the cost of so doing unless the failure of the member(s) to fulfill the test conditions is approved to be solely due to faulty design. The cost of all tests shall be borne by the contractor.

PREPARATION PRIOR TO CONCRETE PLACEMENT, FINAL INSPECTION AND APPROVAL:

Before the concrete is actually placed in position the insides of formwork shall be inspected to see that they have been cleaned and oiled. Temporary openings shall be provided to facilitate inspection especially at bottom of columns and wall forms to permit removal of saw dust, wood shavings, binding wire, rubbish, dirt etc. Such openings/ holes shall be later suitably plugged.

The various traders shall be permitted ample time to install drainage and plumbing lines, floor and trench drain, conduits, hangers, anchors, inserts, sleeves, bolts frames and other miscellaneous embedment to be cast in the concrete as indicated on the drawing or as necessary for the proper execution of the work. All such embedment shall be correctly positioned and securely held in the forms to prevent displacement during depositing and vibrating of concrete.

Slots, openings, holes, pockets etc. shall be provided in concrete work in the positions indicated in the drawings or as directed by the Engineer-In-Charge.

Reinforcement and other items to be cast in concrete shall have clean surfaces that will not impair bond.

Prior to concrete placement all works shall be inspected and approved by the Engineer-In-Charge and if found unsatisfactory concrete shall not be poured until all defects have been corrected at contractor's cost.

Approval of Engineer-In-Charge for any and all materials and work as required herein shall not relieve contractor from his obligations to produce finished concrete in accordance with the drawings and specifications.

RAIN OR WASH WATER:

No concrete shall be placed in wet weather or on a water covered surface. Any concrete that has been washed by heavy rains shall be entirely removed if there is any sign of cement and sand having been washed away from the concrete mixture.

Before leaving unattended the work shall be covered with tarpaulins immediately after the concrete has been placed and compacted to safe guard against damages, which may be caused by rain. Any water accumulating on the surface of the newly placed concrete shall be removed by approved means and no further concrete shall
be placed thereon until such water is removed. To avoid flow of water over / around freshly placed concrete suitable drains and sumps shall be provided.

BONDING MORTAR:

Immediately before concrete placement begins prepared surfaces except formwork which will come in contact with the concrete to be placed shall be covered with a bonding mortar of the same strength of concrete.

TRANSPORTATION:
All buckets, containers or conveyers used for transport the concrete shall be mortar tight. All means of conveyance shall be adopted to deliver the concrete of the required consistency and plasticity without segregation or loss of slump whatever method for transportation is employed.
Chute shall not be used for transport of concrete without the written permission of the Engineer-In-Charge and concrete shall not be re-handled before placing.

CONTAMINATED CONCRETE:
Concrete must be placed in its final position before it become too stiff to work.

On no account water shall be added after the initial mixing.

Concrete which has become stiff or has been contaminated with foreign materials and which has not been placed within half an hour of mixing water with cement shall be rejected and disposed off as directed by the Engineer-In-Charge.

All equipments used for mixing, transporting and placing of concrete shall be maintained in clean condition. All pans, buckets, hoppers, chutes, pipe lines and other equipments shall be thoroughly cleaned after each period of placement.

25.7 PROCEDURE FOR PLACING OF CONCRETE:

Before any concrete is placed the entire placing programme consisting of equipment, layout, proposed procedures and methods shall be submitted to Engineer-In-Charge for approval if so demanded by the Engineer-In-Charge and no concrete shall be placed until Engineer-In-Charge's approval has been obtained.

Equipment for conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete during depositing without segregation of materials considering the size of the job and placement location.

Concrete shall be placed in its final position before the cement reaches its initial set and concrete shall normally be compacted in its final position within 30 minutes of leaving the mixer and once compacted it shall not be disturbed.

In all cases the concrete shall be deposited as nearly as practicable directly inits final position and shall not be re-handled or caused to flow in a manner which may cause segregation, loss of materials, displacement of reinforcement, shuttering or embedded inserts or impair its strength. For locations where direct placement is not possible and in narrow forms contractor shall provide suitable drop and Elephant

Trunks to confine the movement of concrete. Special care shall be taken where concrete is dropped from a height especially if reinforcement is in the way particularly in columns and thin walls.

Except when otherwise approved by Engineer-In-Charge concrete shall be placed in the shuttering by shovels or other approved implements and shall not be dropped from a height more than one metre or handle in a manner which will cause segregation.

The following specification shall apply when placing of concrete by use of mechanical equipment is specifically called for while inviting bids or is warranted considering the nature of work involved:

Concrete placed in restricted forms by borrows, buggies, cars, sort chutes or hand shoveling shall be subjected to the requirement for vertical delivery of limited height to avoid segregation and shall deposited as nearly as practicable in it's final position.

Concreting once started shall be continuous until the pour is completed. Concrete shall be placed in successive horizontal layers of uniform thickness ranging from 150 mm to 900 mm as directed by the Engineer-In-Charge. These shall be placed as rapidly as practicable to prevent the formation of cold joints or planes of weakness between each succeeding layers within the pour. The thickness of each layer shall be such that it can be deposited before the previous layer has stiffened.

The bucket loads or other units of deposit shall be spotted progressively along the face of the layer with such overlap as will facilitate spreading the layer to uniform depth and texture with a minimum of shoveling. Any tendency to segregation shall be corrected by shoveling stones into mortar rather than mortar onto stones. Such a condition shall be corrected by redesign of mix or other means as directed by Engineer-In-Charge.

The top surface of each pour and bedding planes shall be approximately horizontal unless otherwise instructed.

COMPACTION:
Concrete shall be compacted during placing with approved vibrating equipment until the concrete has been consolidated to the maximum practicable density, is free of pockets of coarse aggregate and fits tightly against all form surfaces, reinforcement and embedded fixtures. Particular care shall be taken to ensure that all concrete placed against the form faces and into corners of forms or against hardened concrete at joints is free from voids or cavities. The use of vibrators shall be consistent with the concrete mix and caution is to be exercised not to over vibrate the concrete to the point that segregation results. When placing in layers, which are advancing horizontally as the work progresses great care shall be exercised to ensure adequate vibration, blending and melding of the concrete between the successive layers. The immersion vibrator shall penetrate the layer being placed and also penetrate the layer below while the under layers is still plastic to ensure good bond and homogeneity between the two layers and prevent the formation of cold joints.
Care shall be taken to prevent contact of immersion vibrators against reinforcement steel. Immersion vibrators shall not be allowed to come in contact with reinforcement steel after start of initial set. They shall also not be allowed to come into contact with forms or finished surfaces.

Formation of stone pockets or mortar pondages in corners and against faces of forms shall not be permitted. Should these occur they shall be dug out, reform and refiled to a sufficient depth and shape for thorough bonding as directed by Engineer-In-Charge. Bleeding or free water on top of concrete being deposited into the forms shall be caused to stop the concrete pour and the condition causing this defect corrected before any further concreting is resumed.

25.8 CONSTRUCTION JOINTS AND KEYS :
Concrete shall be placed without interruption until completion of the part of the work between predetermined construction joints as specified therein after. Time laps between the pouring of adjoining units shall be as specified in the drawings or as directed by the Engineer-In-Charge. If stopping of concreting becomes unavoidable anywhere a properly formed construction joints shall be made where the work is stopped. Joints shall be either vertical or horizontal unless otherwise shown on drawing. In case of an inclined or curved member the joints shall be at right angles to the axis of the member. Vertical joints in walls shall be kept to a minimum.

Vertical joints shall be formed against a stop board and horizontal joints shall be level and wherever possible arranged so that the joint lines coincide with the architectural features of the finished work. Batten shall be nailed to the form work to ensure a horizontal line and if directed shall also be used to form a grooved joint. For tank walls and similar work joints shall be formed as per |.S. 3370. Concrete that is in the process of setting shall not be disturbed or shaken by traffic either on the concrete itself or upon the shuttering.

Horizontal and vertical joints and shear keys shall be located and shall confirm in details to the requirements of the plans unless otherwise directed by the Engineer-
In-Charge.

COLUMN JOINTS :
In a column joints shall be formed 75 mm below the lowest soffit of the beam including haunches if any. In flat slab construction the joint shall be 75 mm below the soffit of column capital. At least 2 hours shall elapse after depositing concrete in columns, piers or walls before depositing in beams, girders or slabs supported thereon.

BEAM AND SLAB JOINTS:

Concrete in beam shall be placed throughout without a joint but if the joint is unavoidable the same shall be vertical and at the centre or within the middle third of the span unless otherwise shown on drawings. Where a beam intersects a girder the joints in the girder shall be offset a distance equal to twice the width of the beam and additional reinforcement provided for shear. The joint shall be vertical throughout the full thickness of the concrete member. A joint in a slab shall be vertical and parallel to the principal reinforcement. Where it is unavoidably at right angles to the principal reinforcement the joint shall be vertical and at the middle of the span.

Vertical construction joints in water tight construction will not be permitted unless indicated on the drawings. Where a horizontal construction joint is required to resist water pressure special care shall be taken in all phases of its construction to ensure maximum water tightness.

25.9 DOWELS:

Dowels for concrete works not likely to be taken up in the near future shall be wrapped in tar paper and burlap.

25.10 MASS FOUNDATIONS:

Mass foundation shall be poured in lifts not exceeding 1.5 m in height unless otherwise indicated on the drawings or approved by Engineer-In-Charge.

TREATMENT OF CONSTRUCTION JOINTS ON RESUMING CONCRETING:

A dryer mix shall be used for the top lift of horizontal pours to avoid laitance. All laitance and loose stones shall be thoroughly and carefully removed by wire brushing/ hacking and surface wash.

Just before concreting is resumed the roughened joint surface shall be thoroughly cleaned and loose matter removed and then treated with a thin layer of cement grout of proportion specified by Engineer-In-Charge and worked will into the surface. The new concrete shall be well worked against the prepared face before the grout mortar sets. Special care shall be taken to obtained thorough compaction and to avoid segregation of the concrete along the joint plane.

CURING, PROTECTING, REPAIRING AND FINISHING:

All concrete shall be cured by keeping it continuously damp for a period of time required for complete hydration and hardening to take place. Preference shall be given to the use of continuous sprays or by ponding of water, continuously saturated coverings of sacking, canvas, hessian (especially on vertical structural members) or other absorbent materials or approved effective curing compounds applied with spraying equipment capable of producing a smooth even textured coat. Extra precautions shall be exercised in curing concrete during cold and hot weather as outlined hereinafter.

Certain type of finish or preparation for overlaying concrete must be done at certain stages of the curing process and special treatment may be required for specific concrete surface finish.

CURING WITH WATER:

Fresh concrete shall be kept continuously wet for a minimum period of 10 days from the date of placing of concrete following a lapse of 10 to 12 hours after laying of concrete in normal weather and in hot weather not more than lapse of 4 hours. Date of casting shall have to be marked, as directed by Engineer-in-charge, on the exposed surfaces of the concrete so as to enable easy monitoring of the curing period.

The curing of horizontal surface exposed to the drying winds shall be however begin immediately after the concrete has hardened. Water shall be applied to unformed concrete surfaces within one hour after concrete has set. Water shall be applied to formed surface immediately upon removal of forms. Quantity of water applied shall be controlled so as to prevent erosion of freshly placed concrete.

The quality of curing water shall be the same as that used for mixing concrete.

Curing shall be assured by use of an ample water supply under pressure in pipes with all necessary appliances of hose, sprinklers and spraying devices. Continuous fine moist spraying or sprinkling shall be used unless otherwise specified or approved by the Engineer-In-Charge.

For curing of concrete in pavements, side-walks, floors flat roofs or other level surfaces the ponding method of curing is preferred. The method of containing the ponded water shall be approved by the Engineer-In-Charge. Special attention shall be given to edges and corners of the slab to ensure proper protection to these areas. The ponded areas shall be kept continuously filled with water during the curing period.

All equipments and materials required for curing shall be on and ready for use before concrete is placed.

25.11 FINISHING OF CONCRETE:

This specification is intended to cover the treatment of concrete surface for all structures. Areas requiring special finish not covered by this specification shall be clearly indicated on the drawings and special specification shall be furnished.

When specified on the drawings an integral cement concrete finish of specified thickness for floors and slabs shall be applied either monolithic or bonded as specified on the drawings and as per I.S. 2571.

The surface shall be compacted and then floated with a wooden float or power floating machine. The surface shall be tested with a straight edge andany high and low spots eliminated.

Floating or trowelling of the finish shall be permitted only after all surface water has evaporated. Dry cement or a mixture of dry cement and sand shall not be sprinkled directly on the surface of the concrete finish to absorb moisture or to stiffen the mix. A rubbed finish shall be provided only on exposed concrete surfaces as specified on the drawings. Upon removal of forms all fins and other projections on the surfaces shall be carefully removed, offsets leveled, voids and /or damaged sections immediately saturated with water and repaired by filling with concrete or mortar of the same composition as was used in the concrete. The finished surfaces shall present a uniform and smooth appearance.

All concrete shall be protected against damage until final acceptance by the Engineer-In-Charge.

25.12 MODE OF MEASUREMENTS :

The concrete as actually done shall be measured for payment. Any work done excess over the specified dimensions for the section shown in the drawing or as required by the Engineer-In-Charge shall not be measured for payment.

Dimensions of length, breadth and thickness shall be measured correct to nearest centimeters except for the thickness of slab, which shall be measured to nearest 5 mm.

Areas shall be worked out to nearest 0.01 square metre and the cubic contents of consolidated concrete shall be worked out to nearest 0.001 cubic metres.

For the purpose of measurements and payments for all concrete works 1.S. 1200 (Part-I) shall be referred.

CONTROL JOINT / DUMMY JOINT:

These joints shall be founded at 5 M to 6 M intervals. The width of the joint shall be 8 to 10 mm and the depth shall be 25 mm. The edges shall be rounded with an edging tool. The joint shall be filled with the joint sealing compound of 1S:1834-1961 for hot applied sealing compounds for joints in concrete. The unit of measurement will be running metre including cost of sealing compound.

25.13 BRICK MASONARY:

GENERAL. This specification covers requirement of the Brick Work in specified proportion of cement mortar.

BRICK: Brick shall generally confirmed to IS 1077. All the bricks to be used in the work shall be well bunt clay brick of class 35, red colour, homogeneous in texture, free from flaws, cracks and crevices. They shall have a frog of 10 mm. depth on one side of their flat faces. No brick after twenty four hours immersion in water shall absorb more than 25% of its own weight and strength should not be less than 3.5 MPa (35 kg/Sq.cm). The test report of the bricks shall be submitted to the Engineer-in-charge at the contractor's own cost, if required Brick shall be uniformly burnt throughout but not over burnt, shall give the clear metallic ringing sound when struck.

BRICK WORK: All bricks shall be thoroughly soaked in water before use till the bubbles ceases to come up. No half or quarter brick shall be used except as closures. The course shall be horizontal and the wall shall be raised to plumb. Joints in brick wall shall not exceed to 10mm thick. Brick work shall be uniformly raised around to heights as per drawings. All joints shall thoroughly flushed with mortar at every courses. Care shall be taken to see that the bricks are properly bedded and joint completely filled to full depth. No bat or cut bricks shall be used in the work unless absolutely required to give proper shape.
Brick work shall be built in cement and sand mortar as specified in the schedule or as per drawing. The joints shall be raked for a depth of 10 mm to receive cement plaster.

DEWATERING: The item rate shall include bailing or pumping out all water which may accumulate during the progress of the work either from seepage, springs, rain or any other cause.

WATERING AND CURING: All the brick work shall be kept damp continuously for a period of 14 days to prevent excessive evaporation In hot and dry weather matting or gunny bags may hung on the outside of brick work & kept moist.

THE RATE INCLUDES FOR:

1. Erecting, dismantling and removing the scaffolding and curing brick work for at least 14 days.
2. Dewatering the pit or trench if found necessary till completion of work.
3. Labour, materials, tools, paint etc. used in the work.

MODE OF MEASUREMENT: The measurement shall be for unit cubic meter of brick work or as specified in the schedule of work. The brick wall shall be measured for its length, breadth and depth.

MODE OF PAYMENT: The contract rate shall be for unit cubic meter or as specified in the schedule of work.

CEMENT PLASTER:

GENERAL. This specification covers the requirement of the Cement plaster in the specified proportions.

CEMENT MORTAR: Cement and sand shall be mixed to the proportions as described in the schedule. Cement and sand shall be first mixed dry on the dry platform after which sufficient clean water shall be added to bring the whole mix into a plastic condition. No mortar which has started to set shall be used nor such mortar remixed with new one. It shall be removed from the work site at once.

PLASTERING: In all plaster work, mortar shall be firmly applied and well pressed into the joints on the surface and drubbed and levelled with a flat wooden rule to give required thickness. Long straight edge shall be freely used to ensure a perfectly plane and even surface. All corner must be finished to their true angle or rounded as directed. Cement plaster should be done in square or strips and shall be done from top to downward.

FLOATING COAT: The floating coat over the plaster shall be so done whenever specified in the item with neat cement to finish the surface so that cracks, crevices etc. are not developed in the plaster.

DEWATERING: The item rate shall include bailing or pumping out all water if accumulated during the progress of the work either from seepage, springs, rain or any other cause.

WATERING AND CURING: All the plaster work shall be kept damp continuously for a period of 14 days to prevent excessive evaporation. In hot and dry weather matting or gunny bag may be hung on the outside of the plaster in the beginning and kept moist.

THE RATE INCLUDES FOR:
1. Erecting, dismantling and removing the scaffolding.
2. Preparation of the surface to receive the plaster of specified thickness and number of coats, curing etc.
3. Labour, materials, tools and plants used to complete the work.

MODE OF MEASUREMENT: The measurement shall be for unit square meter of cement plaster. The plaster shall be measured for it length, breadth / depth.
MODE OF PAYMENT: The contract rate shall be for unit square meter of plaster.

25.13 SPECIFICATIONS FOR STEEL REINFORCEMENT

GENERAL;

Steel reinforcement bars, if supplied or arranged by the contractor, shall be either plain round mild steel bars grade — | or medium tensile steel bars as per IS: 432 or hot rolled mild steel and medium tensile deformed as per 1S: 1139 or Thermo- mechanically treated (TMT) bars - high yield strength deformed bars as per IS: 1786 as shown and specified on the drawings and shall be manufactured by M/s SAIL or TISCO or RINL only and shall be rolled from their own plants and from virgin material. Materials manufactured by their authorized conversion agents and re- rollers shall not be accepted. Documentary evidence of purchasing steel produced from these manufacturers and their manufacturing test certificate shall be submitted.
The third party test shall be carried out as directed in line with the relevant Indian standards and cost of which shall be included in the item rate and no separate payment shall be made on account of this. Wire mesh or fabric shall be in accordance with IS; 1566. Substitution of reinforcement will not be permitted except upon written approval from Engineer-In-Charge.

SCOPE:
This specification covers the general requirements for quality, storage, bending and fixing of reinforcement.

APPLICABLE CODES AND SPECIFICATIONS:

The relevant IS specification, standards and codes given below are made a part of this specification. All standards, specifications, code of practices refer to herein shall be the latest edition including all applicable amendments, revisions and additional publications.

SI. No.	IS Code	Particulars
1.	IS: 432 (Part I)	Mild Steel and Medium Tensile Steel bars and Harddrawn Steel Wires for concrete reinforcement
2.	IS: 432 (Part II)	Mild Steel and Medium Tensile Steel bars and Harddrawn steel wires forconcretere inforcement
3.	IS: 1139	Specification for Hot Rolled Mild steel, Medium steel andHYSD bars for concrete reinforcement
4.	IS: 1200 (Part VIII)	Method of Measurement of Building and Civil Engineering work (Steel and Iron works)
5.	IS: 1566	Hard drawn Steel Wire fabric for concrete reinforcement
6.	IS: 1599	Method for Bend Test
7.	IS: 1608	Method ofTensile Testing of Steel Products
8.	IS: 1786	High Strength Deformed Steel and Wires for concrete reinforcement
9.	IS: 2502	Code of Practice for Bending and Fixing of Bars for concrete reinforcement

STORAGE:

The reinforcement shall not be kept in direct contact with the ground but stacked on top of an arrangement of timber slippers or the like. The reinforcement shall be coated with cement wash before stacking to prevent scale and rust. Fabricated reinforcement shall be carefully stored to prevent damage, distortion, corrosion and deterioration.

QUALITY:

All steel shall be of grade-l quality unless specifically permitted by the Engineer-In-Charge. No re-rolled material will be accepted. Contractor shall submit the manufacturer's test certificate for steel.

Random test on steel supplied by the contractor may be performed by owner as per relevant IS. All cost incidental to such tests shall be at the contractor's expenses. Steel not conforming to the specifications shall be rejected.

All reinforcement shall be clean, free from grease, oil, paint, dirt, loose mill scale, loose rust, dust, bituminous material or any other substance that will destroy or reduce the bond. All rods shall be thoroughly cleaned before being fabricated.

Pitted and defective rods shall not be used. All bars shall be rigidly held in position before concreting. No welding of rods to obtain continuity shall be allowed unless approved by the Engineer-in-charge. If welding is approved the work shall be carried out as per IS: 2751, according to best modern practices and as directed by the Engineer-in-charge.

In all cases of important connections, test shall be made to prove that the joints are of the full strength of the bar welded. Special precaution as specified by the Engineer-in-charge shall be taken in the welding of cold work reinforcing bars and bars other tan mild steel.

LAPS:

Laps and splices for reinforcement shall be as shown on the drawings. Splices and adjacent bars shall be staggered and the location of all splices except those specified on the drawings shall be approved by the Engineer-in-charge. The bars shall not be lapped unless the length required exceeds the maximum available length required of bars at site.

BENDING:
All bars shall be accurately bent according to the size and shape shown on the detail working drawing / bar bending schedule. They shall be gradually bent by machine or approved means.

Reinforcing bars shall not be straightened and re-bend in the manner that will injure the material. Bars containing cracks and splits shall be rejected. They shall be bent cold except bars above 25 mm in diameter which may be bent hot, if specifically approved by Engineer-in-charge.

Bars which depend for their strength on cold working shall not be bent hot. Bars bent hot shall not be heated beyond cherry-red color (not exceeding 645° C) and after bending shall be allowed to cool slowly without quenching.

Bars incorrectly bent shall be used only if the means used for straightening and re- bending be such as shall not in the opinion of the Engineer-in-charge injure the material.

No reinforcement bars shall be bent when in position in the work without approval, whether or not it is partially embedded in hardened concrete. Bars having kinks or bends other than those required by the design shall not be used.

FIXING:
The reinforcement shall accurately be fixed by any approved means and maintained in the correct position as shown in the drawing by use of blocks, spacers and chairs as per IS: 2502 to prevent displacement during placing and compaction of concrete.

Bars intended to be in contact at crossing point shall be securely bound together at all such points with 1.6 mm diameter annealed soft iron wire.

The vertical distance required between successive layers of bars in beams or similar members shall be maintained by provision of mild steel spacer bars at such intervals that the main bar do not perpetually sag between adjacent spacer bars.

COVER TO REINFORCEMENT:
Unless indicated otherwise on the drawing, clear concrete cover for reinforcement (exclusive of plaster or decorative finish) shall be as per the provisions of IS: 456.

INSPECTION:
Erected and secured reinforcement shall be inspected and approved by the Engineer-in-charge prior to placement of concrete.

MODE OF MEASUREMENT:
The actual quantity of reinforcement bars embedded in concrete as specified in the drawing and as approved by the Engineer-in-charge irrespective of the level or height at which the reinforcement bars are placed shall be measured for payment.

The reinforcement bars shall be measured in length nearest to a centimeter for different diameters and their weight shall be calculated based on the standard weights as per Indian Standard.

Wastage, unauthorized overlap and annealed steel binding wires shall not be measured for payment.

Pins, chairs and spacers wherever required shall be provided As directed by the Engineer-in-charge and measured separately and paid for.

The rate for reinforcement item shall include the cost of labour and materials required for all operations described above including transportation, cleaning, straightening, cutting, bending, placing in position and binding of reinforcement bars and wastage, etc.

25.14 SPECIFICATIONSFOR CERAMIC TILE FLOORING AND DADO

SCOPE:
The work covered under this specification consists of providing and laying at all levels and floors ceramic tiles in flooring, skirting and dado in accordance with these specifications and relevant drawings.

APPLICABLE CODES AND SPECIFICATIONS :

The relevant |.S. specifications, standards and codes given below are made apart of this specification. All standards, specifications, code of practices referred to herein shall be latest edition including all applicable amendments, revisions and additional publications.

List of Indian Standards.

