



GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT



BID DOCUMENT

(PART-A)

Name of Work: Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System.

**EXECUTIVE ENGINEER & SM(C)-I
IIT(ISM), CPWD, DHANBAD**



GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

Name of Work: - Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System
NIT No.: 03/NIT/EE&SM(C)-I/IIT(ISM)/CPWD/2026-27

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It is certified that this document contains pages serially numbered from Page No. 1 to 63

This Bid document is approved for Rs. 9,15,790/- (Rupees Nine Lakh Fifteen Thousand Seven Hundred & Ninety only).

EE&SM(C)-I/IIT(ISM)
CPWD, Dhanbad



CENTRAL PUBLIC WORKS DEPARTMENT
Notice Inviting e-Tenders

The Executive Engineer & Senior Manager(C)-I, IIT(ISM), CPWD Dhanbad (Tel No. 0326-2999197) invites on behalf of President of India online percentage rate tender from approved and eligible contractors of CPWD for following work(s):-

- NIT No. 03/NIT/EE&SM(C)-I/IIT(ISM)/CPWD/2026-27
- Name of work: Construction of Canteen Service Facilities at IIT (ISM), Dhanbad.
Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System
- Estimated Cost : - Rs. 9,15,790/-
- Earnest Money :- Rs. 18,316/-
- Period of Completion :- 01 (One) Month
- Last time and date of submission of bid : Up to 03:00 P.M. on 31.07.2026.

The bid forms and other details can be obtained from the website **www.etender.cpwd.gov.in** or www.cpwd.gov.in.

EE&SM(C)-I
IIT(ISM)
CPWD, Dhanbad

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING

The Executive Engineer & Senior Manager(C)-I, IIT(ISM), CPWD Dhanbad on behalf of President of India invites online percentage rate bids from approved and eligible contractors of CPWD for the following work(s):-

S. No.	NIT No.	Name of work & Location	Estimated cost put to tender	Earnest Money	Period of Completion	Last date & time of submission of bid, original EMD, copy of receipt for deposition of original EMD, and other documents as specified in the press notice	Time and date of opening of the tender
1	2	3	4	5	6	7	8
1	03/NIT/EE&SM(C)-I/IIT(ISM)/CPWD/2026-27	Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System	Rs. 9,15,790/-	Rs.18,316/-	01 (One) Month	Up to 03:00 PM on 31.07.2026	03:30 PM on 31.07.2026

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he consider himself eligible and he is in possession of all the documents required.
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website **www.etender.cpwd.gov.in** or **www.cpwd.gov.in** free of cost.
4. But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bid or Division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as insurance surety bonds, Account Payee Demand Draft or Bankers cheque or Fixed Deposit Receipts or/and Bank Guarantee (for balance amount as prescribed) from any of the commercial bank towards EMD in favor of Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to Division office of any Executive Engineer (including NIT issuing EE/AE), CPWD and other documents as specified.
5. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered/update their profile beforehand. The necessary training materials including the videos with step to step process are available on download section of <https://etender.cpwd.gov.in>.
6. The intending bidder must have valid Class-III digital signature certificate with encryption key (combo type) to perform any operations / transactions on the e-tendering portal / website and the bidder should download and install the emSigner on their system as per instructions available on download section of <https://etender.cpwd.gov.in>.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.

8. Contractor can upload documents in the form of JPG format and PDF format.
9. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in yellow colour and the moment rate is entered, it turns sky blue.
In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).
However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

List of Documents to be scanned and uploaded within the period of bid submission:

1. Treasury Challan/Demand Draft/Pay order or Banker's Cheque /Deposit at Call Receipt/Bank Guarantee of any Scheduled Bank against EMD.
(EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted)
2. Enlistment Order of the Contractor.
3. Certificate of Registration for GST (Goods and Services Tax) or proof of applying thereof.
GST Certificate of the State in the work is to be taken up, if already obtained by the bidder.
If the bidder has not obtained GST registration in the State in which the work is to be taken up, or as required by GST authorities, then in such a case the bidder shall scan and upload following undertaking along with other bid document "If work is awarded to me, I/we shall obtain GST registration certificate of the State, in which work is to be taken up, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and /or for any action taken by CPWD or GST department in this regard".
4. Copy of receipt for deposition of original EMD issued from Division office of any Executive Engineer (including NIT issuing EE &AE/AE(P)/AAO/CPWD as in the format attached.
5. Undertaking on structural stability and soundness of completed buildings & infrastructure projects Affidavit to be furnished on Rs.200/- Non-Judicial stamp paper attested by Notary (FORM- 'F').
6. CPWD Form 7 duly signed.
7. The certificate issued through LMS (Learning Management System) in ERP under Train the Trainers Program arranged by ERP Unit OR Undertaking.
8. Valid Registration of EPF & ESIC.
9. If the bidder is a firm in partnership, the bid shall be signed by all the partners of the firm above their full type written names and current address, or, alternatively, by a partner holding **