No.	I.5.No.	1.5. Particu ars
1.	I.S. 777	Specification g lazed earthen ware wa ti es.
2.	I.S. 1200 (Part-XI)	Method of measurement building and civil engineering works.
3.	I.S. 13753	Specification g azed earthen ware wa ti es.
4.	I.S. 13754	Specification g azed earthen ware wa ti es.
5.	I.S. 13755	Specification g azed earthen ware wa ti es.
6.	I.S. 13756	Specification ga zed earthen ware wa ti es.

CERAMIC TILE FLOORING :
Ceramic tiles shall be of specified size, best quality and of approved make and colour.
All the material shall be obtained form one source only. The tiles shall be sound hard well and evenly glazed, free from twist and with fine and sharp edges.

Specified makes of tiles shall be brought for the approval and samples of tiles shall be first got approved by the Engineer-In-charge and all the tiles which shall be used in the work shall strictly conform to the approved sample otherwise all the tiles will be rejected.

The surfaces where the tiles are to be laid shall be thoroughly hacked, joints of masonry raked, cleaned of all mortar scales, concrete lumps, loose materials etc. and washed to remove mud, dirt etc. from the surfaces.

Unless and until the surface is approved by Engineer-In-charge laying of tiles in flooring or dado shall not be started.

The prepared surface shall be thoroughly drenched with water. The glazed tiles and all specials shall be soaked in water for a minimum period of 6 hours before use.

A bedding of cement mortar (1:3) and 20 mm thick for flooring shall be laid evenly to levels or slope as directed.

The glazed tiles shall then be laid on the bedding with a backing of thin cement paste. All tiles shall be truly and evenly set and pressed in position to obtain uniform plane surface. The tiles shall be close jointed and all joints shall be uniform and run in perfect straight lines. The joints shall be slaggered or continuous as directed.
The other specials like corner edges, elephant foots, bull eyes etc. shall be used at the proper place wherever required and as directed.
The entire finished surface shall thoroughly be cleaned to remove all cement stains etc.
The joints shall be then pointed with a neat cement of matching colour. The flooring shall be kept wet for 7 days.
The flooring shall be thoroughly cleaned with suitable hydrochloric acid before handing over.

DADO:
The prepared surface-shall be plastered with cement mortar (1:3) to get a backing of 20 mm thick. The plastered surface shall be even, uniform and true to plumb.

The white glazed / ceramic tiles shall be fixed in position with a backing of cement paste.

The specifications for workmanship regarding joints, specials, cleanings, paintings, curing etc. shall be exactly similar to ceramic tile flooring.

MODE OF MEASUREMENT :

Length and breadth of flooring shall be measured correct to a centimeter before laying skirting, dado or wall plaster. In flooring wherever coves are used at the junctions the length and breadth shall be measured between the lower edges of the coves. No deductions shall be made for opening not exceeding 0.2 square metre. Length and height of skirting/ dado shall be measured along the finished face of the skirting/ dado correct to a centimeter. In case of skirting height shall be measured correct to 5 mm. The area of flooring / skirting/ dado shall be calculated in square metre correct to two places of decimal. The specials such as coves, cornices, beads etc. shall be measured separately and paid for in running metre.

The rates shall include the cost all material and labour involved in all the operations described above.

25.15 SPECIFICATIONS FOR VITRIFIED TILE FLOORING, DADO / SKIRTING / FACIA
MATERIALS:
Vitrified Tiles: The tiles shall be of approved make like Marbonite / Granamite or equivalent and shall generally conform to the approved standards. They shall be flat and true to shape, free from cracks, crazing spots, chipped edges and corners. Unless otherwise specified, the nominal sizes of tiles shall be as under:

The tiles shall be square or rectangular of nominal sizes such as: 600 x 600 mm; 900x 900 mm or as per tender schedule / drawings or as directed by the Engineer- in- Charge. Thickness shall be as per recommendations of the approved manufacturers.

Technical specifications of the tiles shall be generally conforming to the following standards:

TECHNICAL SPECIFICATIONS FOR VITRIFIED TILES

NO	PROPERTY	EXPECTED STANDARDS
1	Deviation in length	(+/-) 0.6%
2	Straightness of sides	(+/-) 0.5%
3	Rectanguarity	(+/-) 0.6%
f4	Surface flatness	(+/-) 0.5%
5	Water absorption	< 0.50%
6	Mohs. hardness	>6
7	Fexural strendth	> 27 N / mm^2
8	Abrasion resistance	< 204 mm^2
9.	Skid resistance (friction coefficient)	>0.4
10	ossiness	Min. 85% reflection

The tiles shall conform to the relevant standards in all respects. Samples of tiles shallbe got approved from the Engineer-in-charge before bulk procurement for incorporation in the work.

PREPARATION OF SURFACE FOR FLOORING:

Following procedure shall be followed:

Sub grade concrete or RCC slab or side brick wall / or plastered surfaces on which tiles are to be laid shall be cleaned, wetted and mopped as specified for terrazzo tile flooring.

Mortar and bedding: Cement mortar for bedding shall be prepared of mix 1:4 or as specified in the schedule of items, to a consistent paste and shall conform to the specification for materials, preparations etc. as specified under cement mortar. The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles. Before spreading the mortar bed the base shall be cleaned off all dirt, scum or laitance and loose materials and well wetted without forming any pools of water on the surface. The mortar of specified proportion and thickness shall then be evenly and smoothly spread over the base by use of screed battens to proper level or slope.

Once the mix is prepared, no further water be added and the same shall be used within one hour of adding water. Apply on an average 20 mm thick bedding of mortar over an area of 1 sqm. at a time over surface of the area for laying tiles, in proper level and allowed to harden sufficiently to offer a fairly good cushion for the tiles to set.

LAYING OF TILES FOR FLOORING:

The tiling work shall be done as per the pattern shown in the drawing or as directed by the Engineer-in-Charge. As a general practice laying of tiles shall be commenced from the centre of the area and advanced towards the walls. Cut tiles, if any, shall be laid along wall with necessary border pattern as shown / directed by the Engineer-in- Charge. Tiling work shall be completed by pressing tiles firmly into place along the wall / floor. A white cement slurry to the back of the tile to be applied to ensure proper and full bedding. The tiles shall be laid on the bedding mortar when it is still plastic but has become sufficiently stiff to offer a fairly firm cushion for the tiles. Tiles, which are fixed on the flooring adjoining the wall, shall be so arranged that the surface on the round edge tiles shall correspond to the skirting or dado. Press gentlythe tile with wooden mallet for even adherence at the back of the tile. Do not use an iron hammer or some heavy material to press the tile.

The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. There shall be no hollows in bed or joints. The joints shall be kept as

close as possible and in straight line. Unless otherwise specified, joint-less tiling shall be done butting the tiles with each other. If joint is specified, the same shall not exceed 1.00 mm. in width. The joint shall be grouted with white / matching colour cement slurry. After fixing the tiles, finally in an even plane or slope, the flooring shall be covered with wet sand and allowed undisturbed for 14 days.

FIXING TILES FOR DADO & SKIRTING / FACIA:
The fixing of tiles on wall surfaces shall be done only after completing fixing of the tiles on the floor. Following procedure shall be followed:

The back of tiles shall be cleaned off and covered with layer of approved adhesive like BAL-ENDURA or equivalent with proper toweling as per manufacturer's recommendations.

The edges of the tiles shall be smeared with the adhesive and fixed on the wall one after the other, each tile being well pressed and gently tapped with a wooden mallet till it is properly fixed in level with the adjoining tiles. There shall be no hollows on the back or in joints. Unless otherwise specified, joint-less tiling shall be done butting the tiles with each other. If joint is specified, the same shall not exceed 1.00 mm. in width. The joint shall be grouted with approved adhesive. The joints shall be kept in straight line or as per the approved pattern. While fixing tiles in dado / skirting work, care shall be taken to break the joints vertically. The top line shall be touched up neatly with the rest of the plaster above. If doors, windows or other openings are located within the dado area, the corners, sills, jambs etc. shall be provided with true right angles without any specials. The contractor will not be entitled to any extra claims on this account for cutting of tiles if required.

The fixing shall be done from bottom of wall to upward without any hollows in the bed of joints. Each tile shall be as close as possible to one adjoining. All tiles faces shall be in one vertical plane.

GROUTING OF JOINTS IN FLOOR / SKIRTING / DADO:

The joints, if specified, shall be cleaned off and all dust and loose particles removed. Joints shall then be filled with approved adhesive like BAL-ENDURA or equivalent grouts. After finishing the grouting process, after 15 minute, wipe off excess grout with a damp sponge and polish the tiles with a soft & dry cloth for a clean surface. The Finished work shall not sound hollow when tapped with a wooden mallet.

CLEANING:
As directed by the Engineer-in-Charge, the tiles shall be cleaned by mild acid (However, Hydrofluoric acid and its derivatives should not be used). After the tiles have been laid in a room or the days fixing work is completed, the surplus cement grout / adhesive that may have come out of the joints shall be cleaned off before it sets. The dado / skirting shall be thoroughly cleaned. In the case of flooring, once the floor has set, the floor shall be carefully washed clean and dried. When drying, the floor shall be covered with oil free dry sawdust. It shall be removed only after completion of the construction work and just before the floor is used.

MODE OF MEASUREMENT AND RATE:
Dado / flooring / skirting shall be measured in sqm correct to two places of decimal. Length and breadth shall be measured correct to 1 cm. between the exposed surfaces of skirting or dado. No deductions shall be made nor extra paid for any opening of area upto 0.1 sqm. The rate shall include all the cost of labour and materials involved.

CLEANING AGENTS FOR VITRIFIED TILES:

Vitrified tiles are resistant to all chemicals (except hydrofluoric acid and its derivatives), hence commercially available detergents and cleaning agents can also be used for regular maintenance. Any spills and stains must be removed immediately. If left dry they may leave stains, which may be difficult to remove completely.

25.16 SPECIFICATIONS FOR PAINTING

SCOPE OF WORK:

The work covered under these specifications consist of furnishing the various types of paints and also the workmanship for these items, in strict compliance with these specifications, which are given in detail here-in-after with the item of schedule of quantities.

MATERIALS:

Paints, oils, varnishes etc. of approved brand and manufacture shall be used.

Ready mixed paints as received from the manufacturer without any admixture shall be used.

If for any reason, thinning is necessary in case of ready mixed paint, the brand of thinner recommended by the manufacturer or as instructed by the Engineer-in- Charge shall be used. Approved paints, oils or varnishes shallbe brought to the site of work by the contractor in their original containers in sealed condition. The materials shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnights work. The materials shall be kept in the joint custody of the contractor and the Engineer-in-charge. The empties shall not be removed from the site of work, till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge.

The contractor shall associate the chemist of paint manufacturers before commencement of work, during and after the completion of work who shall certify the suitability of the surface to receive painting and the paint before use etc.

COMMENCING WORK:

SCAFFOLDING : Wherever scaffolding is necessary, it shall be erected on double supports tied together by horizontal pieces, over which scaffolding planks shall be fixed. No ballies, bamboos or planks shall rest on or touch the surface which is being painted. Where ladders are used, pieces of old gunny bags shall be tied on their tops to avoid damage or scratches to walls.

For painting of the ceiling, proper stage scaffolding shall be erected.

Painting shall not be started until and unless the Engineer-in-Charge has inspected the items of work to be painted, satisfied himself about their proper quality and given his approval to commence the painting work.

Painting, except the priming coat, shall generally be taken in hand after all other builders work, practically finished.

The rooms should be thoroughly swept out and the entire building cleaned up at least one day in advance of the paint work being started.

PREPARATION OF SURFACE:

The surface shall be thoroughly cleaned. All dirt, rust, scales, smoke and grease shall be thoroughly removed before painting is started. Minor patches if any in plastered/form finished surfaces shall be repaired and finished in line and level in C.M. 1:1 and cracks & crevices shall be filled with approved filler, by the contractor at no extra cost to the Department. The prepared surface shall have received the approval of the Engineer-in-Charge after inspection, before painting is commenced.

APPLICATION:
Before pouring into smaller containers for use, the paint shall be stirred thoroughly in its containers. When applying also, the paint shall be continuously stirred in the smaller containers so that consistency is kept uniform.

The external surfaces of the buildings under reference including the R.C.C. Jalli, fins and the panels above and below the window etc. shall be finished in different colours of approved shade. The contractor will make suitable samples at site for Departments approvel before taking up the work in hand and they will be allowed to proceed with the work only after getting Departments approval for the same.

The painting shall be laid on evenly and smoothly by means of crossing and laying off, the later in the direction of the grain in case of wood. The crossing & laying off consists of covering the area with paint, brushing the surface hard for the first time and then brushing alternately in opposite directions two or three time and then finally brushing lightly in direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying will constitute one coat.
Where so stipulated, the painting shall be done with spraying. Spray machine used may be (a) a high pressure (small air aperture) type or (b) alow pressure (large air gap) type, depending on the nature and location of work to be carried out. Skilled and experienced workmen shall be em
Each coat shall be allowed to dry out thoroughly and rubbed smooth before the next coat is applied. This should be facilitated by thorough ventilation.

Each coat except the last coat, shall be lightly rubbed down with sand paper or fine pumice stone and cleaned of dust before the next coat is laid.
No left over paint shall be put back into the stock tins. When not in use, containers shall be kept properly closed.

The final painted surface shall present a uniform appearance and no streaks, blisters, hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moldings etc. shall be left on the work.

In case of cement based paints/primers, the absorbent surfaces shall be evenly damped so as to give even suction. In any weather, freshly painted surfaces shall be kept damp for at least two days.
In painting doors and windows, the putty around the glass panes must also be painted, but care must be taken to see that no paint stains etc. are left on the glass. Tops of shutters and surfaces in similar hidden locations shall not be left out while painting. Perspect covers of electrical switch boxes have to be painted from inside by removing them. Care shall be taken while removing them in position after painting with respective approved paints. In painting steel work, special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.
The additional specifications for primer and other coats of paints shall be asin accordance to the detailed specifications under the respective headings.

Any damage caused during painting work to the existing works/surfaces shall be made good by the contractor at his own cost.

BRUSHES AND CONTAINERS:

After work, the brushes shall be completely cleaned off paint and linseed oil by rinsing with turpentine. A brush in which paint has dried up is ruined andshall on no account be used for painting work. The containers, when not in use, shall be closed, kept air tight and shall be kept at a place free from dust. When the paint has been used, the containers shall be washed with turpentine and wiped dry with soft clean cloth, so that they are clean & can be used again.

MEASUREMENT:

Painting, unless otherwise stated shall be measured by area in square metre. Length and breadth shall be measured correct upto two places of decimal of a metre. No deduction shall be made for opening not exceeding 0.05 sqm. and no addition shall be made for painting to the beading, moulding edges, jambs, soffits, sils, architraves etc. of such openings. In measuring painting, varnishing, oiling etc. of joinery and steel work etc., the co-efficients as in the following table shall be used to obtain the areas payable. The co-efficients shall be applied to the areas measured flat and not girthed in all cases.

In case of painting of door shutter with push plates in plastic laminate, deduction will be made for area of such laminations.

Table of Co-efficients to be applied over areas of different surfaces to get equivalent plain areas.

DESCRIPTION OF WORK	MULTIPLYING CO- EFFICIENTS
I. WOOD WORK : DOORS, WINDOWS ETC.	
1.Panelled or framed and braced doors, windows etc.	
2. Ledged & battened or ledged, battened & braced doors, windows etc.	1.30 (for each side)
3. Flush doors etc	1.20 (for each side)
4. Part panelled and part glazed or gauzed doors.windows etc.	1.00 (for each side)
5 Fully glazed or gauzed doors, windows etc.	0.80 (for each side)
6 Fully venetioned or louvered doors, windows etc.	1.80 (for each side)
7 Trellis (or Jaffri) work one way or two way.	2.00 (for painting allover)
8 Carved or enriched work:	2.00 (for each side)
9 Weather boarding :	1.20 (for each side)
10 Wood shingle roofing:	1.10 (for each side)
11 Boarding with cover fillets and match boarding.	1.05 (for each side)
12 Tile and slate battening:	0.80 (for painting allover)
11. STEEL WORK: DOORS, WINDOWS ETC.	
13 Plain sheeted steel door or windows:	1.10 (for each side)
14 Fully glazed or gauzed steel doors and windows	0.50 (for each side)
15 Partly panelled and partly gauzed or glazed doorsand windows.	0.80 (for each side)
16 Corrugated sheeted steel doors or windows.	1.25 (for each side)
17 Collapsible gates	1.50 (for painting allover)
18 Rolling shutters of inter locked laths.	1.10 (for each side)
III. GENERAL WORKS :	
19. Expanded metal, hard drawn steel wire fabric of approved quality, grill work and gratings in guard bars, balusters, railings, partitions and	1.00 (for painting allover)
20. Open palisade fencing and gates including standards, braces, rails, stays etc. in timber or steel.	1.00 (for painting allover)
NOTE: The height shall be taken from the bottom of the lowest rail, if the palisades do not go below it (or from the lower end of palisades, if they project below the lowest rail) upto the top of palisades but not upto the top of standards, if they are higher than the palisades.	
21. Corrugated iron sheeting in roofs, side cladding etc.	1.14 (for each side)

22. A.C Corrugated sheeting in roofs, side lc1addingetc.	1.20 (for eachside)
23. A.C. Semi-corrugated sheeting in roofs, side cladding etc. or Nainital pattern using plain sheets.	1.10 (for eachside)
24. Wi re gauze shutters including painting of wire gauze.	1.00 (for each side).

EXPLANATORY NOTES ON THE TABLE OF CO-EFFICIENTS.

Where doors, window etc. are of composite types other than those included in para 7.3, the different portions shall be measured separately with their appropriate co- efficients, the centre line of the common rail being taken as the dividing line between the two portions.

Measurements for doors, windows etc. shall be taken flat (and not girthed) over all including chowkhats or frames, where provided. Where chawkhats or frames are not provided, the shutter measurements shall be taken.

Collapsible gates shall be measured for width from outside to outside of gate in its expanded position and for height from bottom to top of channel verticals. No separate measurements shall be taken for the top and bottom guide, rails, rollers, fittings etc.

Rolling shutters of interlocked laths shall be measured for the actual shutter width and the height from bottom of opening to the centre of the shaft. No separate measurements shall be taken for painting guides and other exposed features within or outside the shutter area. The painting of top cover or hood shall however be measured separately.

Co-efficients for sliding doors shall be the same as for normal types of doors as mentioned in the table. Measurements shall be taken outside of shutters, and no separate measurements shall be taken for painting guides, rollers, fittings etc.

Measurement of painting of doors, windows, collapsible gates, rolling shutters etc. as above shall be deemed to include painting all iron fittings in the same or different shade for which no extra will be paid.

The measurements as above shall be deemed to include also the painting of edges, blocks, cleats etc. for which no extra will be paid.

The co-efficients for doors and windows shall apply irrespective of the size of frames and shutter members.

When the two faces of a door, window etc. are to be treated with different specified finishes, measurable under separate items, the edges of frames and shutters shall be treated with the one or the other type of finish as ordered by the Engineer-in- Charge, and measurement of this will be deemed to be included in the measurement of the face treated with that finish.

In the case where shutters are fixed on both faces of the frames, the measurements for the door frame and shutter on one face shall be taken in the manner already described, while the additional shutter on the other face will be measured for the shutter area only excluding the frame.

Where shutters are provided with clearance at top or/and bottom, such openings shall be deducted from the over all measurements and relevant coefficients shall be applied to obtain the area payable.

In case of trellis (or jaffri) work, the measurements shall include the painting of the frame member for which no separate measurements shall be taken. Trellis door or window shutters shall also be measured under terllis work.

Wherever air conditioning grill, lighting, fixtures etc. in false ceiling are painted along with, measurements shall be taken over all without deductions for opening in grills and no extra shall be paid for the grills. If grills, fixtures etc. are not painted, area of fixtures or grills as measured flat (not girthed) shall be deducted when it exceeds 0.05 sqm. individuals. Where walls and ceilings are painted in separate colours, the junctions of two paints shall be brought down on the walls in a straight line by about 6 mm. to 12mm. if so desired, if the junctions of walls and ceilings are not even. Nothing extra shall be paid to the contractor on this account. Beading wherever provided shall not be measured separately but shall be deemed to be included in
the area of false ceiling etc. measured flat (not girthed).

For painting open palisade fencing and gates etc., the height shall be measured from the bottom of the lowest rail, if the palisades do not go below it, (or from the lower end of the palisades, if they project below the lowest rail), upto the top of rails or palisades whichever are higher, but not up to the top of standards when the latter are higher than the top rails or palisades.
In the case of asbestos cement corrugated or semi-corrugated sheeting and iron corrugated sheeting in roofs, side cladding etc., the work shall be measured flat (not girthed) as fixed.
For trusses, compound girders, stanchions, lattice girder and similar work, actual areas will be measured in sqm. and no extra shall be paid for painting on bolt heads, nuts, washers etc. even when they are picked out in a different tint to the adjacent work.
Painting of rain water, soil, waste, vent and water pipes etc. shall be measured in running metres of the particular diameter of the pipe concerned. Painting of specials such as bends, heads, branches, junctions, shoes etc. shall be included in the length and no separate measurements shall be taken for these or for painting brackets, clamps etc.
Measurements of wall surfaces and wood and other works not referred to already shall be recorded as per actual and opening exceeding 0.05 sqm. shall be deducted to get the net payable area. Length and breadth shall be measured correct up to two places of decimal of a metre and area so worked out shall be correct up to two places of decimal of a square metre.
In case the items of work requiring painting are inclusive of cost of painting, the painting carried out shall not be measured separately.

PRECAUTIONS:
All furnitures, lightings, fixtures, sanitary fittings, glazing, floors etc. shall be protected by covering and stains, smears, splashings, if any shall be removed and any damage done shall be made good by the contractor at his cost.

RATES:
Rates shall include cost of all labour and materials involved on all the operations described above and in the particular specifications given under the several items.

25.17 PAINTING PRIMING COAT ON WOOD, IRON OR PLASTERED SURFACES:
PRIMER
The primer for wood work, iron work or plastered surface shall be as specified in the description of the item.

Primer for Wood work / Iron & Steel / Plastered / Aluminium surfaces shall beas specified below:

SN	SURFACES	PRIMER TO BE USED
a	Wood work (hard & soft wood):	Pink conforming to I.S.3536-1966
b	Resinous wood and I wood:	Aluminium rimer
c	Iron & Steel, Aluminium and galvanised Steel work:	Pink chromate primer conforming to I.S. 104-1962.
d	Plastered surfaces, cement brick work, Asbestos surfaces for oil bound distemper and paint:	Cement Primer

The primer shall be ready mixed primer of approved brand and manufacture.
Preparation of surface :
WOOD WORK: The wood work to be painted shall be dry and free from moisture.

The surface shall be thoroughly cleaned. All unevenness shall be rubbed down smooth with sand paper and shall be well dusted. Knots, if any, shall be covered with preparation of red lead made by grinding red lead in water and mixing with strong glue sized and used hot. Appropriate filler material with same shade as paint shall be used where so desired by the Engineer-in-charge.

The surface treated for knotting shall be dry before painting is applied. After the priming coat is applied, the holes and indentation on the surface shall be stopped with glaziers putty or wood putty (for specifications for glaziers putty and wood putty- refer as mentioned here-in-before). Stopping shall not be done before the priming coat is applied as the wood will absorb the oil in the stopping and the latter is therefore liable to crack.

IRON AND STEEL WORK : All rust and scales shall be removed by scrapping or by brushing with steel wire brushes. Hard skin of oxide formed on the surface of wrought iron during rolling which becomes loose by rusting, shall be removed.

All dust and dirt shall be thoroughly wiped away from the surface. If the surface is wet, it shall be dried before priming coat is undertaken.

PLASTERED SURFACE: The surface shall ordinarily not be painted until it has dried completely. Trial patches of primer shall be laid at intervals and where drying is satisfactory, painting shall be taken in hand. Before primer is applied, holes and undulations, shall be filled up with plaster of paris and rubbed smooth.

APPLICATION: The primer shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off as described here-in-before.

Other Details: The specifications for Painting (General) in para 32.2 shall hold good so far as itis applicable.

25.18 PAINTING WITH SUPERIOR QUALITY & FLAT OIL READY MIXED PAINTS ON NEW SURFACE :

PAINT : Ready mixed paints shall be of approved brand and manufacture andof the required shades. They shall conform in all respects to the relevant I.S. specifications.

PREPARATION OF SURFACE:

WOOD WORK : The surface shall be cleaned and all unevenness removed as in para 11.2. Knots if visible, shall be covered with a preparation of red lead. Holes and indentations on the surface shall be filled in with glaziers putty or wood putty and rubbed smooth before painting is done. The surface should be thoroughly dry before painting.

IRON AND STEEL WORK : The primer coat shall have dried up completely before painting is started. Rust and scaling shall be carefully removed by scraping or by brushing with steel wire brushes. All dust and dirt shall be carefully and thoroughly wiped away.

PLASTERED SURFACES : The priming coat shall have dried up completely before painting is started. All dust or dirt that has settled on the priming coat shall be thoroughly wiped before painting is started.

APPLICATION : The specifications mentioned here-in-before shall hold good as far as applicable.

The number of coats to be applied will be as stipulated in the item. The painted surface shall present a uniform appearance1 and glossy/semi glossy finish, free from streaks, blisters etc.

OTHER DETAILS : The specifications for Painting (General) specified here-in- before shall hold good in so far as they are applicable.

25.19 PAINTING WITH SYNTHETIC ENAMEL/SEMI GLOSSY PAINT ON NEW WORK :

PAINT : Synthetic enamel/semi glossy paint of approved brand and manufacture and required shade shall be used for the top coat and an under coat of shade to match the top coat as recommended by the manufacturer shall be used. The paint shall be conforming to IS : 1932-1964.

PREPARATION OF SURFACE : This shall be as per painting with superior quality ready mixed paint as mentioned here- in- before.

APPLICATION : The number of coats including the under coat shall be as stipulated in the item.

UNDER COAT : One coat of the specified paint of shade suited to the shade of the top coat shall be applied and allowed to dry over night. It shall be rubbed next day with the finest grade of wet abrasive paper to ensure a smooth and even surface free from brush marks and all loose particles shall be dusted off. All the cracks, crevices, roughness etc. will be filled with approved putty as per manufacturers recommendations.

TOP COAT : Finishing coats of specified paint of the desired colour & shade shall be applied after the under coat is thoroughly dried. Additional finishing coats shall be applied if found necessary to ensure a proper and uniform semi glossy surface.

OTHER DETAILS : The specifications for “Painting (General)” mentioned here-in- before shall hold good as far as they are applicable.

25.20 PAINTING WITH ACRYLIC EMULSION/PLASTIC EMULSION PAINT.

This shall be polyvinyl based Acrylic/plastic emulsion paint of approved manufacture of the required shade, conforming to 1.S5.5411-1969.

PRIMER: The primer to be used for the painting with acrylic emulsion on cement concrete surfaces, plastered surfaces, A.C. sheets, timber and metal surfaces, if necessary, shall be of approved base and as per recommendations of the manufacturers.
PUTTY: Plaster filler to be used for filling up (putting) uneven surfaces, small cracks and holes etc. shall be of approved compound and as per recommendations of the manufacturers. No oil based putty shall be used. The putty should be made from a mixture of whiting and plastic emulsion paint or as per manufacturers recommendations.

FINISHING COATS : All the finishing coats shall be of matt finish or any other finish as required by the Engineer-in-charge. The number of finishing coats shall be as specified in the item.

MODE OF MEASUREMENT:
All the measurements for payment shall be taken on net surface area actually painted, unless otherwise specified. Deduction will be made fromthe areas for fixtures, grills, ventilation, outlets, electrical boxes and such obstructions not painted, if they are individually more than 0.05 sqm.

JOB REQUIREMENTS:
Acrylic emulsion paint is required to be provided on plastered and concrete surfaces in portions of the building. The Department shall reserve the option to delete or increase quantities in full or part from the scope of contract during progress of work.

All wood surfaces are to be painted with semi glossy synthetic enamel paint with an approved primer. All shades and colours of paints shall be subjected to review and prior approval of Engineer-in-Charge shall be taken before the application.

25.21 Specification for Interlocking Paver block:
GENERAL:
This item shall be carried out generally as described in the relevant item of schedule and as directed by the Engineer — in — charge.
All the materials required for making the paver blocks shall be of approved quality and procured by the contractor at his own cost. The color and pattern of the paver blocks proposed to be used in the work shall be got approved by the Department prior to manufacturing. The thickness of the paver blocks shall be not less than 60 mm. The thickness of the wearing surface shall not be less than 7 mm. The mix proportion of the wearing surface and backing layer shall be got approved prior to start of manufacturing. The blocks shall have a compressive strength of not less than

350 Kg. per squire centimeter. The block shall be procured from the approved manufacturers only. The paver blocks, after manufacturing shall be got inspected by the Departmental Engineers before dispatching the site. The blocks shall be got tested at an approved testing laboratory as specified by the department at the cost of contractor. Manufacturing and testing shall be carried out in accordance with IS: 1247 (Latest revision). The blocks approved by the Engineer-in-charge after duly testing at laboratory shall only be dispatched to the site.

MAKING:
The sub base, either PCC or other, shall be properly cleaned, leveled and prepared tolay the paver blocks. The blocks shall be fixed between the kerb stones and walls or as the case may be at site as per the approved design, pattern and drawings. The blocks shall be fixed over a bed of 50 mm thick sand properly compacted and leveled as required. The interlocking blocks shall be fixed by the skilled and experienced labourers only. Necessary cutting of blocks as required shall be done without any extra cost at the edges, ends of walls, kerb stones and as per site conditions. Noextra cost shall be paid for wastage by the Department. After laying the blocks, the finished job shall be thoroughly compacted/vibrated by

means of mechanical vibration. If any settlement /dislocation is found after vibration, the same will be got rectified without any extra cost. After vibration, the excess sand shall be removed and the pavements shall be made neat and clean. The cost of sand bed shall be deemed to be included in the cost of item and no extra shall be paid for the same.

MODE OF PAYMENT:

The mode of measurements shall be on squire metre bases only. The actual area of work done between kerbstones/walls shall be measured to the nearest centimeter and paid. Any opening /chamber etc. whose area is more than 0.25 square metres shall be deducted.

26 TECHNICAL SPECIFICATION OF INTERNAL ELECTRIFICATION WORKS

The details of internal wiring, the position of fittings, fans, switches and plug sockets etc. are indicated in the layout drawings. The position of light fittings, fans, switchboards etc. indicated n these drawings are only for the guidance of the supplier and the actual position of these shall be mutually decided between the supplier and the purchaser. The supplier shall submit the purchaser of his consideration and approval all runs of wiring and the exact position of all the points and the switch boxes first marked on the points buildings.

All internal wiring shall be done in conformity to the latest Indian standard specification/Rules, code of practice adopted by CPWD and other standard practices prevalent in the part of the country. For the purpose of the specification the terminology used shall be as defined in 1S:732 and I1S:1358 ofr the definition of points wiring. The installation shall be carried out in conformity to all requirements of IE Act,1910 and IE Rules 1956.

a) Ceiling rose in (in case of ceiling and exhaust fan).
b) Ceiling rose or connector (in case of pendants except stiff pendant points)
c) Bank plate (in case of stiff pendant).
d) Socket outlet (in case of socket outlet points)
e) Lamps holder (in case of wall Bracket, batten holder bulk head fitting and similar other fittings)
f) Call bell / buzzer (in case words 'via' the switch shall be read 'via' the ceiling rose / socket outlet for bell push, where no ceiling rose / socket outlet its provided.

The following shall be deemed to be included in the point wiring
g) Switch and ceiling rose are required
h) In case of wall brackets, bulk head fittings, cables as required up to the lamp holders]
i) Bushed conduit for porcelain tubing where cables pass through walls.
i) All wood or metal blocks, boards and boxes, R.J. Boxes sunks or surface type
including those required for fan regulator but excluding those under the distribution board and main control switch.
k) Earth wire from 3 pin socket point to the common earth including connection to the earth dolley.
I) Earth wire of 16SWG/14 SWG/I.G. wire for loop earthing of the fixture
m) All fixing accessories such as clips, nails, screw, plug, rawl plug, wooden plug, round
blocks etc. as required
n) Joint for junction boxes and connecting the same as required
o) Connections to ceiling rose or connection socket outlet, lamp holders, switch, fan regulators etc. The point wiring in case of fan and light points shall mean the distance between the control switch and ceiling rose, connect or back plate, socket outlet or lamp holder depending upon the fittings measured along the runs of wiring irrespective of the number of wires in run. In the case of socket outlet points, the length shall mean the distance between the socket outlet and the tapping point of live wire on the nearest switchboard or junction box, as the case may be. In the
case of exclusive socket outlet circuits wired on 'Joint Box' system of wiring, any junction provided for extending the wiring beyond the point referred to, shall be treated as the nearest tapping point. In case

of call bell / buzzer points the length shall mean the distance between the call bell and the ceiling rose / socket outlet or the bell push (when the ceiling rose / socket outlet is not used). Sub main shall include the earth wire of adequate size main distribution Board up to sub distribution board B.B. such wiring has been classified on the basis of length. For the internal lighting, either surface conduct wiring system or recessed conduit or batten wiring system shall be provided as specific in the bill of quantities and working drawings.

Conduit wiring

For recessed conduit wiring system the conduit shall be placed in the ceiling / columns etc. before the casting of the slab or column. The conduit pipes shall be properly positioned and fixed so that it will not be displaced at the time of concreting. The junction boxes provided shall be so arranged that its cover will be flushed with the finished surface of the ceiling or column. For placing the conduits in the walls, chases of ample dimension shall be made neatly to fix the conduit in a desired manner. The conduit pipe shall be fixed by means of staple or saddles not more than 600mm apart. Fixing of standard bends or elbows shall be avoided and all curves maintained by bending the conduit itself with a long radius will permit easy drawing of the conductors. Suitable inspection boxes shall be provided to permit periodical inspection and removal or replacement of wires if necessary. There shall be mounted flush with the wall with holes in the cover of the box. The switch or regulator box shall be made of metal on all sides except on the front where backlight sheet or Perspex cover painted to match the colours of the wall shall be used | case of surface wiring system. For recessed wiring system, these boxes shall be made flush with the conduit of each conduit or section shall be completed before conductors are drawn in. The entire system of conduit after installation shall be tested or mechanical strength and electrical continuity throughout the earthing of the entire installation shall be carried out in accordance with LE. Rules and standards. The number of wires drawn in the conduits shall not exceed the numbers those specified in Indian standard specification No.732.

Main and Sub distribution Boards:

The position of main boards for lighting and sub distribution board for different buildings are approximate and the exact location shall be given to the successful tenderer at the time of installation. The scope of this specification includes installation of the panel boards and distribution boards and making necessary connections. The installation of the boards shall be done strictly in accordance with the details supplied with the specifications; the instructions supplied by the switchgear manufacturer, Indian standard specifications and H.E. rules. The supplier shall submit the details of installations to the purchaser for his consideration and approval, prior to installation. When the switchboards are wall / column mounted top, they shall, be mounted on a suitable angle iron framework. All the metal supports etc. shall be protected against corrosion. The mounting height for such switchboards shall be such that it can be conveniently operated.

Earthing

Earthing shall generally be carried out in accordance with the requirements of Indian Eletricity Rules and the relevant rules and regulations of electrical supply authorities. The complete earthing work for the installation covered by this specifications shall also be provided taking into account Indian Standard Specification No.I1S:732 and 1S:3043. The earthing system adopted shall also have adequate mechanical strength. The work shall include earthing o noncurrent carrying metallic parts of all the equipment, light fittings, conduit pipes, cable and cable supports and earth strips (the design to be approved by the purchaser) and all the inter connection between the earthing system to a value mutually agreed upon\ between the purchasers and the supplier.

Installation, testing and Commissioning:

The supplier shall be responsible for the installation testing the commissioning of all the equipment and materials supplied by him against this specification. This shall also include the provision of miscellaneous wiring and supports and earthing in compliance with Indian Electricity rules and to he full satisfaction of the Government Electrical Inspector. All small items such as clamps, bolts, nuts, racks, supports, miscellaneous wiring etc. required to make the installation complete, shall constitute the part of major items specified in the bill of quantities and the tenderer should quote for each item taking these into consideration. The responsibility of the supplier shall include receiving all the equipment and materials at site, storage for required period, handling the same at the site of erection, final execution , erections, revisions of equipment, if any, testing and commissioning and handing over the installation complete in all respect to the entire satisfaction of the purchaser's authorized representative. The supplier shall make good of all the damaged equipment and materials during this period at his own expense. The supplier shall submit sample of each and every equipment and materials for the final approval of the purchaser's representatives immediately after the acceptance of offer. All the equipments and materials shall be supplied exactly as per to the approved samples. If at any stage the purchaser brings to the notice of the supplier any discrepancy or defect the supplier shall replace the same at his own expense. The supplier shall render all reasonable assistance to the purchaser in getting the installation approved by the Government Electrical Inspector prior to the energisation and supply necessary drawings, test certificates and both for tests carried out at the factory and site as well as the tests which the inspector may demand. In case any addition of alternations are required, to be made in the installation or in the equipment as per he directive of the Government Electrical Inspector / Local Authorities, he same will have to be carried out by the supplier , at his own expense. The position of light fittings, main board, switches, sockets and routes of pipes and cables shown in the drawings are only indicative. The actual position of these shall be decided at site at the time of execution joints by the supplier and the purchaser's authorized representative. The position of light fittings, pipes and board if required, to be changed / shifted due to the change in the building design etc by the purchaser's authorized representative, the same shall be carried out at no extra cost. All the materials supplied to the contractor according to the Contract condition will be subject to inspection and approval of the officer or his representative from time to time. The contractor will provide all facilities of such inspections free of cost. At the time of inspection, the owner of his representative will have full liberty to reject any such materials, which does not conform to the specification / requirement. No claim for any rejected materials will be entertained by the owner. The contractor will remove all rejected materials from site at his own cost. No surplus materials procured by the contractor will be accepted by the owner. The contractor will be responsible to get the Electric installations cleared by the Electrical Inspector of ODISHA Government. Only the inspection fee will be reimbursed by Department on production of challan copy.

Installation and Maintenance Tools:

The supplier along with the tender shall furnish a complete list of tools, appliances and accessories required for the installations of switch grass, light fittings, pipes cables and wires.

Drawings:

All drawings, test certificates, instructions manuals etc. shall be in English language and all dimensions and weights shall be in metric units. The tenderer shall submit with the tender general arrangement drawings for the installations work, typical methods and cabling and cables supports pipe work and pipe supports, typical methods of earthing and fixing of light fittings earthing etc. as offered by him in the tender. The contractor shall submit for the purchaser's approval all layout, the general arrangement drawings as well as the typical details of all types of installation work in three sets before commencing the manufacture and the site installations work well in advance so that the site work shall not sufer. After obtaining approval of the above drawings the contractor shall supply three sets of the following drawings:

The arrangement and support of conduit pipe

The position of light fittings, switches / plug socket and switch boards
Earthing installations Layout plan showing the entire cable network

On completion of work, the successful tenderer shall supply one set of tracing in transparent linen and five sets of prints of all drawings incorporating all the changes / modifications affected during the execution of the contact. All wiring diagrams shall indicate clearly, the switch board, the runs of main and sub main wiring and the position of all the points with their controls. All the circuits shall be clearly indicated and numbered in a accordance with 1S:375. The technical literatures and operating instructions and the maintenance manuals shall also be supplied in triplicate to the purchasers after the completion of the installations work.

Test:
Manufactures standard tests in accordance with Indian Standard and other standards, adopted shall be carried out on all the equipment and accessories covered by this specification so as to ensure efficient and satisfactory performances of all the components and also the equipment as a whole under working conditions at site. The tenderer shall submit a complete list of all such tests. If the purchaser, if so desired for special tests, to be carried out, under certain conditions the same shall be made by the successful tenderer at his own expenses. All equipment shall be tested at site before the commissioning in accordance with the adopted standard and Indian Electricity Rules. Voltage test shall be carried out on each circuit on completion of wiring and cabling.

Technical Data:
The tederers shall submit with their tender all such technical data, which are required for complete evaluation of the equipment offered. The suppliers shall give complete technical information of the equipment as detailed in Annexure and relevant Indian standards. The tenderer should supply such details of all equipment and materials offered specially with regard to the following.
a) Fuse switch board and distribution boards
b) Light fittings
c) Conduits and the accessories for them
d) Switches / plug sockets
e) Cable and wires

The tender shall give along with his tender the following details:
a) Complete details of earthing electrodes, earthing station and earthing conductors
b) Details of conduit supports
c) Details of all the equipment and accessories to be supplied

Exception to Specifications:
The object of this specification is to have all tenderers quote for equivalent materials and workmanship. It is, however, understood the certain manufacturers may not be able to offer as specified in every case, where the tenderer may find it necessary to deviate from the exact letter and not the intent of the specification, he must specifically state what these deviations may be at the time he submits the tender. All deviations must be grouped in one statement. No deviations other than those includes in the tender will be permitted. These deviations should be listed as per Annexure.

PVC insulated Cables and Wires:
For 415V Distribution system, cables of voltage grade not less than 1000V shall be used. These cables shall be heavy-duty class, PVC insulated and PVC sheathed with aluminium/copper conductors. The

wires used in the lighting installation shall be PVC insulated and PVC sheathed copper wire/aluminium wire in case of conduits wiring and of 660V grade. Wires of different colours shall be made use of for quick\ identification of phase wire / neutral wire etc. All cable of wires shall comply with the requirements regarding the manufacture and testing etc as specified in India Standard Specification 1S: 1554 and 1S:694. The length of cables indicated in the bill of quantities and drawings are only indicative and the Successful tenderer will be paid for the exact length of cables laid at site. No joint shall be allowed in a run of cables, which can be covered by a possible drum length of cables. Fuse switch / switch fuse shall be metalclad dust and vermin proof suitable for use under climatic conditions prevailing at site. Switch fuse / fuse switch units shall comply in general to 1S:1567/4064 with regard to design and constructional / features. The 'ON' and 'OFF' position of the switch handles shall be distinctly indicated and interlocks shall be provided to ensure that the switch cover cannot be opened unless the switch is in the 'OFF position. Means shall, however, be provided for releasing the interlock to permit closing of switch with cover open for testing purposes. Designs with normal conventional position of switch handles, i.e. with switch handle up in the 'ON' position and down | the 'OFF' position shall be preferred. All live parts inside the switch shall be properly surrounded and inter phase barrier shall be provided.Switch fuse / fuse switch units, distribution boards shall be provided with necessary metal fame work so that they can be mounted on wall / columns structure etc. as desired. The panel boards, shall be wall mounted type or floor mounted type as specified in the bill of quantities or drawings. Necessary supporting metal frame of approved design shall be provided for all panel boards. The arrangements of work boards shall be such that the operational handle of the top mounted switches are within the convenient of operators (about 1.2 M from the finished floor level) and proper space shall be provided for the termination of the cable in the switches provided below the bus-bars. The bus-bars within the bus-bar chamber shall be liberally spaced for taking the riser connection. The bus bars with aluminium conductors shall be provided and PVC sleeves of different colour shall be mounted on them for easy identification, Clamped joints for taking the riser connections, instead of bolted type shall be preferred. Two bolted type earthing terminals shall be provided on the switch boards. All individual switches shall be connected with suitable size earth wire to the main earthing terminals of the switchboard. Hanger Board and shock treatment / charts shall be supplied wherever required. At the incoming side of each pen phase, 3-neon type indicating lamps should be provided at the main board.

Switches and Plug Sockets

Switches provided for control of light points shall conform to 1S:1087 and shall be rated for 5A/15A 250V

Ceiling Fans and Exhaust Fans:

Ceiling fans shall conform to Indian standard specification IS: 374-1960. The fans shall be supplied with all standard accessories like regulator and capacitors etc. The performances rating of the propeller fans shall in accordance with stipulations of 1S:2312. All fans shall be robust in design and construction and shall be supplied complete with wall brackets / clamps etc.

Fluorescent Fittings:

All fluorescent fittings supplied shall confirm in general to 1S:1913 and shall be complete with all standard accessories like choke, starter and capacitor etc. The type of enclosure provided for the fittings shall be of that specified in the bill of quantities and the working drawings. The materials of construction for fittings used for outdoor installations and for use in the work anodes shall be such that they shall withstand the atmospheric condition in that area. Lamp holders used shall be fully shock proof, spring-loaded rotary type to ensure positive lamp locking. It should also be not possible to touch live parts of the lamp holder both after the lamp has been taken out and during the insertion or removal of the lamp. The starters shall be designed to give designed starting characteristics that shall promote full lamp life. Starter shall have high mechanical strength and topic proof construction. It should be incorporated with radio suppression capacitor o adequate rating and\ capacity. Power factor improvement capacitors are

provided with hermetically sealed housing to ensure long and trouble fee service. Terminal soldering tango shall be provided for easy electrical connections. The capacitors in general shall confirm to 1S:1569-1963 and P.F improvement up to 0.95 for twin fluorescent light fittings and 0.9 for single fluorescent light fittings is to be maintained.

The ballast provided in the fluorescent fittings shall generally be in accordance to 1S:1534. The ballast should incorporate the following design features.

i) Low working temperature
ii) Correct pre heating current for the electrodes
iii) Proper wave foam
iv) Small in dimensions
v) Correct power supply to the lamp
vi) No hum.
vii) Easy connection leads.

All the metal construction of the fittings shall be such that they shall:
1) Withstand the atmospheric condition prevailing in the area
2) Provide maximum mechanical protection to the tubes and fittings accessories. Assists in maximum and uniform light distribution.
All fittings shall be provided complete with florescent lamps. All lamps shall confirm to
1S:2418.

Incandescent Fittings:
The incandescent fittings shall be supplied strictly as per the details given in the enclosed annexure and bill of quantities, deviation if any regarding design, construction of materials should be specified clearly.

All the metal parts used in construction of the fittings shall have no effect due to dust / fumes / gases likely to exist in the atmosphere. All the bolts, clamps, nuts and guard wire etc shall be galvanized. The wall fittings shall be provided with necessary hooks / clamps / supports etc for fixing the light fittings on wall / ceiling etc as detailed in the bill of quantities and the working drawings.

Light fittings shall be suitable for connection with 19mm dia. Conduit pipe as required. If fittings are to be connected through PVC cables, glands of adequate size and capacity shall be provided.
The lamp holders provided in the fittings shall confirm to 1S:1528.

27. TECHNICAL SPECIFICATION FOR SANITARY & PLUMBING WORKS

27.1 SANITARY INSTALLATIONS
27.1.1 INDIAN WATER CLOSET
GENERAL: The item pertains for providing white or colour glazed vitreous chinaware Indian water closet of size and colour as specified in the schedule including fixing.

MATERIAL: Squatting Pan (Orissa Pattern) is of white or colour glazed vitreous China conforming IS 2556 Part lll. Pan shall have flushing rim and are inlet of self draining type. It shall have weep hole at the following inlet to the Pan. The flushing inlet shall be in front unless otherwise specified. The inside of the bottom of the pan shall have sufficient slope from the front to the outlet and surface shall be uniform and smooth to enable easy and quick disposal while flushing. The exterior surface of the outlet below the flange shall be an unglazed surface which shall have groove at right angle to the axis of the outlet. In

all the cases pan shall have be provided with 100 mm Glazed Vitreous China "P" or 8’ trap with 50 mm water seal and 40 mm size vent harm.

FIXING: The water closet pan shall be placed in position as shown in the drawing. The IWC shall be supported on brick masonry in CM 1:4 or as directed by the Engineer-in-charge. The pan shall be fixed slightly lower than the floor level. If the pan or trap is damaged during handling of fixing, it shall be replaced by the contractor at his own cost. The pan, trap and C.l. pipe shall be jointed in 1:1 Cement Mortar with hemp yarn caulked. The gap between W.C. and floor shall be finished with white/matching cement as directed.

PROTECTION AND FINAL CLEANING: The IWC shall be covered with husk and sand till all the civil
and electrical works are completed and shall be removed and cleaned on completion of civil and electrical works prior to testing and handing over. However the contractor should ensure that the out let is plugged with gunny bags or similar materials to avoid the pipe getting blocked.
THE RATE INCLUDES FOR:
1. Water Closet pan with SCI trap 'P" or °S’ type and jointing in 1:1 cement mortar with hemp yarn caulked.
2. Cutting wall / slab / beam etc. and making all the damage goods to original condition after completion of work.
3. Testing the entire system and rectification of defects, if any.
4. All necessary labour, material and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of W.C. Pan fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of W.C. pan fixed.

27.1.2 EUROPEAN/ ANGLO INDIA WATER CLOSET:

GENERAL: The item pertains for providing white or colour glazed vitreous chinaware European or Anglo Indian water closet with seat and cover of size and colour as specified in the schedule including fixing.

MATERIAL: European type water closet shall be wash down pattern unless otherwise specified.
Water closet shall be vitreous china conforming to 1S 2556 (Part-I & II). The closet shall be of one piece construction and shall have minimum two hole of 6.5 mm diameter for fixing closet to floor. Closet shall have an integral flushing rims of self draining type. Each water closet shall have an integral trap with either *S™ or "P" outlet with and trap shall be uniform and smooth in order to enable an efficient flush. Plastic seat and cover shall be of black colour or as specified, they shall have conformity to 1S2548 Part | & II.

FIXING: The water closet pan shall be placed in position as shown in the drawing. If the pan trap is damaged during handling or fixing, it shall be replaced by the contractor at his own cost. The pan, soil pipe shall be jointed in 1:1 Cement Mortar with hemp yarn caulked. The gap between W.C. and floor shall be finished with white/matching cement and sand as directed. Seat and cover shall be fixed to the Pan by two corrosion resistance hinge with 65 mm shank and threaded to within 25 mm from of flange. Seat shall be fixed in level by providing the washers of rubber with non ferrous or stainless steel washer to bolt.

THE RATE INCLUDES FOR: 1. European type water closet with an integral *P" or °S’ trap, plastic seat cover, etc. jointing in 1:1 cement mortar with hemp yarn caulked. 2. Cutting hole in wall / slab / beam

etc. wherever required. and making all damages good to original condition after completion of work 3. Testing the entire system and rectification of defect if any. 4. All necessary labour, material and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of W.C. fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of W.C. fixed

27.1.3 WASH BASIN:

GENERAL: The item pertains for providing colour or white glazed vitreous chinaware wash basin with or without pedestal of size and colour as specified in the schedule including fixing.

MATERIAL: Wash basins shall be of vitreous china conforming to IS : 2556(Part-1V) of flat back or angle back as specified shall be of one piece construction including combined over flow, basin shall be provided with single or double tap holes of size 28 mm square or 30 mm rounded. Each basin shall have circular waste hole, or 5 sq.cm slot type over flow. Pedestals for wash basin shall be exactly same glazing that of basin. Pedestal shall be capable of supporting the basin and completely recessed at the back to accommodate supply and waste pipes and fittings. The basin shall be supported on pan of C.I cantilever brackets conforming to IS 775. Use of MS angle or Tee Section as bracket is not permitted.

FIXING: The wash basin shall be fixed in position as indicated in the drawing. Basin shall be supported on a pair of C.I brackets which is embedded in cement concrete (1:2:4) block 100 x 75 x 150 mm. Oval shape or round shape wash basins are required to be fixed in RCC platform with stone tapping either fully sunk in stone top or flush with stone topping. The wall plaster on seat shall be cut to rest over the top edge of the basin so as not to leave any gap for water seepage through between wall plaster & skirting of basin. The gap between basin and wall shall be finished with white matching cement.

THE RATE INCLUDES FOR: 1. Wash Basin with pair of C.| bracket as required. 2. Cutting hole in wall / slab / beam etc. wherever required and making all damages good to original condition after completion of work. 3. All necessary material, labour and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of wash basing fixed.
MODE OF PAYMENT: The measurement shall be for each unit of wash basin fixed.
27.1.4 URINAL:

GENERAL: The item pertains for providing colour or white glazed vitreous chinaware urinal in single or range (1, 2 & 3) and size as specified in the schedule with necessary fittings and appliances including fixing.

MATERIAL:

BOWL TYPE (WITH FLUSHING RIM): Urinal basin shall be flat back or corner wall type lipped in front. The vitreous china conforming to IS 2556 (Part VI). Urinal shall have and integral flushing rim and inlet or supply horn for connecting flush pipe. Flushing rim and inlet shall be of the self draining type. At bottom of basin and outlet horn for connecting outlet shall be provided. The inside surface of the urinal shall be uniform and smooth throughout to ensure efficient flushing.

BOWL TYPE FLAT BACK WITHOUT FLUSHING RIM: They shall be of vitreous china conforming to 1S:2556 (Part-VI) constructed in one piece with providing slot or alternative fixing arrangement at flat back and where the integral flushing rim is not provided, they shall be provided with ridges inside the bowl to divert towards the front line of the urinal.

STALL URINALS: The stall urinal and its screen shall be glazed fire clay conforming IS :771 (Part-I, Sec-2). The inside surface of stall and screen shall be regular and smooth throughout to ensure efficient flushing.

CP BRASS FLUSH PIPE: The flushing arrangement to urinals for single or in range shall be of CP brass with CP brass spreader of 15 mm dia conforming to IS : 407. The capacity of flush pipe for urinal in a range shall be as follows:

Nos. of urinals in range	Capacity of flush tank	Size of C.P. brass Flush pipe	
		Main	Distribution
One	5 litres	15mm	15 mm
Two	10 litres	20mm	15 mm
Three	10 litres	25mm	15 mm

FIXING:
BOAL TYPE FLAT BACK URINAL WITHOUT FLUSHING RIM (Single or Range): Urinal shall be fixed in position by using raw plug, wooden plug, C.P screws etc. It shall be fixed at height of 65 cm from the standing level to the top of the lip of urinal or as directed by the Engineer-in-charge. Each urinal shall be connected with 32 mm size waste pipe which shall discharge into channel or a floor trap.

STALL URINALS: The lip of the stall urinal shall be flush with the finished floor level. The stall urinal shall be laid over a fine sand cushion on average 25 mm thickness. The gap between wall surface, finished floor level and urinals shall not be more than 3mm and filled with water proofing plastic compound.

CP BRASS FLUSHING ARRANGEMENT: The flushing arrangement to urinal in single or range shall be of CP brass from 25 mm dia to 15 mm dia and CP brass spreader of 15 mm size to each urinal including the cost of CP brass elbows, tees, coupling, crosses, clamps, clips, union, CP brass check nut and screws etc.

THE RATE INCLUDES FOR:

1. Glazed Urinals (single or in range) and CP brass pipe flushing arrangement including the cost of jointing material. 2. Cutting hole wherever required and making all damage good to original condition after completion of work. 3. Testing the entire system and rectification of defects if any. 4. All necessary materials, labour and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of urinal set (single or range) fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of urinal set (single or range) fixed.

27.1.5 DIVISION PLATE / PARTITION PLATE:

GENERAL: The item pertains for providing white or colour glazed vitreous chinaware division plate of size and colour as specified in the schedule including fixing.

MATERIAL: Division plate shall be white or colour glazed of size as specified in the schedule, and shall conform to 1S .2556 PART VI.

FIXING: Division plate shall be fixed vertically in position at proper height with expandable anchor fasteners, CP brass screws, wooden plugs etc.

THE RATE INCLUDES FOR: 1. Glazed division plate including the cost of CP brass screws, wooden plugs, expandable anchor fasteners etc. 2. All necessary labour, material and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of division plate fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of division plate fixed.

27.1.6 PVC WATER INLET CONNECTION:

GENERAL: The item pertains to providing colour or white PVC water inlet connection for cistern and wash basins.

MATERIAL: PVC water inlet connection shall conform to IS specifications and shall be of standard pattern with nylon insulation of minimum 450 mm long with CP brass check nut at both the end and shall be able to withstand the testing pressure of 1 MPa (10 kg/sg.cm.)

FIXING: The PVC water inlet connection shall be fixed in position as indicated in the drawing or as directed by the Engineer-in-charge for flushing cistern and wash basins.

THE RATE INCLUDES FOR: 1. Supplying and fixing of PVC water inlet connection. 2. All necessary labour, material and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of water inlet connection fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of PVC water inlet connection fixed.
27.1.7 STAINLESS STEEL SINK:

GENERAL: Item includes providing the stainless steel sink with or without drain board of size as specified in the schedule including fixing.

MATERIAL: The sink shall be manufactured from stainless steel of Salem or equivalent steel conforming to 1S: 13983. Stainless steel sink shall be of one piece construction moulded out of 19 SWG (1mm) stainless steel sheet of grade AISI 304 (18/8) with stainless steel choke — stop strainer (waste coupling) checknuts conforming to IS 13983.

FIXING: The sink shall be fixed in position as indicated in the drawing. The sink shall be placed over the brackets or on the platform. Gap between sink and platform / wall shall be finished with white / matching cement.

THE RATE INCLUDES FOR: 1. S.S. sink with waste coupling cement sand etc. 2. All necessary labour, material and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of s.s. sink fixed.
MODE OF PAYMENT: The contract rate shall be for each unit s.s. sink fixed.

27.1.8 SOAP DISH:

GENERAL: The item includes providing white or colour glazed chinaware type soap dish of size as mentioned in the schedule including fixing.

MATERIAL:. Soap Dish shall be of CP brass or vitreous China on specified and of size, design an approved by the Engineer-in-charge. Soap Dish shall conform to relevant IS standard and should have ISI certification mark.

FIXING: Soap Dish shall be fixed in position by means of C.P brass covers and rawl plug embedded in the wall. Vitreous china Soap Dish shall fixed into the wall with 1:2 cement mortar. The pocket shall be cut in wall, if not left, finishing the gap with white/matching cement.

THE RATE INCLUDES FOR: 1. Soap dish, cement, sand, curing etc. 2. Cutting the pocket if they are not left. 3. All necessary labour, material and the use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of soap dish fixed.
MODE OF PAYMENT: Contract rate shall be for each unit of soap dish fixed.

27.1.9 GLASS MIRROR:

GENERAL: The item providing beveled or plain edges mirror with or without frame of size as mentioned in the schedule including fixing.

MATERIAL: The mirror shall be of superior sheet glass with edges rounded off or beveled, size 600 x 450 mm unless specified in the schedule. It shall be free from flaws, specks or bubbles and thickness plated and should not be less than 5.0 mm. The back of mirror shall be uniformly silver plated and should be free from silvering defects. Silvering shall now have a protective uniform covering of red lid paint, where bevelled edge mirror are not available. Fancy looking mirrors with PVC beading/border or aluminium beading on stainless steel beading/border based on manufacturer's specification, provided nothing extra shall be paid on this account. The backing of mirror shall be provided with 6mm thick marine plywood or environmentally friendly material other than asbestos cement sheet.

FIXING: Mirror shall be fixed in position with 6mm thick marine ply wood backing. It shall be fixed by means of 4 nos. of CP brass screws & caps over rubber washers and ram plug or as per the manufacturer's specification unless specified otherwise the longer side shall be fixed horizontally.

THE RATE INCLUDES FOR: 1. Glass mirror with plywood backing CP screws and CP caps efc. 2. All necessary labour material and the use of tools.

MODE OF MEASUREMENT: The measurement shall be for unit square meter or each unit to glass mirror of size as specified in the schedule.

MODE OF PAYMENT: The contract rate shall be for unit square meter or each unit of glass mirror of size as specified in the schedule.

27.1.10 GLASS SHELF:

GENERAL: The item includes providing glass shelf of size as mentioned in the schedule including fixing.

MATERIAL: Glass shelf shall consist of an assembly of glass shelf frame of size 600 x 125 mm or as specified in the schedule. It shall be with a pair of CP Brass brackets fixed to the wall with CP screws and CP brass rails all-round with guard bar of 6 mm diameter fixed to the glass shelf frame with five numbers CP brass brackets. . The glass shall not be less than 5 mm thick. PVC stainless steel shelf or as per manufacturer's specification and size as specified in the schedule of work shall be provided.

FIXING: The complete accessories shall be fixed to proper line and level as indicated in drawing with 40 mm long CP brass screws, wooden rawl plug, drilling hole and making good the wall to original condition after fixing the glass shelf.

THE RATE INCLUDES FOR: 1. Glass shelf with glass, CP bracket, guard bars, CP screws etc. 2. All necessary labour material and the use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of glass shelf fixed.
MODE OF PAYMENT: The contract rate shall be for each unit glass shelf fixed.

27.1.11 TOWEL ROD/TOWEL RING:

GENERAL: The item includes providing Towel rod / towel ring of size as mentioned in the schedule including fixing.

MATERIAL: Towel rail shall be of C.P brass with two CP brass bracket coated with chromium plating of thickness not less than grade No.2 of IS 4827. The size of rail shall be 600 mm x 20 mm dia unless otherwise specified in the schedule. Towel ring of CP brass with one CP brass bracket with thickness not less than Grade No.2 of IS 4827. The diameter of the ring shall be 175 mm unless otherwise specified in the schedule. The diameter of ring rod shall not be less than 8 mm.

FIXING: The towel rod/ ring shall be fixed to proper line and level as indicated in drawing with CP brass screws, wooden raw plug, drilling hole etc. and making good the wall to original condition after fixing the towel rod.

THE RATE INCLUDES FOR: 1 Towel rod rail'ring CP brackets & screws etc. 2. All necessary labour, material and the use tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of towel rod fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of towel rod fixed.

27.1.12 SHOWER ROSE:

GENERAL: The item pertains to provide chromium plated brass shower rose of specified diameter with accessories including fixing.

MATERIAL: The shower rose shall be CP brass of approved and heavy quality. It's accessories shall conform to IS 1239 Part Il.

FIXING: Shower rose shall be fixed to be water supply pipe line with necessary G.I fittings etc. as required by the Engineer-in-charge. Jointing shall be done with the zine, spun yarn etc. A few turns of fine hemp yarn dipped in linseed oil shall be taken over the threaded ends to obtain complete water tightness. Leaky joint shall be remade to make it leak proof at his risk & cost.

THE RATE INCLUDES FOR: 1. Shower rose, bend, socket, union/nuts, nipple etc. 2. All necessary labour, material and the use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of shower rose fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of shower rose fixed.

27.1.13 BIB TAP, STOP COCK & ANGLE STOP COCKS:

GENERAL: The item pertains to provide chromium plated brass bib tap and stop cock and angle stop cocks, free flanges (if joined to concealed pipe) including fixing

MATERIAL: Bib cock (Bib tap) is drawn off tap with a horizontal inlet and free out let and a stop cock is a valve with a suitable means of connections for insertion in a pipe line for controlling or stopping the flow. These shall be of size 15 mm size or as specified and shall be of screw down type. The closing device shall work by means of disc. Carrying a renewable non-metallic washer with shuts against the water pressure on a seating right angles to the axis of the threaded spindle which operates it. The handle shall be crutch, butterfly or fancy design type securely fixed to the spindle.
The tap shall open anti clock wise direction. Brass bib taps and stop cocks and angle stop cocks shall conform to IS 781, they shall be polished bright. The minimum finished weight of different sizes of bib tap weight of 15 mm size bib tap and stop cock shall be as per table given below. They shall be sound and free from taps, blow hole and fitting. Internal & External surface shall be clean, smooth and free from sand and neatly dressed. Taps shall be nickel chromium plated and thickness of coating shall not be less than service grade No.2 of IS 4827 and plating shall be capable of taking high polish which shall not be easily tarnished.

MINIMUM FINISHED MASS OF BIB TAPS AND STOP VALVES AS PER IS 781:1984 (Reaffirmed 2001)

Size	Minimum Finished Mass			
	bib taps	Stop Valves		
		Internally threaded	Externally threaded	Mixed end
	2	3	4	5
Mm	kg	kg	kg	kg
8	0.250	0.220	0.250	0.235
10	0.330	0.330	0.350	0.325
15	0.400	0.330	0.400	0.365
20	0.750	0.675	0.750	0.710
25	1.250	1.180	1.300	1.250
32		1.680	1.800	1.750
40		2.090	2.250	2.170
50		3.700	3.850	

Every tap complete with its component shall with stand an internally applied hydraulic pressure of 2 MPa (20 kg/sq.cm) maintained for a period of 2 minutes during the period it shall neither leak nor sweat. Leaky joint shall be remade to make it leak proof without any extra cost from contractor.

FIXING: Bib tap stop cock shall be fixed to the pipe line with C.P. brass or G.I. specials, if required or as ordered by Engineer-in-charge. Jointing shall be done with white zinc, spun yarn etc. A few turns of fine hemp yarn dipped in linseed oil shall be taken over the threaded ends to obtain complete water tightness.
THE RATE INCLUDES FOR: 1. Bib tap and stop cock, special etc. 2. All necessary labour, material and the use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of bib tap and stop cock fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of bib tap or stop cock angle stop cock fixed.

27.1.14 FLUSHING CISTERN:

GENERAL: The item pertains to provide white or colour glazed chinaware / PVC / Cast Iron flushing cistern with all inside syphonic fitting including fixing.

MATERIAL: The flushing cistern shall be automatic or manually of rates high level or low level as specified for water closets and urinals. Cisterns shall be of cast iron, vitreous china, enameled pressed steel conforming to IS 774 for Flushing Type and IS 2326 for Automatic flushing cistern and Plastic (IS 7231). Cistern shall be mosquito proof. All working parts shall be designed to operate smoothly and efficiently. The cistern shall have removable covers which shall fit closely on it and be screwed against top displacement where operating mechanism is attached to the cover. This may be made in two section, but the section supporting the mechanism shall be securely fitted or screwed to the body. The outlet fitting of the cistern shall be securely connected to the cistern. The nominal internal diameter of the cistern outlet shall not be less than 32 mm and 38 mm for high level and low level respectively. Length of outlet cistern shall be 37 +/- 2 mm. Ball valve shall be screwed type 15 mm in diameter and shall confirm of IS 1703. The flat shall be made of polyethylene as specified in IS 9762. A high level cistern is intended to operate with minimum height of 125 cm and a low level cistern with maximum height of 30 cm between the top of the pan and under side of the cistern. A G.I chain strong enough to sustain a sudden applied pull of 10 kg or a dead load of 50 kg without any apparent or permanent deformation of the chain rings shall be attached to the ring or hook of the level manually operated high level C.| cistern. In case of low level cistern handle shall be of CP brass. In case of Plastic cistern, operation of cistern shall be through Push Button at the top for dual system and beyond plastic handle. The discharge rate of the cistern as per IS 774 shall be 10 +/- .5 litres 6 second and 5 +/- .5 litres in 3 second for cistern capacity 10 ltrs. and 5 ltrs. respectively. Flush pipe shall be of class "B" G.I pipe of 32 +/- mm diameter for high level. Polyethylene flush pipe shall be low density confirming to IS 3076 or high density confirming to IS 4984 or UPVC pipe confirming to IS 4965 of 40 mm outer diameter. Over flow pipe shall be of G.I. / PVC with mosquito proof jalli of 16 mm dia.

FIXING: The chinaware flushing cistern shall be placed over a pair of C.l. brackets. C.P. brass flush pipe shall be fixed to cistern and W.C. pan using check nut, spun yarn, cement mortar etc. The cast iron flushing cistern shall be placed over a pair of C.l. or G.I. or PVC flush pipe of specified diameter shall be fixed to cistern and W.C. pan by using check nut, white zinc, spun yarn, cement mortar etc. The PVC flushing cistern shall be placed or fixed as recommended by the manufacturer, PVC flush pipe of specified diameter shall be fixed to cistern and W.C. pan by using check nut, white zinc, spun yarn, cement mortar etc.

THE RATE INCLUDES FOR: 1. Supply and fixing flush tank, flush pipe and over flow pipe. 2. Painting all the metallic parts with two coats of flat oil paint over a coat of primer. 3. Cutting hole in wall / slab / beam etc. wherever required and making good the same to original condition after fixing.
4. Cost of jointing materials such as zinc, spun yarn, cement mortar 1:1 etc. 5. Testing the entire system and rectification of defects, if any. 6. All necessary materials, labour and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit of flushing cistern fixed as a whole.

MODE OF PAYMENT: The contract rate shall be for each unit flushing cistern fixed as a whole.

27.1.15 BRACKET:

GENERAL: The item pertains to provide a pair of bracket for wash basin, sink, flushing cistern etc. including fixing.

FIXING: Brackets shall be embedded into or fixed to the wall with plugs, screws, nails etc. Hole shall be made in the wall, if they are not left for fixing the brackets and shall be made good after fixing. The gap shall be filled with 1:2 cement mortar and finishing shall be done with white / matching colour cement.

THE RATE INCLUDES FOR: 1. Supplying and fixing the brackets. 2. Painting brackets with two coats of flat oil paint over a coat of primer. 3. Cutting hole in wall beam etc. wherever required and making good the same to original condition after fixing. 4. All necessary materials, labour and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each pair of bracket fixed included in the items of sink, wash basin, cistern etc. as specified in schedule of quantities.

MODE OF PAYMENT: The contract rate shall be for each pair of bracket fixed.

27.2 WATER SUPPLY SYSTEM:

27.2.1 PVC PIPING WORK FOR WATER SUPPLY:

GENERAL: The item includes supplying of PVC pipes with fittings of specified diameter including laying, fixing, cutting, joining, painting etc. for vent, over flow, waste water pipe line etc.

MATERIAL: The pipes and fittings shall conform to series IV of IS 4985-1978, PVC pipes and fittings shall be free from cracks, flaws and defects and shall be able to withstand a pressure as mentioned in the schedule of quantities.

EXAMINING: Before laying the pipe line, it shall be first examined for damages and cracks, No cracked or damaged pipe and fittings shall be used in the work and they shall be removed from the site by the contractor at his own cost and charge.

CLEANING: All the pipes and fittings shall be thoroughly cleaned with brush and washed if necessary to remove any accumulated stone, soil or dirt inside and out side surfaces.

TRENCHES: The trench bottom shall be carefully examined for the presence of hard objects such as flints, rock projection or tree roots etc. Pipe shall be embedded in sand or soft soil, free from rock & gravel, back fill 160mm above the pipe shall also be of fine sand or soft soil. Pipe shall not be painted. The width of trench shall not be less than outside diameter of pipe plus 300 mm in case of gravel soils. Pipe shall be laid at-least 900 mm below the ground level (measured from the surface of the ground to the top of pipe).

LAYING: The pipes shall be carefully laid straight to the correct alignment in gradients as indicated in the drawing. All the pipe shall be used in standard length as far as possible. Cut length may be used only where it is necessary to make up exact length. The entire length of pipe shall be evenly supported on bed of the trench throughout. Care shall be taken to prevent any sand, earth or other materials from entering into the pipes during laying. At the end of day's work the open end shall be suitably plugged.

FIXING: The pipe line shall be fixed in position as shown in the drawing or as directed by the Engineer-in-charge. The pipe shall be fixed with G.I. clamps not less than 2 mm thick or with suitable PVC clamps, the clamps shall be fixed into the wall with G.I. nails not less than 40 mm long and wooden gutties.

Spacing between clamps for fixing internal piping shall be as given below:

Pipe dia	For Horizontal Runs	For Vertical Runs

20 mm	700 mm	1050 mm
25 mm	750 mm	1125 mm
32 mm	825 mm	1240 mm
40mm	975 mm	1460 mm
50 mm	975 mm	1460 mm

MAKING JOINT: The jointing of pipes and fittings generally shall be done with approved make cement solvent including making surface rough. The pipe shall be cut to desired length. Care shall be taken that profile or cut surfaces shall not be changed and the fibrous material shall be removed with scraper or knife.

DETACHABLE JOINT: Detachable joints shall be made where pipes of different materials have to be jointed or as specified in the schedule. The flanges are first pushed over the pipe ends and jointing shall be made by cement solvent.

PAINTING: If mentioned in schedule of work, the exposed pipe line shall be painted with two coats of approved oil paint of matching colour over a coat of primer. Underground pipe line shall not be painted.

DEWATERING: In case of underground pipes, the contract rate shall include bailing or pumping out all the water till completion or work if accumulated during the progress of work either from seepage, springs, rain or any other cause.

TESTING: Please refer clause

THE RATE INCLUDES FOR: 1. Supplying of PVC pipes and fittings of specified diameter. 2. Laying and cutting the pipe wherever necessary and wastage. 3. Fixing the pipe line with G.I. clamps not less than 2 mm thick and G.I./M.S. nails length not less than 40mm or with PVC clamps, screws, wooden gutties etc. 4. Making the solution joint, painting the pipe line if mentioned in schedule of quantities. 5. In case of underground piping, dewatering till completion of work. 6. All necessary materials, labour and use of tools.

MODE OF MEASUREMENT: The measurement shall be for unit running meter length of pipe line laid of fixed. The measurement shall be taken along the center line of pipe. No measurement shall be recorded separately for fittings, making joint, painting if mentioned in schedule of work and testing.

MODE OF PAYMENT: Unit length of pipe line laid or fixed.
GUN METAL BRASS COPPER ALLOY FULL WAY VALVE:

GENERAL: The item includes provision of full way (gate or globe) valve of specified diameter as mentioned in the schedule including fixing. Full way valve is a valve suitable for controlling or stopping the flow in water supply lines.

MATERIAL: Full way valve shall be of either Brass fitted with a cast iron hand wheel or Gun metal fitted with a C.I. hand wheel or copper alloy as the case may be and shall be of Gate valve type opening full way and of the size as specified conforming to IS 778. The weight of the full way gate valve shall be as per the table given below with a tolerance of 5 percent.

Diameter in mm	Flanged arch (kg)	Screwed arch (kg)
15	1.021	0.567
20	1.503	0.680
25	2.495	1.077

32	3.232	1.559
40	4.082	2.268
50	6.691	3.232
65	10.149	6.804
80	13.381	8.845

FIXING: The valves shall be fixed in position in the pipeline as shown in the drawing or as directed with necessary socket or union, nuts etc. The screwed, flanged joint shall be made with few turns of fine hemp yarn dipped in linseed oil taken over the threaded ends to obtain complete water tightness.

TESTING: The joints shall be tested to a hydraulic pressure of 1 MPa (10 kg/em2) along with the testing of pipe line.

THE RATE INCLUDES FOR: 1 Valve, G.I. fittings, hemp yarn, linseed oil, zinc, fixing and testing. 2. All necessary labour, materials and use of tools.

MODE OF MEASUREMENT: The measurement shall be for each unit valve of specified diameter fixed.
MODE OF PAYMENT: The contract rate shall be for each unit of valve of specified diameter fixed. No extra payment shall be made for G.I. fittings used in fixing of the valve.

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. Notwithstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the SeTP construction and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:

[Deviations from the aforesaid Specifications and Standards shall be listed out here. Such deviations shall be specified only if they are considered essential in view of project-specific requirements.]

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

SCHEDULE — A
STRUCTURE & ORGANISATION

1. General Information

a) Name of Applicant

b) Head Office Address

E-mail Address:
Telephone No. (Landline) Fax No.
Mobile Phone No.

c) Regional Office Address (if any)

E-mail Address:
Telephone No. (Landline) Fax No.
Mobile Phone No.

d) Local Office (if any)

E-mail Address:
Telephone No. (Landline) Fax No.
Mobile Phone No.

[Correspondence between the Authority & the Bidder through the above E-mail should be treated as official and at par with the conventional written communication. Similarly, information/instruction imparted by the Authority to the Bidder through the above telephone number should be treated as official.]

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

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. The certificate issued by Chartered Accountant should bear the Unique Document Identification Number(UDIN).

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
2022-23						
2021-22						
2020-21						
2019-20						
2018-19						

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	Owned Nos./ qnty	Leased/Hired Nos/ qnty	Remarks
1	2	3	4	5

1

2

3

4

5

6

7

8

9

10

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 Executive Engineer/ Executive Officer/ equivalent is to be furnished in support of the above claim.

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
AFFIDAVIT

1. I/We _____certify that all information furnished is true and agree that my / our Tender shall be rejected if I / we am / are found to have misled or made false representation in the form of any of the Schedules of Supplementary information and / or statements submitted in proof of the eligibility and qualification requirements or if I / We have a record of poor performance such as absconding from work, works not properly completed as per contract, in ordinate delays in completion, financial failure and / or has / have participated in previous Tendering for the same work/s and had quoted unreasonable high Tender premium. In addition I/we shall be blacklisted and the work be taken over invoking relevant clause of the General conditions of contract and conditions of particular application.
2. I/We_____ certify that no criminal cases are pending against me/us partners at the time of submitting the Tender.
3. I/We _____ accept that my / our Tender shall be rejected if any criminal cases are pending against me/us/partners of the firm at the time of submitting the Tender.
4, I/We _____ agree that if the history of litigation, criminal cases pending against me/us/Partners furnished by me/us is false, I / We will attend by the action taken by the H&U.D. Deptt., without approaching any court whatsoever for redress. However, I/We shall be given suitable opportunity to offer my/our explanation before action is taken against me/us.
5. I/We _____ certify that the following addenda issued by the Executive Officer, KUCHINDA NAC have been received by me/us and incorporated in my/ our Tender.

1. dated

2. dated

3. dated

(Add if the addenda issued are more than 3)

6. Further I/We _____ certify that no near relatives in the cadre of an Assistant Engineer or above are working in the H & U.D. Deptt., in Govt. Odisha.

7. I/We _____ certify that the technical specification for which I have quoted rate is as per the requirement of the DTCN.

Dated this ... … … … … dayof …… 20.

Signature ... ... … ... ...in the capacity of ... … ... ... … … ... duly authorized to sign the Tender for and on behalf of

(Block Capitals)

Signature of Witness:
Name of Witness:
Address of Witness:

SCHEDULE —-G

FORM OF BANK GUARANTEE
[For Additional Performance Security/ Initial Security deposit]

To
The Executive Officer
_____

WHEREAS:

(A) [_____ name and address of contractor] (hereinafter called the "Contractor") shall execute an agreement (hereinafter called the "Agreement") with the Executive Officer, Kuchinda NAC (hereinafter called the "Authority") for the construction of the work "Extension of Administrative Building with other ancillary structures etc. inside existing SeTP at Kuchinda NAC, Odisha" 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 stating 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 fulfillment, 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.

** § Insert date (in accordance with Clause 23.2 and/or 23.3 of DTCN Section — 2(B).

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 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 it is released earlier by the Authority pursuant to the provisions of the Agreement.

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/ Schedule Bank in Odisha vide Cl. 23.3 and/or 23.4 of DTCN Section — 2(B).

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

3. 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

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

5. 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

Appendix - I

Executive Instruction regarding calling for and acceptance of tenders in e-Procurement in Govt. of Odisha.
Government of Odisha

Works Department

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Office Memorandum

File N0.07556900042013 (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 Executive Officer 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.1.T.:.....
Further details can be seen from thee-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

14.3. 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.

14.4 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	.xis

(b) For Two Cover/Packet:

SI 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	.xis
		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 authorized signatory through Memorandum of Understanding duly registered and enroll 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 inspectionby 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 cannot 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 2" 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 N0.07556900012016—-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 QOdisha 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 Qdisha (https: //tendersodisha.qov.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 tdata.

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 ofaccounting 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

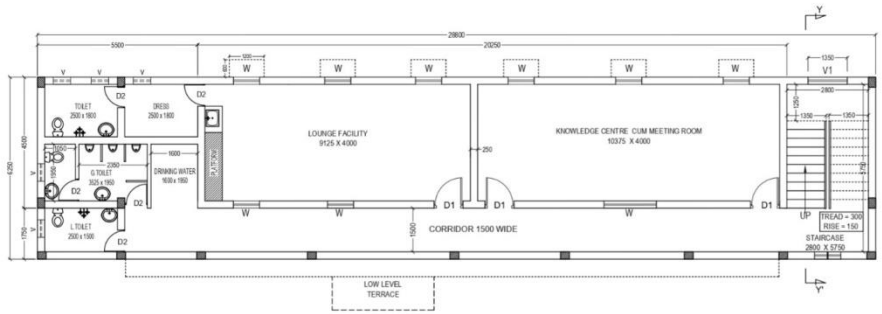
Dt.09.11.2017.
Sd/05.12.2017
E.I.C-cum-Secretary to Govt.

[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]

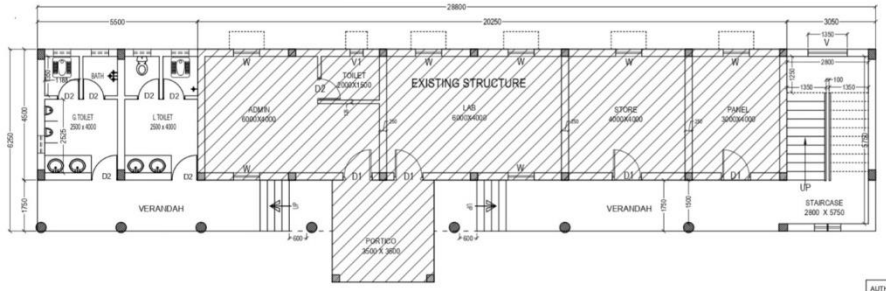
ANNEXURE-1 of Appendix - II

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+l_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.



PROPOSED FIRST FLOOR PLAN



PROPOSED EXTENSION OF GROUND FLOOR PLAN

EXISTING STRUCTURE

PROPOSED EXTENSION

OPENINGS SCHEDULE

SL.NO	ITEM	SIZE	SPECIFICATION
1	D1	1050 x 2100	ALUMINIUM FRAME WITH PLYWOOD SHUTTER
2	D2	750 x 2100	PVC FRAME WITH PVC SHUTTER
3	W	900 x 1350	ALUMINIUM FRAME WITH GLASS SHUTTER
4	W1	1800 x 1350	ALUMINIUM FRAME WITH GLASS SHUTTER
5	V	600 x 600	ALUMINIUM FRAME WITH GLASS LOUVERS
6	V1	1350 x 600	ALUMINIUM FRAME WITH GLASS PANNEL

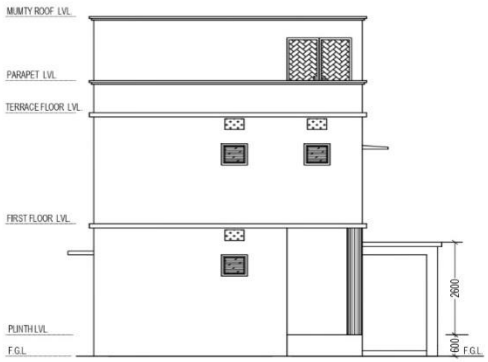
AUTHORITY:
ORISSA WATER SUPPLY AND SEWERAGE BOARD

PROJECT TITLE:
EXTENSION OF ADMIN BUILDING INSIDE SEPTAGE TREATMENT PLANT UNDER FSTP 2.0

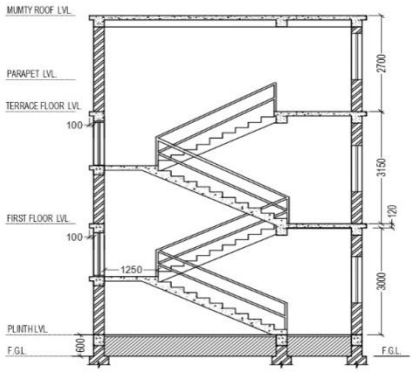
SHEET TITLE:
ARCHITECTURAL DRAWING DETAILS

DRAWING NO.	SETP/ 01	REV - 0	DATE	02-06-2023
SHEET NO	1 OF 4		SCALE	NOT TO SCALE

FRONT ELEVATION

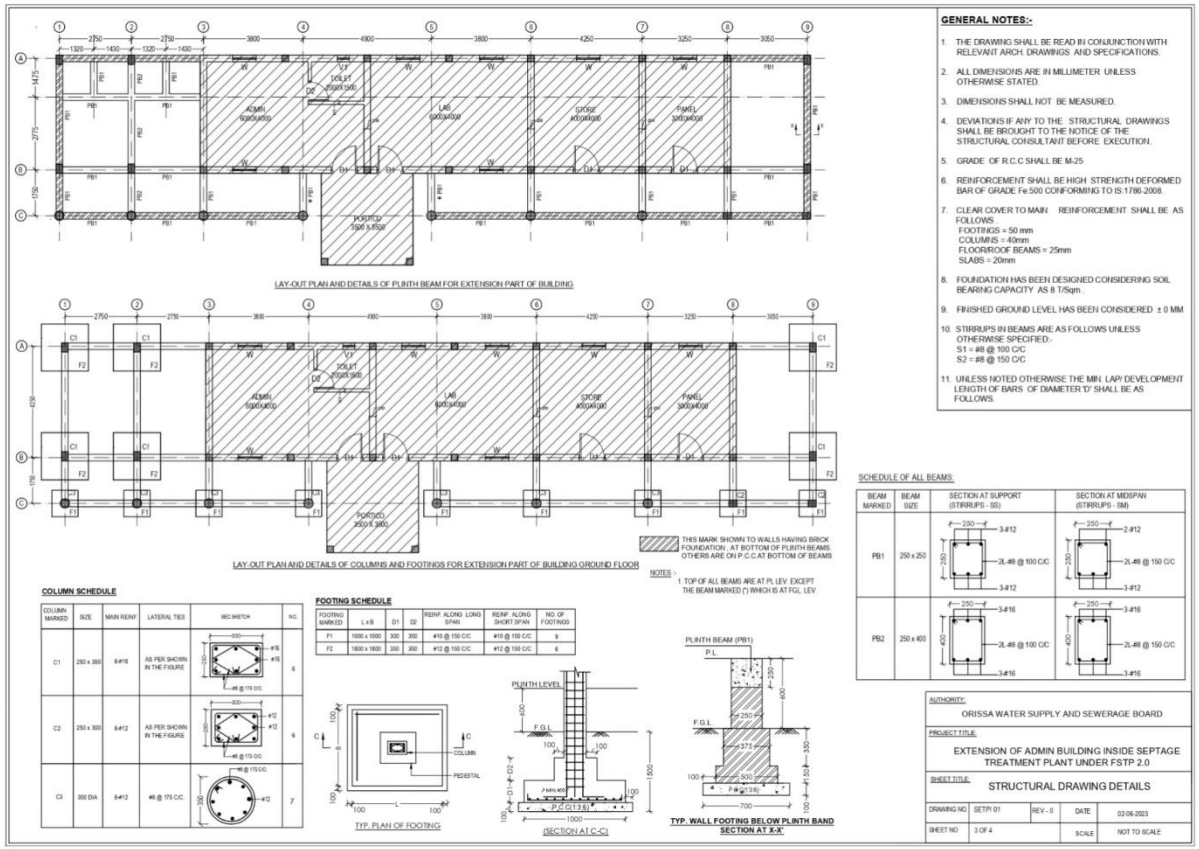


SIDE ELEVATION



SECTIONAL ELEVATION AT Y-Y'

AUTHORITY: ORISSA WATER SUPPLY AND SEWERAGE BOARD				
PROJECT TITLE: EXTENSION OF ADMIN BUILDING INSIDE SEPTAGE TREATMENT PLANT UNDER FSTP 2.0				
SHEET TITLE: ARCHITECTURAL DRAWING DETAILS				
DRAWING NO.	SETP/ 01	REV - 0	DATE	02-06-2023
SHEET NO	2 OF 4		SCALE	NOT TO SCALE



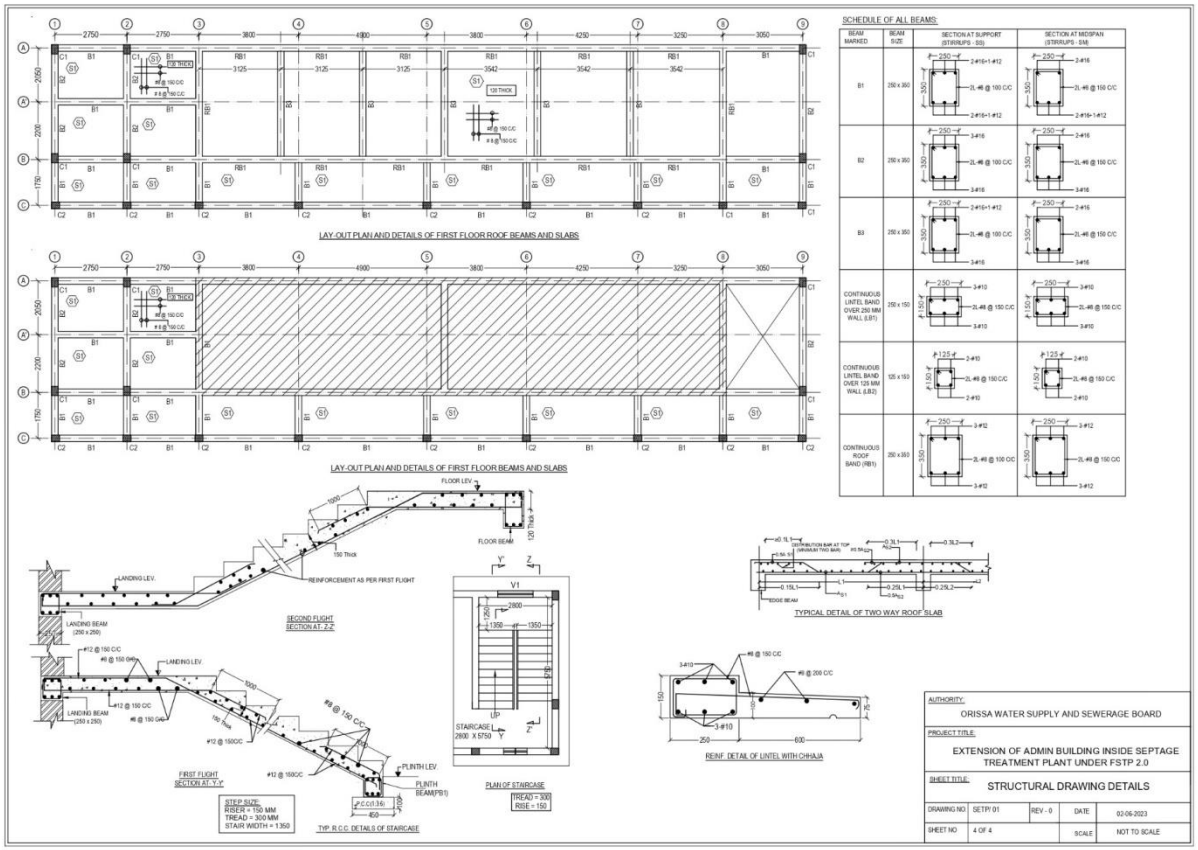
GENERAL NOTES:-

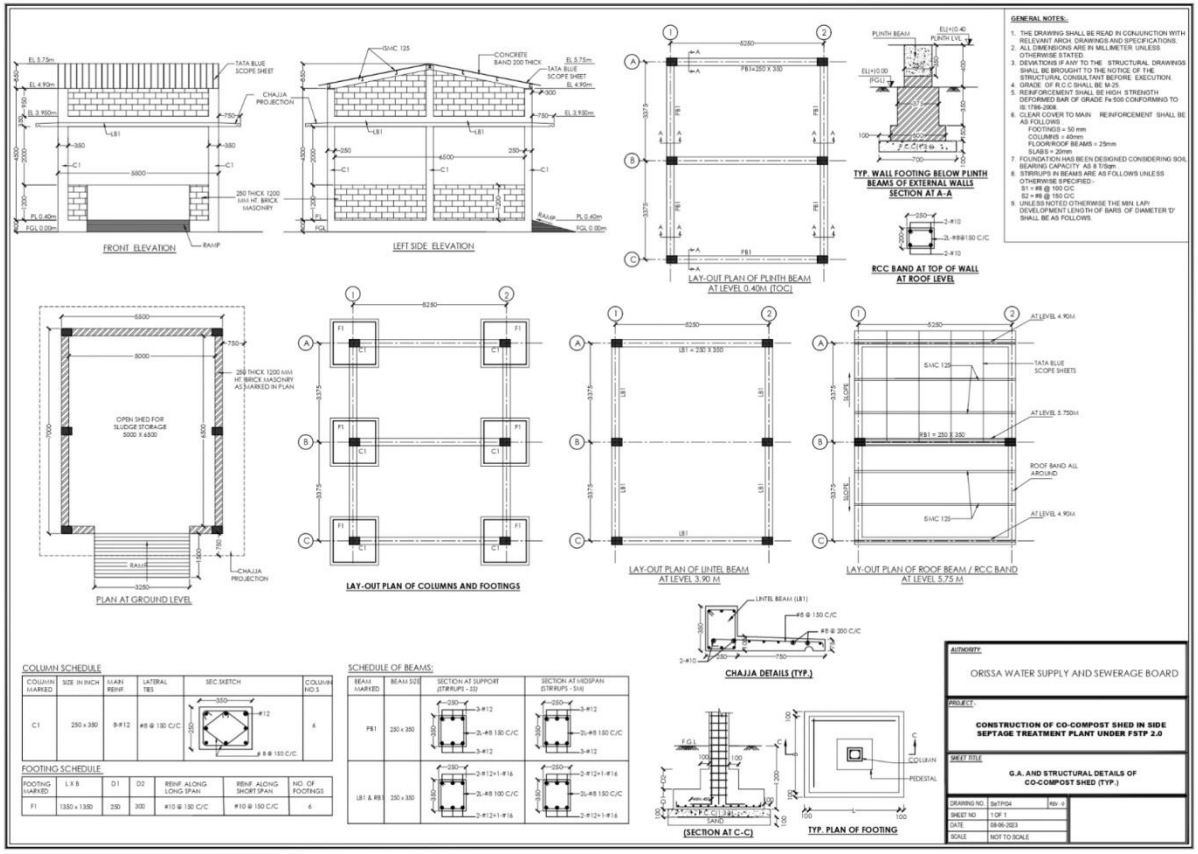
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCH. DRAWINGS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.
3. DIMENSIONS SHALL NOT BE MEASURED.
4. DEVIATIONS IF ANY TO THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE NOTICE OF THE STRUCTURAL CONSULTANT BEFORE EXECUTION.
5. GRADE OF R.C.C SHALL BE M-25
6. REINFORCEMENT SHALL BE HIGH STRENGTH DEFORMED BAR OF GRADE Fe:500 CONFORMING TO IS:1786-2008.
7. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS
   FOOTINGS = 50 mm
   COLUMNS = 40mm
   FLOOR/ROOF BEAMS = 25mm
   SLABS = 20mm
8. FOUNDATION HAS BEEN DESIGNED CONSIDERING SOIL BEARING CAPACITY AS 8 T/Sqm .
9. FINISHED GROUND LEVEL HAS BEEN CONSIDERED ± 0 MM
10. STIRRUPS IN BEAMS ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED:-
    S1 = #8 @ 100 C/C
    S2 = #8 @ 150 C/C
11. UNLESS NOTED OTHERWISE THE MIN. LAP/ DEVELOPMENT LENGTH OF BARS OF DIAMETER 'D' SHALL BE AS FOLLOWS.

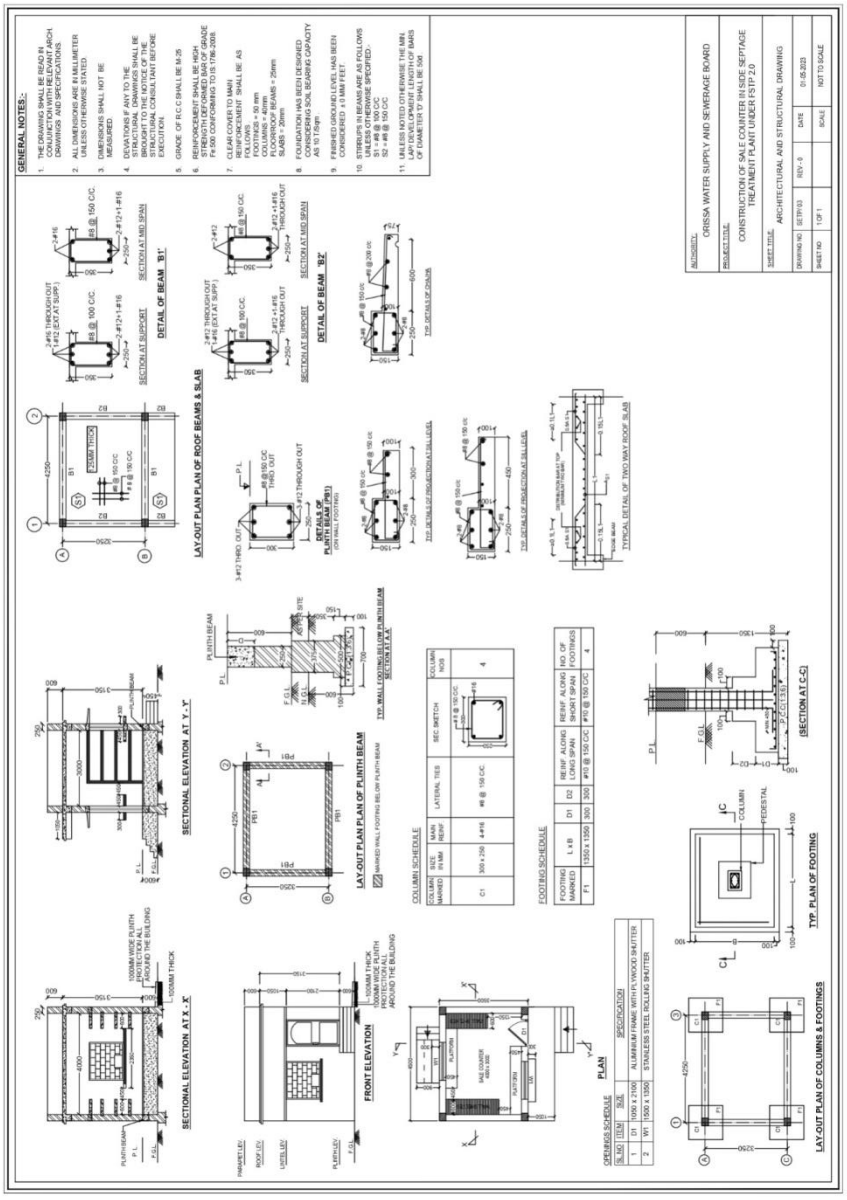
SCHEDULE OF ALL BEAMS:

BEAM MARKED	BEAM SIZE	SECTION AT SUPPORT (STIRRUPS - SS)	SECTION AT MIDSPAN (STIRRUPS - SM)
PB1	250 x 250	3-#12 / 2L-#8 @ 100 C/C / 3-#12	2-#12 / 2L-#8 @ 150 C/C / 3-#12
PB2	250 x 400	3-#16 / 2L-#8 @ 100 C/C / 3-#16	3-#16 / 2L-#8 @ 150 C/C / 3-#16

AUTHORITY:	ORISSA WATER SUPPLY AND SEWERAGE BOARD		
PROJECT TITLE:	EXTENSION OF ADMIN BUILDING INSIDE SEPTAGE TREATMENT PLANT UNDER FSTP 2.0		
SHEET TITLE:	STRUCTURAL DRAWING DETAILS		
DRAWING NO.	SETP/ 01	REV.- 0	DATE: 02-06-2023
SHEET NO	3 OF 4	SCALE	NOT TO SCALE


LAY-OUT PLAN AND DETAILS OF FIRST FLOOR ROOF BEAMS AND SLABS
LAY-OUT PLAN AND DETAILS OF FIRST FLOOR BEAMS AND SLABS
SCHEDULE OF ALL BEAMS:
BEAM MARKED
BEAM SIZE
SECTION AT SUPPORT (STIRRUPS - SS)
SECTION AT MIDSPAN (STIRRUPS - SM)
B1
B2
B3
CONTINUOUS LINTEL BAND OVER 250 MM WALL (LB1)
CONTINUOUS LINTEL BAND OVER 125 MM WALL (LB2)
CONTINUOUS ROOF BAND (RB1)
FLOOR LEV.
FLOOR BEAM
150 Thick
REINFORCEMENT AS PER FIRST FLIGHT
LANDING LEV.
LANDING BEAM (250 x 250)
SECOND FLIGHT SECTION AT- Z-Z'
FIRST FLIGHT SECTION AT- Y-Y'
PLINTH LEV.
PLINTH BEAM(PB1)
STEP SIZE:
RISER = 150 MM
TREAD = 300 MM
STAIR WIDTH = 1350
TYP. R.C.C. DETAILS OF STAIRCASE
PLAN OF STAIRCASE
TREAD = 300
RISE = 150
TYPICAL DETAIL OF TWO WAY ROOF SLAB
REINF. DETAIL OF LINTEL WITH CHHAJA
AUTHORITY:
ORISSA WATER SUPPLY AND SEWERAGE BOARD
PROJECT TITLE:
EXTENSION OF ADMIN BUILDING INSIDE SEPTAGE TREATMENT PLANT UNDER FSTP 2.0
SHEET TITLE:
STRUCTURAL DRAWING DETAILS
DRAWING NO: SETPV 01
REV - 0
DATE: 02-06-2023
SHEET NO: 4 OF 4
SCALE: NOT TO SCALE


FRONT ELEVATION
LEFT SIDE ELEVATION
LAY-OUT PLAN OF PLINTH BEAM AT LEVEL 0.40M (TOC)
TYP. WALL FOOTING BELOW PLINTH BEAMS OF EXTERNAL WALLS SECTION AT A-A
RCC BAND AT TOP OF WALL AT ROOF LEVEL
PLAN AT GROUND LEVEL
LAY-OUT PLAN OF COLUMNS AND FOOTINGS
LAY-OUT PLAN OF LINTEL BEAM AT LEVEL 3.90 M
LAY-OUT PLAN OF ROOF BEAM / RCC BAND AT LEVEL 5.75 M
CHAJJA DETAILS (TYP.)
(SECTION AT C-C)
TYP. PLAN OF FOOTING
GENERAL NOTES:-
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCH. DRAWINGS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.
3. DEVIATIONS IF ANY TO THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE NOTICE OF THE STRUCTURAL CONSULTANT BEFORE EXECUTION.
4. GRADE OF R.C.C SHALL BE M-25.
5. REINFORCEMENT SHALL BE HIGH STRENGTH DEFORMED BAR OF GRADE Fe 500 CONFORMING TO IS:1786-2008.
6. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS
FOOTINGS = 50 mm
COLUMNS = 40mm
FLOOR/ROOF BEAMS = 25mm
SLABS = 20mm
7. FOUNDATION HAS BEEN DESIGNED CONSIDERING SOIL BEARING CAPACITY AS 8 T/Sqm.
8. STIRRUPS IN BEAMS ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED :-
S1 = #8 @ 150 C/C
S2 = #8 @ 150 C/C
9. UNLESS NOTED OTHERWISE THE MIN. LAP / DEVELOPMENT LENGTH OF BARS OF DIAMETER 'D' SHALL BE AS FOLLOWS.
COLUMN SCHEDULE
FOOTING SCHEDULE
SCHEDULE OF BEAMS:
AUTHORITY
ORISSA WATER SUPPLY AND SEWERAGE BOARD
PROJECT :-
CONSTRUCTION OF CO-COMPOST SHED IN SIDE SEPTAGE TREATMENT PLANT UNDER FSTP 2.0
SHEET TITLE
G.A. AND STRUCTURAL DETAILS OF CO-COMPOST SHED (TYP.)
DRAWING NO. SoTP/04 REV. 0
SHEET NO 1 OF 1
DATE 08-05-2023
SCALE NOT TO SCALE



DTCN PART –II (Price Bid)

Percentage BoQ

Tender Inviting Authority: Executive Officer,NAC Kuchinda

Name of Work: Extension of Administrative Building with other Ancillary Structures etc inside Existing SeTP at Kuchinda NAC

Contract No: KCDA/NAC-18/2023-24

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER	NUMBER #	NUMBER #	TEXT #
Sl. No.	**Item Description**	**Quantity**	**Units**	**Estimated Rate in Rs. P**	**TOTAL AMOUNT Without Taxes in Rs. P**	**TOTAL AMOUNT With Taxes**	**TOTAL AMOUNT In Words**
1	**2**	**4**	**5**	**6**	**53**	**54**	**55**
1	**A. CIVIL WORKS**						
2	Earth work in excavation of foundation in all kinds of soil within 50 mtr initial lead and 1.5mtr initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3 mtr in depth and as per direction of the E.I.C.						
3	Admin Building Extension	88.65	cum	228.210	**20230.817**	**20230.817**	INR Twenty Thousand Two Hundred & Thirty and Paise Eighty Two Only
4	Sale Counter	21.98	cum	228.210	**5016.056**	**5016.056**	INR Five Thousand &Sixteen and Paise Six Only
5	Co-Compost shed	31.61	cum	228.210	**7213.718**	**7213.718**	INR Seven Thousand Two Hundred & Thirteen and Paise Seventy Two Only
6	Supplying all materials, labour, T&P and filling in foundation and plinth with sand well watered and rammed including conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per direction of the E.I.C.						

7	Admin Building Extension	50.14	cum	483.600	**24247.704**	**24247.704**	INR Twenty Four Thousand Two Hundred & Forty Seven and Paise Seventy Only
8	Sale Counter	5.62	cum	483.580	**2717.720**	**2717.720**	INR Two Thousand Seven Hundred & Seventeen and Paise Seventy Two Only
9	Co-Compost shed	15.95	cum	483.600	**7713.420**	**7713.420**	INR Seven Thousand Seven Hundred & Thirteen and Paise Forty Two Only
10	Supplying all materials, labour, T&P and providing cement concrete (1:3:6) with 4cm size hard granite metal including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
11	Admin Building Extension	14.92	cum	5262.500	**78516.500**	**78516.500**	INR Seventy Eight Thousand Five Hundred & Sixteen and Paise Fifty Only
12	Sale Counter	5.62	cum	5262.500	**29575.250**	**29575.250**	INR Twenty Nine Thousand Five Hundred & Seventy Five and Paise Twenty Five Only
13	Co-Compost shed	6.52	cum	5262.500	**34311.500**	**34311.500**	INR Thirty Four Thousand Three Hundred & Eleven and Paise Fifty Only
14	Supplying all materials, labour, T&P and providing reinforced cement concrete work of M-25 grade with 20mm and down grade black hard granite crusher broken stone chips including hoisting, laying, watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
15	**Ground floor**						
16	Admin Building Extension	46.54	cum	6233.400	**290102.436**	**290102.436**	INR Two Lakh Ninety Thousand One Hundred & Two and Paise Forty Four Only
17	Sale Counter	10.30	cum	6233.400	**64204.020**	**64204.020**	INR Sixty Four Thousand Two Hundred & Four and Paise Two Only
18	Co-Compost shed	12.28	cum	6233.400	**76546.152**	**76546.152**	INR Seventy Six Thousand Five Hundred & Forty Six and Paise Fifteen Only

19	**First floor**						
20	Admin Building Extension	44.34	cum	6264.000	**277745.760**	**277745.760**	INR Two Lakh Seventy Seven Thousand Seven Hundred & Forty Five and Paise Seventy Six Only
21	**Second floor**						
22	Admin Building Extension	5.42	cum	6434.100	**34872.822**	**34872.822**	INR Thirty Four Thousand Eight Hundred & Seventy Two and Paise Eighty Two Only
23	Supplying all materials, labour, T&P and providing M.S reinforcement for R.C.C work including cutting, bending, binding, and tying the grills and placing in position including cost of binding wire 18 to 20 gauge, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
24	Steel @ 1.0 qtl/ cum of RCC vol.(as per item no 3)						
25	Admin Building Extension	96.30	qtl	8582.100	**826456.230**	**826456.230**	INR Eight Lakh Twenty Six Thousand Four Hundred & Fifty Six and Paise Twenty Three Only
26	Sale Counter	10.30	qtl	8582.100	**88395.630**	**88395.630**	INR Eighty Eight Thousand Three Hundred & Ninety Five and Paise Sixty Three Only
27	Co-Compost shed	12.28	qtl	8582.100	**105388.188**	**105388.188**	INR One Lakh Five Thousand Three Hundred & Eighty Eight and Paise Nineteen Only
28	Supplying all materials, labour, T&P and providing rigid and smooth centering and shuttering for R.C.C works including false work and dismantling them after casting including conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
29	**Ground Floor**						
30	**RCC foundation, footing & column base**						
31	Admin Building Extension	66.56	sqm	256.700	**17085.952**	**17085.952**	INR Seventeen Thousand &Eighty Five and Paise Ninety Five Only
32	Sale Counter	19.64	sqm	256.700	**5041.588**	**5041.588**	INR Five Thousand &Forty One and Paise Fifty Nine Only

33	Co-Compost shed	11.70	sqm	256.700	**3003.390**	**3003.390**	INR Three Thousand &Three and Paise Thirty Nine Only
34	**RCC Column & Beam**						
35	Admin Building Extension	183.11	sqm	1022.000	**187138.420**	**187138.420**	INR One Lakh Eighty Seven Thousand One Hundred & Thirty Eight and Paise Forty Two Only
36	Sale Counter	39.84	sqm	1022.000	**40716.480**	**40716.480**	INR Forty Thousand Seven Hundred & Sixteen and Paise Forty Eight Only
37	Co-Compost shed	65.80	sqm	1022.000	**67247.600**	**67247.600**	INR Sixty Seven Thousand Two Hundred & Forty Seven and Paise Sixty Only
38	**Lintel**						
39	Admin Building Extension	33.30	sqm	529.400	**17629.020**	**17629.020**	INR Seventeen Thousand Six Hundred & Twenty Nine and Paise Two Only
40	Sale Counter	7.70	sqm	529.400	**4076.380**	**4076.380**	INR Four Thousand &Seventy Six and Paise Thirty Eight Only
41	Co-Compost shed	28.94	sqm	529.400	**15320.836**	**15320.836**	INR Fifteen Thousand Three Hundred & Twenty and Paise Eighty Four Only
42	**RCC roof slab, Chaja etc.**						
43	Admin Building Extension	120.32	sqm	676.900	**81444.608**	**81444.608**	INR Eighty One Thousand Four Hundred & Forty Four and Paise Sixty One Only
44	Sale Counter	32.55	sqm	676.900	**22033.095**	**22033.095**	INR Twenty Two Thousand &Thirty Three and Paise Ten Only
45	Co-Compost shed	16.14	sqm	676.900	**10925.166**	**10925.166**	INR Ten Thousand Nine Hundred & Twenty Five and Paise Seventeen Only
46	**Staircase**						
47	Admin Building Extension	19.972	sqm	902.800	**18030.722**	**18030.722**	INR Eighteen Thousand &Thirty and Paise Seventy Two Only
48	**First floor**						
49	**RCC Column & Beam**						
50	Admin Building Extension	57.81	sqm	1226.400	**70898.184**	**70898.184**	INR Seventy Thousand Eight Hundred & Ninety Eight and Paise Eighteen Only
51	**Lintel**						
52	Admin Building Extension	29.4	sqm	635.200	**18674.880**	**18674.880**	INR Eighteen Thousand Six Hundred & Seventy Four and Paise Eighty Eight Only

53	**Roof Slab & Chaja at corridor opening**						
54	Admin Building Extension	191.79	sqm	812.300	**155791.017**	**155791.017**	INR One Lakh Fifty Five Thousand Seven Hundred & Ninety One and Paise Two Only
55	Chaaja	27.08	sqm	812.300	**21997.084**	**21997.084**	INR Twenty One Thousand Nine Hundred & Ninety Seven and Paise Eight Only
56	Roof Beam	70.68	sqm	1226.400	**86681.952**	**86681.952**	INR Eighty Six Thousand Six Hundred & Eighty One and Paise Ninety Five Only
57	**Staircase**						
58	Admin Building Extension	19.30	sqm	1083.300	**20907.690**	**20907.690**	INR Twenty Thousand Nine Hundred & Seven and Paise Sixty Nine Only
59	**Second floor**						
60	**Roof slab**						
61	Admin Building Extension	22.575	sqm	974.800	**22006.110**	**22006.110**	INR Twenty Two Thousand &Six and Paise Eleven Only
62	**Column & Beam**						
63	Admin Building Extension	44.62	sqm	1471.600	**65662.792**	**65662.792**	INR Sixty Five Thousand Six Hundred & Sixty Two and Paise Seventy Nine Only
64	Supplying all materials, labour, T&P and providing brick work with Fly Ash Bricks (23 cm x 11 cm x 8 cm) having crushing strength not less than 75kg/cm² with dimensional tolerance ± 8 percent in cement mortar (1:4) including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
65	**In foundation and plinth**						
66	Admin Building Extension	14.54	cum	5478.500	**79657.390**	**79657.390**	INR Seventy Nine Thousand Six Hundred & Fifty Seven and Paise Thirty Nine Only
67	Sale Counter	3.76	cum	5478.500	**20599.160**	**20599.160**	INR Twenty Thousand Five Hundred & Ninety Nine and Paise Sixteen Only
68	Co-Compost shed	5.09	cum	5478.500	**27885.565**	**27885.565**	INR Twenty Seven Thousand Eight Hundred & Eighty Five and Paise Fifty Six Only

69	Supplying all materials, labour, T&P and providing brick work with Fly Ash Bricks (23 cm x 11 cm x 8 cm) having crushing strength not less than 75kg/cm² with dimensional tolerance ± 8 percent in cement mortar (1:3) including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
70	**In superstructure**						
71	**Ground floor**						
72	Admin Building Extension	21.99	cum	5511.800	**121204.482**	**121204.482**	INR One Lakh Twenty One Thousand Two Hundred & Four and Paise Forty Eight Only
73	Sale Counter	8.99	cum	5511.800	**49551.082**	**49551.082**	INR Forty Nine Thousand Five Hundred & Fifty One and Paise Eight Only
74	Co-Compost shed	12.31	cum	5511.800	**67850.258**	**67850.258**	INR Sixty Seven Thousand Eight Hundred & Fifty and Paise Twenty Six Only
75	**First floor**						
76	Admin Building Extension	72.52	cum	5804.800	**420964.096**	**420964.096**	INR Four Lakh Twenty Thousand Nine Hundred & Sixty Four and Paise Ten Only
77	**Second floor**						
78	Admin Building Extension	20.60	cum	6141.800	**126521.080**	**126521.080**	INR One Lakh Twenty Six Thousand Five Hundred & Twenty One and Paise Eight Only
79	Supplying all materials, labour, T&P and providing 16mm thick cement plaster (1:6) on brickwork including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
80	**Ground floor**						
81	Admin Building Extension	140.43	sqm	219.200	**30782.256**	**30782.256**	INR Thirty Thousand Seven Hundred & Eighty Two and Paise Twenty Six Only
82	Sale Counter	48.98	sqm	219.200	**10736.416**	**10736.416**	INR Ten Thousand Seven Hundred & Thirty Six and Paise Forty Two Only

83	Co-Compost shed	56.54	sqm	219.200	**12393.568**	**12393.568**	INR Twelve Thousand Three Hundred & Ninety Three and Paise Fifty Seven Only
84	**First floor**						
85	Admin Building Extension	481.78	sqm	224.600	**108207.788**	**108207.788**	INR One Lakh Eight Thousand Two Hundred & Seven and Paise Seventy Nine Only
86	**Second floor**						
87	Admin Building Extension	729.978	sqm	230.220	**168055.535**	**168055.535**	INR One Lakh Sixty Eight Thousand &Fifty Five and Paise Fifty Four Only
88	Supplying all materials, labour, T&P and providing 12mm thick cement plaster (1:6) on brickwork including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
89	**Ground floor**						
90	Admin Building Extension	122.1	sqm	153.350	**18724.035**	**18724.035**	INR Eighteen Thousand Seven Hundred & Twenty Four and Paise Three Only
91	Sale Counter	75.50	sqm	153.350	**11577.925**	**11577.925**	INR Eleven Thousand Five Hundred & Seventy Seven and Paise Ninety Two Only
92	Co-Compost shed	69.76	sqm	153.350	**10697.696**	**10697.696**	INR Ten Thousand Six Hundred & Ninety Seven and Paise Seventy Only
93	**First floor**						
94	Admin Building Extension	177.22	sqm	156.960	**27816.451**	**27816.451**	INR Twenty Seven Thousand Eight Hundred & Sixteen and Paise Forty Five Only
95	**Second floor**						
96	Admin Building Extension	395.18	sqm	160.700	**63505.426**	**63505.426**	INR Sixty Three Thousand Five Hundred & Five and Paise Forty Three Only

97	Supplying all materials, labour, T&P and providing 6mm thick cement plaster (1:4) to RCC surfaces finished smooth including closed deep chipping and slurry tratment including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
98	**Ground floor**						
99	Admin Building Extension	73.26	sqm	171.500	**12564.090**	**12564.090**	INR Twelve Thousand Five Hundred & Sixty Four and Paise Nine Only
100	Sale Counter	34.10	sqm	171.500	**5848.150**	**5848.150**	INR Five Thousand Eight Hundred & Forty Eight and Paise Fifteen Only
101	Co-Compost shed	66.86	sqm	171.500	**11466.490**	**11466.490**	INR Eleven Thousand Four Hundred & Sixty Six and Paise Forty Nine Only
102	**First floor**						
103	Admin Building Extension	187.27	sqm	175.700	**32903.339**	**32903.339**	INR Thirty Two Thousand Nine Hundred & Three and Paise Thirty Four Only
104	**Second floor**						
105	Admin Building Extension	28.05	sqm	178.580	**5009.169**	**5009.169**	INR Five Thousand &Nine and Paise Seventeen Only
106	Supplying all materials, labour, T&P and providing Vetrified tiles in floors, treads and landing on 25mm thick bed of cement mortar 1:1 (1 cement:1 sand) joined with neat cement slurry mixed with pigment to match the shades of the tiles etc all complete as per direction of the E.I.C						
107	**Ground floor**						
108	Admin Building Extension	44.28	sqm	1440.900	**63803.052**	**63803.052**	INR Sixty Three Thousand Eight Hundred & Three and Paise Five Only
109	Supplying, fitting & fixing of vitrified floor Tile of size 600 x 600 mm of approved make laid on 20mm thick cement mortar (1:4) & finishing joints with white cement etc. **Sale Counter**	22.59	sqm	1440.900	**32549.931**	**32549.931**	INR Thirty Two Thousand Five Hundred & Forty Nine and Paise Ninety Three Only

110	Supplying all materials, labour, T&P and providing Vetrified tiles in floors, treads and landing on 25mm thick bed of cement mortar 1:1 (1 cement:1 sand) joined with neat cement slurry mixed with pigment to match the shades of the tiles etc all complete as per direction of the E.I.C **First floor**						
111	Admin Building Extension	114.53	sqm	1464.200	**167694.826**	**167694.826**	INR One Lakh Sixty Seven Thousand Six Hundred & Ninety Four and Paise Eighty Three Only
112	Supplying all materials, labour, T&P and providing 25mm thick artificial stone flooring with cement concrete (1:2:4) including punning using 12mm size hard granite chips including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						
113	Co-Compost shed	34.30	sqm	343.100	**11768.330**	**11768.330**	INR Eleven Thousand Seven Hundred & Sixty Eight and Paise Thirty Three Only
114	Supplying all materials, labour, T&P and providing granite tiles in slab, treads and landing on 25mm thick bed of cement mortar 1:1 (1 cement:1 sand) joined with neat cement slurry mixed with pigment to match the shades of the tiles etc all complete as per direction of the Engineer in charge						
115	Admin Building Extension						
116	Groung Floor (Staircase rise and tread)	22.20	sqm	2058.700	**45703.140**	**45703.140**	INR Forty Five Thousand Seven Hundred & Three and Paise Fourteen Only
117	In 1st Floor (Staircase rise and tread & Platform)	24.45	sqm	2081.900	**50902.455**	**50902.455**	INR Fifty Thousand Nine Hundred & Two and Paise Forty Six Only
118	In 2nd Floor (Staircase rise and tread)	22.20	sqm	2106.300	**46759.860**	**46759.860**	INR Forty Six Thousand Seven Hundred & Fifty Nine and Paise Eighty Six Only

119	Supplying all materials, labour, T&P and providing ceramic tiles/granite tiles/chequered tiles in floors, treads and landing on 25mm thick bed of cement mortar 1:1 (1 cement:1 sand) joined with neat cement slurry mixed with pigment to match the shades of the tiles etc all complete as per direction of the E.I.C						
120	**Ground floor**						
121	Admin Building Extension	24.08	sqm	1202.800	**28963.424**	**28963.424**	INR Twenty Eight Thousand Nine Hundred & Sixty Three and Paise Forty Two Only
122	**First floor**						
123	Admin Building Extension	25.00	sqm	1226.100	**30652.500**	**30652.500**	INR Thirty Thousand Six Hundred & Fifty Two and Paise Fifty Only
124	Supplying all materials, labour, T&P and fixing porcelain glazed tiles/ granite tiles/chequered tiles in dados skirting on 12mm thick cement plaster (1:3) jointed with neat cement slurry mixed with pigments to match the shades of the tiles including rubbing and polishing complete as per direction of the E.I.C						
125	**Ground floor**						
126	Admin Building Extension	75.60	sqm	1263.060	**95487.336**	**95487.336**	INR Ninety Five Thousand Four Hundred & Eighty Seven and Paise Thirty Four Only
127	**First floor**						
128	Admin Building Extension	66.99	sqm	1296.480	**86851.195**	**86851.195**	INR Eighty Six Thousand Eight Hundred & Fifty One and Paise Twenty Only
129	**Providing fitting, fixing of Al. door** with anodized Al. door section of 9202 as vertical member, 9201 as top member and 9200 as bottom and middle member with frame section as 9221 with tapered clip No. 4660 and the frame to be completed by means of jointing angle No. 1855 including all cost of labour, T&P, hire charges of drilling machine, labour charges etc. complete including cost of laminated board.						
130	D1 (1.05mx2.1m)						

131	Admin Building Extension	6.62	sqm	6687.990	**44274.494**	**44274.494**	INR Forty Four Thousand Two Hundred & Seventy Four and Paise Forty Nine Only
132	Sale Counter	2.21	sqm	6687.990	**14780.458**	**14780.458**	INR Fourteen Thousand Seven Hundred & Eighty and Paise Forty Six Only
133	**Supplying, fitting & fixing up window (sliding type)** made up aluminium section 9778 as window frame section No. 4095, 4096 and 9777, 3994 as shutter frame with 5mm. thick plain glass as panel fitted with rubber bending including lucking arrangement including all fittings including cost of materials all taxes, labour, T & P including cost of black glass etc complete as per direction of Engineer in Charge.						
134	Admin Building Extension	10.94	sqm	3990.230	**43653.116**	**43653.116**	INR Forty Three Thousand Six Hundred & Fifty Three and Paise Twelve Only
135	Sale Counter	4.05	sqm	3990.230	**16160.432**	**16160.432**	INR Sixteen Thousand One Hundred & Sixty and Paise Forty Three Only
136	Supplying all materials, labour, T&P and providing and fixing in position M.S panelled door double leaved with M.S frame overall size including frame 1980mm Height x 1070mm Width made out of the following materials conforming to relevant Indian Standard specification, Frame: 35x35x6mm MS angle, Shutter stile: Top and bottom rail 25x25x3mm, MS angle door panell: 1.0mm C R sheet panell stiffner covering width of each leaf 19x5mm MS flat - 3nos on each leaf, Hinges size: 100mm - 6nos (3nos on each side) bought out as per ISS, Hold fast: 35x35x6mm, MS angle 175mm length bifurcated at the tip - 3nos on each side, Handle: 19x5mm MS flat fabricated - 4nos, Aldrop: 2nos bought out as per ISS, Tower bolt: 2nos bought out as per ISS, Approximate weight - 54kg including conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the E.I.C						

137	Admin Building Extension	77.18	Kg	70.200	**5418.036**	**5418.036**	INR Five Thousand Four Hundred & Eighteen and Paise Four Only
138	Supplying, fitting & fixing of M.S. window grill of approved design						
139	Admin Building Extension	382.73	Kg	70.200	**26867.646**	**26867.646**	INR Twenty Six Thousand Eight Hundred & Sixty Seven and Paise Sixty Five Only
140	Factory made single leaf rigid FRP(alternately called GRP) sandwich composite door shutter of 32mm thick laminated with two GRP skins with wood grain finish fabricated using UV-stabilised Isopthalic Gelcoat and one layer of 450 gsm E-glass Chopped Strand Mat (CSM) impregnated with orthopthalic palyester resin. The thickness of the skins shall not be less than 1.50mm Expanded Polystyrone(EPS) structural foam panel of 29mm thickness and a density of 20kg/cu.mtr shall be used as core material. Wooden reinforcements made of seasoned sal wood block of cross section not less than 28mmx32mm and also necessary sal wood reinforcements for fitting the metal fittings such as tower bolts, aldrops, handles etc shall be provided. A structural adhesive compatible with (EPS) foam shall be used for bending the core material, the sal wood reiforcements and the skins. The material and process for manufacturing the door shutters shall conform to RV-TIFAC composites Design Centre's standards and specifications and the door shutters tested in conformation to IS: 4020-1998. The finish of door shutter will be plain colour white/ Ivory/ Beige/Light grey/ Mahogany/Teak wood or any other colour using high quality pigments. Three heavy whight mild steel butt hinges type-I(ISI marked) size 100mm are to be fitted on one side of shutter.						
141	Admin Building	14.18	sqm	3181.100	**45107.998**	**45107.998**	INR Forty Five Thousand One Hundred & Seven and Paise One Hundred Only

142	Factory made FRP(alternately called GRP) door frame of size 75mmx100mm fabricated using E-glass Chopped Strand Mat (CSM) U.V stabilised Inopthalic Gelcoat and impregnated with Inopthalic resin. The thickness of the GRP skins shall not be less than 2.00mm. The door frame consist of four segments which are provided with plug-in-socket arrangement in-situ in the mould. The segments are plugged in and are joined together by means of screw. The GRP frame shall be provided with wooden reinforcement on six locations for high screw holding capacity for for fixing metallic hold fast and shall be consolidated by filling with medium density foam/plaster of paris with fibre reinforcement, Six numbers of 260mm x 25mm x 5mm size 'S' shaped M.S flat hold fast shall be provided with the frame. The material and process for manufacturing the door frames shall conform to RV-TIFAC composites Design Centre's standards and specifications. The finish of door frame will be plain colour white/ Ivory/ Beige/ Light grey/ Golden brown/Mahogany/ Teak wood/sand stone/Champagne/Pastel blue or any other colour using high quality pigments complete in all respect as per specification and direction of the E.I.C						
143	Admin Building Extension	45.00	m	551.700	**24826.500**	**24826.500**	INR Twenty Four Thousand Eight Hundred & Twenty Six and Paise Fifty Only
144	Supplying all materials, labour, T&P and fixing Aluminum frame glass louvers for ventilators						
145	Admin Building Extension	6.84	sqm	3990.230	**27293.173**	**27293.173**	INR Twenty Seven Thousand Two Hundred & Ninety Three and Paise Seventeen Only
146	Supplying all materials, labour, T&P and Finishing wall surface of walls with Acrylic wall putty (Water based) of approved make and finished smooth and even surface to receive painting including cost of scaffolding staging charges with cost of all materials taxes, labour T&P etc complete.						

147	Admin Building Extension	729.98	sqm	123.310	**90013.834**	**90013.834**	INR Ninety Thousand &Thirteen and Paise Eighty Three Only
148	Sale Counter	49.85	sqm	123.310	**6147.004**	**6147.004**	INR Six Thousand One Hundred & Forty Seven Only
149	Supplying all materials, labour, T&P and providing priming 1 coat with any approved primer all complete as per specification and direction of the E.I.C (For Plastering surface)						
150	Admin Building Extension	1125.15	sqm	66.820	**75182.523**	**75182.523**	INR Seventy Five Thousand One Hundred & Eighty Two and Paise Fifty Two Only
151	Sale Counter	124.39	sqm	66.820	**8311.740**	**8311.740**	INR Eight Thousand Three Hundred & Eleven and Paise Seventy Four Only
152	Co-Compost shed	193.16	sqm	66.820	**12906.951**	**12906.951**	INR Twelve Thousand Nine Hundred & Six and Paise Ninety Five Only
153	Supplying all materials, labour, T&P and Wall painting 2 coats with Plastic Emulsion Paint of approved shade on new work to give an even shade						
154	Admin Building Extension	729.98	sqm	89.130	**65063.117**	**65063.117**	INR Sixty Five Thousand &Sixty Three and Paise Twelve Only
155	Sale Counter	49.95	sqm	89.130	**4452.044**	**4452.044**	INR Four Thousand Four Hundred & Fifty Two and Paise Four Only
156	Co-Compost shed	56.54	sqm	89.130	**5039.410**	**5039.410**	INR Five Thousand &Thirty Nine and Paise Forty One Only
157	Supplying all materials, labour, T&P and finishing walls with water proofing weather coat of approved shade on new work two coats to give an even shade etc all complete as per specification and direction of the E.I.C						
158	Admin Building Extension	395.18	sqm	82.000	**32404.760**	**32404.760**	INR Thirty Two Thousand Four Hundred & Four and Paise Seventy Six Only
159	Sale Counter	74.55	sqm	82.000	**6113.100**	**6113.100**	INR Six Thousand One Hundred & Thirteen and Paise Ten Only
160	Co-Compost shed	136.62	sqm	82.000	**11202.840**	**11202.840**	INR Eleven Thousand Two Hundred & Two and Paise Eighty Four Only

161	Supplying all materials, labour, T&P and providing painting 2 coat with any approved enamel paint on new iron work all complete as per specification and direction of the E.I.C						
162	Admin Building Extension	13.14	sqm	152.650	**2005.821**	**2005.821**	INR Two Thousand &Five and Paise Eighty Two Only
163	Sale Counter						
164	Supplying all materials, labour, T&P and providing priming 1 coat with any approved primer over iron work all complete as per specification and direction of the E.I.C						
165	Admin Building Extension	13.14	sqm	61.110	**802.985**	**802.985**	INR Eight Hundred & Two and Paise Ninety Nine Only
166	Supplying all materials, labour, T&P and fitting and fixing on wall face U-PVC SWR (rain water) ventilating pipes and fittings of the following outside diameter conforming to ISI No 13592/1992 to walls with nails, bobbins and wooden plugs including jointing with supply of approved rubber lubricant by non-heat application method/as per manufacturer's specification, testing etc all complete as per P.H specification and direction of the E.I.C.						
167	100 mm dia uPVC SWR pipe (Type A)						
168	Admin Building Extension	28	m	372.200	**10421.600**	**10421.600**	INR Ten Thousand Four Hundred & Twenty One and Paise Sixty Only
169	Sale Counter	4	m	372.200	**1488.800**	**1488.800**	INR One Thousand Four Hundred & Eighty Eight and Paise Eighty Only
170	Back filling the foundation with excavated earth						
171	1/3 rd volume of Earthwork in excavation Item-1						
172	Admin Building Extension	29.55	cum	76.070	**2247.869**	**2247.869**	INR Two Thousand Two Hundred & Forty Seven and Paise Eighty Seven Only
173	Sale Counter	7.33	cum	76.070	**557.593**	**557.593**	INR Five Hundred & Fifty Seven and Paise Fifty Nine Only

174	Co-Compost shed	10.54	cum	76.070	**801.778**	**801.778**	INR Eight Hundred & One and Paise Seventy Eight Only
175	Disposal of surplus earth						
176	2/3rd volume of earthwork in excavation.						
177	Admin Building Extension	59.10	cum	276.010	**16312.191**	**16312.191**	INR Sixteen Thousand Three Hundred & Twelve and Paise Nineteen Only
178	Sale Counter	14.65	cum	276.010	**4043.547**	**4043.547**	INR Four Thousand &Forty Three and Paise Fifty Five Only
179	Co-Compost shed	21.07	cum	276.010	**5815.531**	**5815.531**	INR Five Thousand Eight Hundred & Fifteen and Paise Fifty Three Only
180	Supplying, fitting and fixing of Stainless steel of 304 grade in hand railing using 50 mm dia of 2mm thick circular pipe with Balustrade of size 32mm x 32mm x 2mm @ 0.90mtr. C/C and stainless square pipe bracing of size 32mm x 32mm x 2mm in 3 rows in stair case as per approved design and specification, buffing, polishing etc with cost, conveyance, taxes of all materials, labour, T&P etc. required for the complete in all respect						
181	Admin Building Extension	50.00	m	2509.300	**125465.000**	**125465.000**	INR One Lakh Twenty Five Thousand Four Hundred & Sixty Five Only
182	Dismantling and reinstallation work of 10KW roof top Solar Power plant from First floor to Second floor with dismantling of solar pannels, blocks, module rewiring, civil foundation for inverter, inverter installation, AJB reinstallation, installation and commissioning of system, solar log activation and monitoring, any other additional items required.						
183	Admin Building Extension	10.00	KW	3800.000	**38000.000**	**38000.000**	INR Thirty Eight Thousand Only

184	Drilling suitable holes in reinforcement or plain cement concrete with power driven drill machine to a minimum depth of 100 mm upto 200 mm in RCC beams, lintels, columns and slabs to introduce steel bars for sunshades/balconies including fixing the steel bars in position using epoxy resin anchor grout of approved make but excluding the cost of reinforcement, all complete as per direction of Engineer-in-charge. Upto and including 12 mm dia						
185	Admin building	98.00	cum	121.950	**11951.100**	**11951.100**	INR Eleven Thousand Nine Hundred & Fifty One and Paise Ten Only
186	Supplying all materials, labour, T&P and fixing of Aluminium roof sheet in roof drilling holes in wind ties including fixing of ridges, valleys, wind ties etc all complete as per specification and direction of the E.I.C						
187	Co-Compost shed	50.00	sqm	1810.290	**90514.500**	**90514.500**	INR Ninety Thousand Five Hundred & Fourteen and Paise Fifty Only
188	Supplying all materials, labour, T&P and fixing of ISMC 125 (12.7 kg per m)						
189	Co-Compost shed	488.95	Kg	80.000	**39116.000**	**39116.000**	INR Thirty Nine Thousand One Hundred & Sixteen Only
190	Dismantling and removing RCC columns, beams, slabs, staircase landing, lintels including stacking the useful materials for reuse and removing the debris within 50 m lead etc all complete as per specification and direction of the E.I.C						
191	Admin Building Extension	2.00	cum	1296.200	**2592.400**	**2592.400**	INR Two Thousand Five Hundred & Ninety Two and Paise Forty Only
192	Supplying and fixing of 60 mm thick cement concrete interlocking Paver block of M-30 grade of approved make, design, colour and size made by Block making machine with proper compaction laid in required pattern etc. compete in all respect confirming to IRC SP-63:2018.						
193	Admin Building Extension	40.00	sqm	485.280	**19411.200**	**19411.200**	INR Nineteen Thousand Four Hundred & Eleven and Paise Twenty Only

194	Supplying and fixing of Precast Kerb stone of size 300mx300mmx150mm of M-30 grade of approved make, design, colour and size made by Block making machine with proper compaction laid in required pattern etc. compete in all respect confirming to IS-5758:1984.						
195	Admin Building Extension	140.00	Each	162.570	**22759.800**	**22759.800**	INR Twenty Two Thousand Seven Hundred & Fifty Nine and Paise Eighty Only
196	Supplying all materials, labour, T&P and filling in foundation and plinth with sand well watered and rammed including conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per direction of the E.I.C.						
197	Admin Building Extension	4.00	cum	483.600	**1934.400**	**1934.400**	INR One Thousand Nine Hundred & Thirty Four and Paise Forty Only
198	**Total Civil Works**						
199	**PH WORKS**						
200	Providing and fixing **Chlorinated polyvinyl Chloride (CPVC) Pipes** (SDR 11) conforming to I.S 15778 having the thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipes with clamps at 1.00 mtr spacing, this includes jointing of pipes and fittings with one step solvent cement and testing of joints etc all complete as per direction of the E.I.C. (Make: Oriplast/Supreme/Astral/Hari plast/Fenolex & Equivalent)						
201	40mm Outer dia C-PVC pipe(External)	10	m	684.100	**6841.000**	**6841.000**	INR Six Thousand Eight Hundred & Forty One Only
202	32mm Outer dia C-PVC pipe(External)	10	m	515.900	**5159.000**	**5159.000**	INR Five Thousand One Hundred & Fifty Nine Only
203	25mm Outer dia C-PVC pipe(External)	10	m	355.500	**3555.000**	**3555.000**	INR Three Thousand Five Hundred & Fifty Five Only
204	20mm dia CPVC pipe (Internal wiring)	45	m	278.600	**12537.000**	**12537.000**	INR Twelve Thousand Five Hundred & Thirty Seven Only

205	supplying all materials, labour, T&P and cutting holes through existing brick/stone masonry walls for taking HCI/PVC pipes and fittings including making good the damages in cement mortar (1:4) etc. all complete as per P.H. specification and direction of E.I.C.						
206	250mm thick wall hole of 12x12x25cm						
207	Ground floor	5	nos	56.400	**282.000**	**282.000**	INR Two Hundred & Eighty Two Only
208	First floor	5	nos	59.850	**299.250**	**299.250**	INR Two Hundred & Ninety Nine and Paise Twenty Five Only
209	supplying all materials, labour, T&P and cutting holes in R.C.C Floors, roofs etc upto 19mm thick for passing G.I/PVC pipes and fittings and repairing the holes after insertion of pipes etc with C.C (1:2:4) including finishing complete so as to make it leak proof etc. all complete as per P.H. specification and direction of E.I.C.						
210	Ground floor	5	nos	194.690	**973.450**	**973.450**	INR Nine Hundred & Seventy Three and Paise Forty Five Only
211	First floor	5	nos	211.660	**1058.300**	**1058.300**	INR One Thousand &Fifty Eight and Paise Thirty Only
212	Supplying all materials, labour, T&P for providing fitting and fixing of brass/C.P fittings of the following nominal bore with supply of all jointing materialsetc. all completed as per approved specification and direction of E.I.C						
213	40mm dia brass stop cock/F.W.V (Sakti make)	2	nos	1213.800	**2427.600**	**2427.600**	INR Two Thousand Four Hundred & Twenty Seven and Paise Sixty Only
214	32mm dia brass stop cock/F.W.V (Sakti make)	2	nos	1607.500	**3215.000**	**3215.000**	INR Three Thousand Two Hundred & Fifteen Only
215	15 mm C.P/ concealed stop cock (JAQUAR Make, Model: ALD-CHR-083FT & CON-CHR-083FTK)	6	nos	1386.000	**8316.000**	**8316.000**	INR Eight Thousand Three Hundred & Sixteen Only
216	15 mm C.P/ Angle stop cock (JAQUAR Make, CON-CHR-059KN)	10	nos	52.070	**520.700**	**520.700**	INR Five Hundred & Twenty and Paise Seventy Only

217	Overhead Shower ø100mm Round Shape Single Flow (ABS Body Chrome Plated with Gray Face Plate) with Rubit Cleaning System with Shower Arm ø20mm & 280mm Long Round Shape for Ceiling Mounted Showers with Flange (JAQUAR Make, Model: OHS-CHR-1989 & SHA-CHR-475L280}	10	nos	76.600	**766.000**	**766.000**	INR Seven Hundred & Sixty Six Only
218	Sink Cock with Swinging Spout (Wall Mounted Model) (JAQUAR Make, Model: CON-CHR-347KNM)	6	nos	1361.400	**8168.400**	**8168.400**	INR Eight Thousand One Hundred & Sixty Eight and Paise Forty Only
219	125mm dia CP gratings	8	nos	1369.900	**10959.200**	**10959.200**	INR Ten Thousand Nine Hundred & Fifty Nine and Paise Twenty Only
220	Supplying all materials, labour T&P and fitting and fixing 10 Ltrs capacity PVC low level flushing cistern with a pair of C.I. or M.S.brackets complete with fittings such as syphonic arrangement, 15mm nominal size Brass/PVC ball valve with polythene float, CP/Brass handle, unions and couplings for connection with inlet, outlet, overflow pipes, 32mm dia PVC flush bend, 15mm dia PVC connection pipes including cutting holes and making good the same and connecting the flush bend with cistern and closet and connecting inlet pipe with supply main with etc all complete as per specification and direction of the E.I.C	1	nos	2557.400	**2557.400**	**2557.400**	INR Two Thousand Five Hundred & Fifty Seven and Paise Forty Only
221	10 lit PVC low level cistern-White (Slimline-white)	2	nos	2007.500	**4015.000**	**4015.000**	INR Four Thousand &Fifteen Only

222	Supplying all materials, labour, T&P and construction of masonry staging with providing 1st class K.B. Brick work in C.M.(1:6) of 0.46mtr height in staging, 12 mm cement plaster in C.M (1:6), R.C.C. Beam of 0.25mx0.30mx3.18m in C.C (1:1.5:3) using 12mm size H.G.Chips including centering, shuttering, bending and binding of rod etc watering, curring, conveyance of all materials to work site, payment of royalty, taxes etc all complete as per P.H specification and direction of the E.I.C.	3	nos	1117.900	**3353.700**	**3353.700**	INR Three Thousand Three Hundred & Fifty Three and Paise Seventy Only
223	2000 lits capacity on the roof of 1st floor(IInd Floor)	12	nos	1033.700	**12404.400**	**12404.400**	INR Twelve Thousand Four Hundred & Four and Paise Forty Only
224	Supplying all materials, labour, T&P and fitting and fixing on wall face U-PVC SWR (soil, waste, rain water) ventilating pipes and fittings of the following outside diameter conforming to ISI No 13592/1992 to walls with nails, bobbins and wooden plugs including jointing with supply of approved rubber lubricant by non-heat application method/as per manufacturer's specification, testing etc all complete as per P.H specification and direction of the E.I.C. (Make: Oriplast/Supreme/Astral/Hari plast/Fenolex & Equivalent)	3	nos	2577.800	**7733.400**	**7733.400**	INR Seven Thousand Seven Hundred & Thirty Three and Paise Forty Only
225	110 mmdia UPVC SWR Pipe (Type B)	1	nos	1960.500	**1960.500**	**1960.500**	INR One Thousand Nine Hundred & Sixty and Paise Fifty Only
226	75mm dia U-PVC SWR pipes (Type B)	10	nos	73.400	**734.000**	**734.000**	INR Seven Hundred & Thirty Four Only
227	75x75x75 mm dia UPVC Plain Shoe Bend 45^0						
228	110x110x110 mm dia UPVC SWR Single Junction with Door	6	nos	1918.000	**11508.000**	**11508.000**	INR Eleven Thousand Five Hundred & Eight Only
229	110x110x110 mm dia UPVC SWR Double junction with Door						
230	110x110x110 mm dia UPVC SWR Bend 87.5^0	2	nos	21635.800	**43271.600**	**43271.600**	INR Forty Three Thousand Two Hundred & Seventy One and Paise Sixty Only
231	110x110x110 mm dia UPVC Plain Shoe Bend 45^0						

232	110 mm dia UPVC Cowl	15	mtr	504.500	**7567.500**	**7567.500**	INR Seven Thousand Five Hundred & Sixty Seven and Paise Fifty Only
233	75 mm dia UPVC Cowl	15	mtr	362.500	**5437.500**	**5437.500**	INR Five Thousand Four Hundred & Thirty Seven and Paise Fifty Only
234	supplying all materials, labour, T&P and cutting holes through existing brick/stone masonry walls for taking HCI/PVC pipes and fittings including making good the damages in cement mortar (1:4) etc. all complete as per P.H. specification and direction of E.I.C.	2	nos	93.000	**186.000**	**186.000**	INR One Hundred & Eighty Six Only
235	250mm to 375mm thick wall	3	nos	463.200	**1389.600**	**1389.600**	INR One Thousand Three Hundred & Eighty Nine and Paise Sixty Only
236	Supplying all materials, labour, T&P and cutting holes in R.C.C roofs and cornice etc upto 19mm thick for taking HCI/PVC pipes and fittings and repairing the holes after insertion of pipes etc including finishing complete so as to make it leak proof etc. all complete as per P.H. specification and direction of E.I.C.	1	nos	572.300	**572.300**	**572.300**	INR Five Hundred & Seventy Two and Paise Thirty Only
237	Supplying all materials, labour, T&P and cutting holes in R.C.C chajja for taking HCI/PVC pipes and fittings and repairing the holes after insertion of pipes etc including finishing complete so as to make it leak proof etc. all complete as per P.H. specification and direction of E.I.C.	3	nos	252.800	**758.400**	**758.400**	INR Seven Hundred & Fifty Eight and Paise Forty Only
238	Supplying all materials, labour, T&P and fixing water closet, squatting pan (Indian type W.C pan/Orissa pattern squatting pan) duly embedded in cement concrete (1:4:8) using 4cm size hard granite metal including fixing a pair of vitreous china 250mm x 130mm x30mm footrest etc all complete as per specification and direction of the E.I.C.	3	nos	177.600	**532.800**	**532.800**	INR Five Hundred & Thirty Two and Paise Eighty Only
239	580x440mm orissa pattern Squatting pan (White) (Hindware/Parryware/Neycer /CERA)	5	nos	86.700	**433.500**	**433.500**	INR Four Hundred & Thirty Three and Paise Fifty Only
240	Fixing of 100 mm dia 'P' or 'S' Trap (with horn or without horn)for water closet squatting pan including jointing with trap and pan in cement mortar (1:1) etc all complete as per specification and direction of the E.I.C.	2	nos	55.200	**110.400**	**110.400**	INR One Hundred & Ten and Paise Forty Only

241	100 mm dia P trap UPVC						
242	100 mm dia S trap UPVC	5	nos	212.300	**1061.500**	**1061.500**	INR One Thousand &Sixty One and Paise Fifty Only
243	Supplying all materials, labour, T&P and fixing wash down water closet(E.W.C) with integral 'S' or 'P' trap to the floor with wooden plug and C.P screw including jointing the trap with soil waste pipe in C.M(1:1) etc all complete as per specification and direction of the E.I.C.	5	nos	170.100	**850.500**	**850.500**	INR Eight Hundred & Fifty and Paise Fifty Only
244	White vitrous china wash down water closet(E.W.C) 'P'/'S' trap (Hindware/Parryware/Neycer /CERA)	5	nos	119.900	**599.500**	**599.500**	INR Five Hundred & Ninety Nine and Paise Fifty Only
245	Supplying all materials, labour, T&P and fixing of plastic seat cover for E.W.C with chromium plated brass hinges and rubber buffer etc all complete as per specification and direction of the E.I.C.						
246	Plastic seat cover with cp/brass hinges and rubber buffers (Hindware/Parryware/Neycer /CERA)	2	nos	3488.000	**6976.000**	**6976.000**	INR Six Thousand Nine Hundred & Seventy Six Only
247	Supplying all materials, labour, T&P and fixing vitrous China-Half Stall wall urinal Flat back including connecting the urinal with waste pipe by means of white lead mixed with chopped hemp etc all complete as per specification and direction of the E.I.C.						
248	Sensor operated wall Urinal (Back Inlet) With Fixing Accessories, Size: 385x325x635 mm (JAQUAR Make, Model: URS-WHT-13253N) and Sensor Concealed Type Flushing Valve for Urinal Complete Set with Installation Box with Control Cock (Battery Operated) (JAQUAR Make, Model: SNR-STL-51087	5	nos	299.700	**1498.500**	**1498.500**	INR One Thousand Four Hundred & Ninety Eight and Paise Fifty Only
249	Supplying all materials, labour, T&P and fixing wash hand basin with hole for pillar tap with C.I/M.S brackets paintedwhite including holes in walls and making good the damages etc all complete as per specification and direction of the E.I.C.	5	nos	588.900	**2944.500**	**2944.500**	INR Two Thousand Nine Hundred & Forty Four and Paise Fifty Only
250	550mm x 400mm wash hand basin (Hindware/Parryware/Neycer /CERA)						

251	Supplying all materials, labour, T&P and fixing pedestrial for wash hand basin complete recessed at the back for the reception of pipes and fittings etc all complete as per specification and direction of the E.I.C.	4	nos	2989.600	**11958.400**	**11958.400**	INR Eleven Thousand Nine Hundred & Fifty Eight and Paise Forty Only
252	Pedestrial for 550mm x 400mm wash hand basin White (Hindware/Parryware/Neycer /CERA)						
253	Supplying all materials, labour, T&P and fixing P.V.C waste pipe of the following nominal diameter for wash hand basin complete recessed at the back for the reception of pipes and fittings etc all complete as per specification and direction of the E.I.C.	4	nos	791.000	**3164.000**	**3164.000**	INR Three Thousand One Hundred & Sixty Four Only
254	P.V.C waste pipe 40mm dia with length not less than 700 mm						
255	Supplying all materials, labour, T&P and fixing 15 mm dia P.V.C connection pipe of the following nominal diameter and making connection with Pillar cock and supply main for wash hand basin complete etc all complete as per specification and direction of the E.I.C.	5	nos	16337.500	**81687.500**	**81687.500**	INR Eighty One Thousand Six Hundred & Eighty Seven and Paise Fifty Only
256	Supplying all materials, labour, T&P and fixing wash kitchen sink/laboratory sink with C.I/M.S brackets paintedwhite including holes in walls and making good the damages etc all complete as per specification and direction of the E.I.C.						
257	24"x18"x10" stainless steel Kitchen sink/Laboratory sink (MOUSUMI Make)	8	nos	2721.100	**21768.800**	**21768.800**	INR Twenty One Thousand Seven Hundred & Sixty Eight and Paise Eighty Only
258	Supplying all materials, labour, T&P and fixing mirror of superior glass mounted on 6mm thick A.C sheet or ply wood sheet and fixed to wooden plugs with C.P screws and washers etc all complete as per specification and direction of the E.I.C.						

259	600mm x 600mm B.E glass mirror	8	nos	2621.900	**20975.200**	**20975.200**	INR Twenty Thousand Nine Hundred & Seventy Five and Paise Twenty Only
260	Supplying all materials, labour, T&P and fixing of standard sized glass shelf with cp bracket and guard rail and fixed to wooden plugs with C.P screws and washers etc all complete as per specification and direction of the E.I.C.						
261	Glass shelf with cp bracket and guard rail (JAQUAR Make, Model: ACN-CHR-1171N)	8	nos	135.300	**1082.400**	**1082.400**	INR One Thousand &Eighty Two and Paise Forty Only
262	Supplying all materials,labour, T&P and fixing standard sized CP towel rail/ring complete with CP brass brackets fixed to wooden plugs with CP screws as per specification and direction of the E.I.C	8	nos	103.500	**828.000**	**828.000**	INR Eight Hundred & Twenty Eight Only
263	Single Towel Rail 600mm Long, Stainless Steel (JAQUAR Make, Model:ACN-CHR-1111SM)						
264	Supplying all materials,labour, T&P and fixing standard sized CP Soap holder complete with CP brass brackets fixed to wooden plugs with CP screws as per specification and direction of the E.I.C	1	no.	5371.500	**5371.500**	**5371.500**	INR Five Thousand Three Hundred & Seventy One and Paise Fifty Only
265	Soap Dish Holder (JAQUAR Make, Model:ACN-CHR-1131N)						
266	Supplying all materials, labour, T&P and providing Curved shaped urinal partition with 8mm frosted glass Size H: 900mm W: 450mm including fitting & fixing in wall and making good the damages etc as per specification and direction of the E.I. (JAQUAR Make, Model: CJSE-CHR-810UC450X)	8	nos	2071.900	**16575.200**	**16575.200**	INR Sixteen Thousand Five Hundred & Seventy Five and Paise Twenty Only

267	Providing and laying water proofing treatment in sunken portion/ raised portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry. The rate includes provision of outlet pipe of 25mm size CPVC pipe for exhaust of percolation water if any. (CPWD AR Vol-II Si.22.5)						
268	In Ist Floor	8	nos	1595.000	**12760.000**	**12760.000**	INR Twelve Thousand Seven Hundred & Sixty Only
269	Supplying all materials labour T&P and filling in foundation and plinth with coarse sand well watered and rammed including conveyance of all materials to work sitepayment of royalty taxes etc all complete as per direction of Engineer in charge In ground floor						
270	In 1st Floor	8	nos	1614.900	**12919.200**	**12919.200**	INR Twelve Thousand Nine Hundred & Nineteen and Paise Twenty Only
271	Supplying all materials, labour, T&P and providing cement concrete (1:1.5:3) with 12mm size hard granite chips broken including watering, curing, conveyance of all materials to worksite, payment of royality, taxes etc all complete as aper specification and direction of the E.I.C. -In Ground Floor						
272	In 1st Floor	12	nos	948.300	**11379.600**	**11379.600**	INR Eleven Thousand Three Hundred & Seventy Nine and Paise Sixty Only

273	Supplying all materials, labour, T&P and constructing Gully Trap chamber of the following inside size with 8 cm thick precast cover slab in CC (1:2:4) mix using 12 mm size H.G chips, foundation concrete (1:4:8) using 40 mm size HG metal on bed and aound trap , !st class KB Brick work in CM (1:6) in F & P and inside 12 mm thick cement plaster (1:3) finished with a floating coat of neat cement including fixing 100mmx100mm size HCl gully trap 150mmx150mm size C.I grating etc. all completed as per approved drawing, specification and direction of E.I.C.	4	nos	5413.770	**21655.080**	**21655.080**	INR Twenty One Thousand Six Hundred & Fifty Five and Paise Eight Only
274	0.25 x 0.25m inside size						
275	Supplying all materials, labour, T&P and constructing Inspection Chamber of the following sizes with cement concrete (1:3:6) using 40 mm size HG metal on bed, 1st class KB Brick work in CM (1:6) moulding and shaping the channel inside and benching with C:C (1:1.5:3) using 12 mm size H.G chips, 12 mm thick cement plaster (1:3) with punning to inside, cement flush pointing (1:3) to outside, RCC cover slab in C.C(1:1.5:3) using 12 mm size H.G chips with RCC man hole cover, earth work excavation in all kinds of soil and refilling the cavity around the camber including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc. all complete as per approved specification and direction of E.I.C	19.53	sqm	281.000	**5487.930**	**5487.930**	INR Five Thousand Four Hundred & Eighty Seven and Paise Ninety Three Only
276	760mm x 760mm x 460mmm inspection chamber						

277	Supplying all materials, labour, T&P and laying in trenches 4kg/cm2 U-PVC SWR soil waste ventilating pipes for sewer line of following dia in trenches (to slope or level)and jointing with supply of approved solvent cement by non-heat application method C.C (1:3:6) using 40mm size hard granite metal on bed of the trenches and all round concrete encashing with C:C (1:4:8) using 40 mm size H.G. metal, earthwork in excavation in trenches in all kinds of soil, refilling the same in a layer of 0.30mtr with watering, ramming and removing of surplus earth, testing the S.W. pipeline etc. all complete as per approved drawing, specification and direction of the E.I.C.	1.51	cum	483.600	**730.236**	**730.236**	INR Seven Hundred & Thirty and Paise Twenty Four Only
278	110 mm dia PVC pipe line (All round)						
279	Supplying all materials, labour, T&P and constructing soakway pit of the following size with dry brick walling from bottom upto invert of inlet pipe and 1st class KB brick work in CM (1:6) for the remaining height at top, 12mm thick Cement Plaster (1:4) inside and outside over masonry brick work, gravel packing in the rear of well steining, RCC cover slab in CC (1:1.5:3) using 12mm HG chips, fitted with iron lifting handles including earthwork in open well excavation in all kinds of soil and refilling of cavity around the pit & painting the iron works, watering, curing, conveyance of all materials to work site, payment of royalty, taxes etc all complete as per approved specification and direction of the E.I.C.	0.76	cum	7927.900	**6025.204**	**6025.204**	INR Six Thousand &Twenty Five and Paise Twenty Only
280	1.40m dia x 2.00 m deep Soakway pit						
281	0.25 x 0.25m inside size	4	nos	1927.100	**7708.400**	**7708.400**	INR Seven Thousand Seven Hundred & Eight and Paise Forty Only

282	Supplying all materials, labour, T&P and constructing Inspection Chamber of the following sizes with cement concrete (1:3:6) using 40 mm size HG metal on bed, 1st class KB Brick work in CM (1:6) moulding and shaping the channel inside and benching with C:C (1:1.5:3) using 12 mm size H.G chips, 12 mm thick cement plaster (1:3) with punning to inside, cement flush pointing (1:3) to outside, RCC cover slab in C.C(1:1.5:3) using 12 mm size H.G chips with RCC man hole cover, earth work excavation in all kinds of soil and refilling the cavity around the camber including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc. all complete as per approved specification and direction of E.I.C						
283	760mm x 760mm x 460mmm inspection chamber	5	nos	9855.200	**49276.000**	**49276.000**	INR Forty Nine Thousand Two Hundred & Seventy Six Only
284	Supplying all materials, labour, T&P and laying in trenches 4kg/cm2 U-PVC SWR soil waste ventilating pipes for sewer line of following dia in trenches (to slope or level)and jointing with supply of approved solvent cement by non-heat application method C.C (1:3:6) using 40mm size hard granite metal on bed of the trenches and all round concrete encashing with C:C (1:4:8) using 40 mm size H.G. metal, earthwork in excavation in trenches in all kinds of soil, refilling the same in a layer of 0.30mtr with watering, ramming and removing of surplus earth, testing the S.W. pipeline etc. all complete as per approved drawing, specification and direction of the E.I.C.						
285	110 mm dia PVC pipe line (All round)	20	m	1354.900	**27098.000**	**27098.000**	INR Twenty Seven Thousand &Ninety Eight Only

286	Supplying all materials, labour, T&P and constructing soakway pit of the following size with dry brick walling from bottom upto invert of inlet pipe and 1st class KB brick work in CM (1:6) for the remaining height at top, 12mm thick Cement Plaster (1:4) inside and outside over masonry brick work, gravel packing in the rear of well steining, RCC cover slab in CC (1:1.5:3) using 12mm HG chips, fitted with iron lifting handles including earthwork in open well excavation in all kinds of soil and refilling of cavity around the pit & painting the iron works, watering, curing, conveyance of all materials to work site, payment of royalty, taxes etc all complete as per approved specification and direction of the E.I.C.						
287	1.40m dia x 2.00 m deep Soakway pit	1	no	22300.600	**22300.600**	**22300.600**	INR Twenty Two Thousand Three Hundred and Paise Sixty Only
288	**ELECTRICAL WORKS**						
289	**Adminitrative Building**						
290	Recessed wiring to Light point/Exhaust Fan Point with 1.5 sqmm, FR PVC Insulated single core multistrand copper conductor of ISI marked with 20 mm dia non- metallic PVC flexible conduct with 5 Amp, 250 V Modular type switch ISI marked and ceiling rose ISI marked mounted on MS box having front bakelite cover of suitable size,MS box with 1.5 sqmm FR PVC insulated single core multistrand copper conductor and earth wire incouding all accessories and connection as per direction of engineer in charge (Make of wire = Finolex/L&T/ Anchor/ V-Guard) deducting the cost of 2M Box with cover Plate-1 No.)Group A 1.2.1-1.24.2	8	Point	475.000	**3800.000**	**3800.000**	INR Three Thousand Eight Hundred Only
291	-do-.....Group B 1.2.2 - 1.24.2	13	Point	721.000	**9373.000**	**9373.000**	INR Nine Thousand Three Hundred & Seventy Three Only
292	-do-..... Group C 1.2.3 - 1.24.2	33	Point	1030.000	**33990.000**	**33990.000**	INR Thirty Three Thousand Nine Hundred & Ninety Only
293	Recessed wiring to Fan point in Group B 1.2.2 - 1.24.2	6	Point	721.000	**4326.000**	**4326.000**	INR Four Thousand Three Hundred & Twenty Six Only

294	Recessed wiring to Callbell point in Group C 1.2.3 - 1.24.2	1	Point	1030.000	**1030.000**	**1030.000**	INR One Thousand &Thirty Only
295	S/F of 4M GI box on surface or in recess with suitable size of Modular base cover cover in front including providing and fixing 3 pin 5/6 amp. Modular Socket out let & 5/6amp. Modular type switch,connection,painting etc. as required (1.25.1+1.25.4)	2	Each	459.000	**918.000**	**918.000**	INR Nine Hundred & Eighteen Only
296	S/F of 5/6 Modular Switch & 3pin 5/6A Modular Socket on existing board (1.25.1+1.25.4)	8	Each	229.000	**1832.000**	**1832.000**	INR One Thousand Eight Hundred & Thirty Two Only
297	S/F to 16/18 SWG Modular GI box of following sizes (normal sixe) in recess with suitable size of Modular Base & Cover in front including cutting the wall and making good the same in case of recessed conduit as required.for 2 Module(1.24.1)	15	Each	223.000	**3345.000**	**3345.000**	INR Three Thousand Three Hundred & Forty Five Only
298	..do 4 Module	1	Each	270.000	**270.000**	**270.000**	INR Two Hundred & Seventy Only
299	-do-6 Module	1	Each	329.000	**329.000**	**329.000**	INR Three Hundred & Twenty Nine Only
300	-do-8 Module	2	Each	371.000	**742.000**	**742.000**	INR Seven Hundred & Forty Two Only
301	-do-12 Module	6	Each	484.000	**2904.000**	**2904.000**	INR Two Thousand Nine Hundred & Four Only
302	Wiring for circuit/sub main alongwith earth wire with following sizes of PVC insulated single core multistrand copper conductor with ISI marked conforming to IS-694/1990 in 20 mm dia non metallic heacy duty flexible conduit 1.6 mm in recessed PVC conduit as required (make of wire-Finolex/L&T/Anchor/Havels/ V-Guard).2x1.5 sqmm + 1 x 1.0 sqmm(1 .8)	170	Meters	134.000	**22780.000**	**22780.000**	INR Twenty Two Thousand Seven Hundred & Eighty Only
303	-do- 2 x 2.5 sqmm + 1 x 1.5 sqmm (1.8.2)	105	Meters	149.000	**15645.000**	**15645.000**	INR Fifteen Thousand Six Hundred & Forty Five Only
304	-do- 2x4 sqmm + 1 x 1.5 sqmm (1.8.3)	105	Meters	167.000	**17535.000**	**17535.000**	INR Seventeen Thousand Five Hundred & Thirty Five Only
305	-do- 4x6sqmm +2x2.5sqmm (1.8.10)	27	Meters	295.000	**7965.000**	**7965.000**	INR Seven Thousand Nine Hundred & Sixty Five Only

306	Supply, Installation, Testing, and Commissioning of 63 Amp TPN Main switches of following capacity (IS 13940 Part 3/1993) on existing surface / wall mountnting and complete with HRC Fuse links, interconnections, earthing, etc. as required as per direction of Engineer in Charge.Make-SEIMENS/HPL/ANCHOR/L&T/HAVELS/C & S/ RK (2.15.3)	1	Each	2606.000	**2606.000**	**2606.000**	INR Two Thousand Six Hundred & Six Only
307	S/F of 5 to 32 Amp rating 240 Volt "B" series MCB for lighting and other loads in the existing MCB Distribution Board ISI marked complete with connection, testing and commissioning etc. as required (2.6.1)	6	Each	134.000	**804.000**	**804.000**	INR Eight Hundred & Four Only
308	S/F of 6 way (6+18) TPN MCB DB double door (2.5.6)	1	Each	2519.000	**2519.000**	**2519.000**	INR Two Thousand Five Hundred & Nineteen Only
309	Supply, Installation, Testing and commissioning of bulkhead fittings including fixing of 5 watt LED Lamp(Make:Havels with die cast aluminium housing and frosted glass cover).RUGBY	1	Each	606.050	**606.050**	**606.050**	INR Six Hundred & Six and Paise Five Only
310	S/F of batten holder BK angle holder ISI marked including connection etc. instead of ceiling rose(1.29-1.28)	27	Each	17.700	**477.900**	**477.900**	INR Four Hundred & Seventy Seven and Paise Ninety Only
311	S/F of 15W LED Bulb	27	Each	325.750	**8795.250**	**8795.250**	INR Eight Thousand Seven Hundred & Ninety Five and Paise Twenty Five Only
312	Earthing with copper earth plate 600 mm x 600mm x 3.15 mm thick including accessories and providing masonary with cover plate having locking arrangement and watering pipe etc. with charcoal and salt as required.(3.5+3.6)	1	Each	5673.000	**5673.000**	**5673.000**	INR Five Thousand Six Hundred & Seventy Three Only
313	Supply andlaying 8 SWG copper wire in recess for loop earthing as required (3.18)	12	Meters	98.000	**1176.000**	**1176.000**	INR One Thousand One Hundred & Seventy Six Only
314	S/F fo 48" A.C.Cilling fan without regulator including all conections Model:Crompton (jura)/ Usha-(Striker Millenium) /Havells (Velocity/Spark) / Anchor - (XL)/ Orient-(Summer Pride)	6	Each	2436.200	**14617.200**	**14617.200**	INR Fourteen Thousand Six Hundred & Seventeen and Paise Twenty Only
315	S/F of 24W Recess Mounted Square Shape LED luminary,Make-Havells/Crompton/Philips	18	Each	2007.730	**36139.140**	**36139.140**	INR Thirty Six Thousand One Hundred & Thirty Nine and Paise Fourteen Only

316	S/F of Fan hook S, Type on ceiling.(M-22)	6	Each	262.430	**1574.580**	**1574.580**	INR One Thousand Five Hundred & Seventy Four and Paise Fifty Eight Only
317	Supply, Installation, Testing and commissionioning of 225mm sweep exhaust fan in the existing opening, including making the hole to suit the size of the above fan making good the damaged comlete, connection,etc. as required.(1.43)(Make: Bajaj/Almonard)	8	Each	2078.610	**16628.880**	**16628.880**	INR Sixteen Thousand Six Hundred & Twenty Eight and Paise Eighty Eight Only
318	S/F of computer board consisting of 3 nos. of 5 amp Modular plug and switch complete with wiring on 12M GI.box with Front cover(1.24.9 +1.25.4 + 2.5.1)	2	Each	1930.210	**3860.420**	**3860.420**	INR Three Thousand Eight Hundred & Sixty and Paise Forty Two Only
319	S/F Call bell/Buzzer ISI marked suitable for DC/AC single Phase 230 volts complete as required.(1.30)	1	Each	124.000	**124.000**	**124.000**	INR One Hundred & Twenty Four Only
320	S/F of 60 watt. LED street light fitting including necessary connection. (Make- crompton/poly cab/Havells/ HPL/Philips)	2	Each	7823.900	**15647.800**	**15647.800**	INR Fifteen Thousand Six Hundred & Forty Seven and Paise Eighty Only
321	S/F of 1.5sqmm mult-strand copper wire for invertor wiring	60	Meters	49.230	**2953.800**	**2953.800**	INR Two Thousand Nine Hundred & Fifty Three and Paise Eighty Only
322	S/F of 6 pin 15/16A Modular socket (1.25.5)	6	Each	215.450	**1292.700**	**1292.700**	INR One Thousand Two Hundred & Ninety Two and Paise Seventy Only
323	S/F of 100W Step type Modular Regulator	6	Each	721.020	**4326.120**	**4326.120**	INR Four Thousand Three Hundred & Twenty Six and Paise Twelve Only
324	S/F of 32A DP Modular Switch with Neon Indicator (Heavy Duty)	6	Each	359.150	**2154.900**	**2154.900**	INR Two Thousand One Hundred & Fifty Four and Paise Ninety Only
325	S/F of 32A DP MCB for AC	6	Each	898.980	**5393.880**	**5393.880**	INR Five Thousand Three Hundred & Ninety Three and Paise Eighty Eight Only
326	S/F of 63A FP MCB	1	Each	2693.450	**2693.450**	**2693.450**	INR Two Thousand Six Hundred & Ninety Three and Paise Forty Five Only
327	**Sale Counter**						

328	Recessed wiring to Light point/Exhaust Fan Point with 1.5 sqmm, FR PVC Insulated single core multistrand copper conductor of ISI marked with 20 mm dia non- metallic PVC flexible conduct with 5 Amp, 250 V Modular type switch ISI marked and ceiling rose ISI marked mounted on MS box having front bakelite cover of suitable size,MS box with 1.5 sqmm FR PVC insulated single core multistrand copper conductor and earth wire incouding all accessories and connection as per direction of engineer in charge (Make of wire = Finolex/L&T/ Anchor/ V-Guard) deducting the cost of 2M Box with cover Plate-1 No.)						
329	Group A 1.2.1-1.24.2	3	No	475.000	**1425.000**	**1425.000**	INR One Thousand Four Hundred & Twenty Five Only
330	Supply and Fixing of 4M GI box on surface or in recess with suitable size of Modular base cover cover in front including providing and fixing 3 pin 5/6 amp. Modular Socket out let & 5/6amp. Modular type switch,connection,painting etc. as required (Separate) (1.25.1+1.25.4)	3	No	459.000	**1377.000**	**1377.000**	INR One Thousand Three Hundred & Seventy Seven Only
331	Supply and Fixing of batten holder BK angle holder ISI marked including connection etc. instead of ceiling rose(1.29- 1.28)	2	No	17.700	**35.400**	**35.400**	INR Thirty Five and Paise Forty Only
332	Supply and Fixing of 15W LED Bulb	2	No	325.750	**651.500**	**651.500**	INR Six Hundred & Fifty One and Paise Fifty Only
333	Supply and Fixing of 48" A.C.Cilling fan without regulator including all conections Model:Crompton (jura)/ Usha-(Striker Millenium) /Havells (Velocity/Spark) / Anchor -(XL)/ Orient-(Summer Pride)	1	No	2436.200	**2436.200**	**2436.200**	INR Two Thousand Four Hundred & Thirty Six and Paise Twenty Only
334	S/F of 6 pin 15/16A Modular socket (1.25.5)	1	No	215.450	**215.450**	**215.450**	INR Two Hundred & Fifteen and Paise Forty Five Only
335	**Co-Compost shed**						

336	Recessed wiring to Light point/ Fan Point with 1.5 sqmm, FR PVC Insulated single core multistrand copper conductor of ISI marked with 20 mm dia non-metallic PVC flexible conduct with 5 Amp, 250 V Modular type switch ISI marked and ceiling rose ISI marked mounted on MS box having front bakelite cover of suitable size,MS box with 1.5 sqmm FR PVC insulated single core multistrand copper conductor and earth wire incouding all accessories and connection as per direction of engineer in charge (Make of wire = Finolex/L&T/ Anchor/ V-Guard) deducting the cost of 2M Box with cover Plate-1 No.)						
337	Group B 1.2.2 - 1.24.2	9	Point	475.000	**4275.000**	**4275.000**	INR Four Thousand Two Hundred & Seventy Five Only
338	Supply and Fixing of 4M GI box on surface or in recess with suitable size of Modular base cover cover in front including providing and fixing 3 pin 5/6 amp. Modular Socket out let & 5/6amp. Modular type switch,connection,painting etc. as required (Separate) (1.25.1+1.25.4)	3	Each	459.000	**1377.000**	**1377.000**	INR One Thousand Three Hundred & Seventy Seven Only
339	Supply and Fixing of batten holder BK angle holder ISI marked including connection etc. instead of ceiling rose(1.29- 1.28)	6	Each	17.700	**106.200**	**106.200**	INR One Hundred & Six and Paise Twenty Only
340	Supply and Fixing of 15W LED Bulb	6	Each	325.750	**1954.500**	**1954.500**	INR One Thousand Nine Hundred & Fifty Four and Paise Fifty Only
341	Supply and Fixing of 48" A.C.Cilling fan without regulator including all conections Model:Crompton (jura)/ Usha-(Striker Millenium) /Havells (Velocity/Spark) / Anchor - (XL)/ Orient-(Summer Pride)	3	Each	2436.200	**7308.600**	**7308.600**	INR Seven Thousand Three Hundred & Eight and Paise Sixty Only
342	S/F of 6 pin 15/16A Modular socket (1.25.5)	1	Each	215.450	**215.450**	**215.450**	INR Two Hundred & Fifteen and Paise Forty Five Only
Total in Figures					**6795196.696**	**6795196.696**	INR Sixty Seven Lakh Ninety Five Thousand One Hundred & Ninety Six and Paise Seventy Only
Quoted Rate in Figures			**Select**		**0.000**	**0.000**	INR Zero Only
Quoted Rate in Words		**INR Zero Only**					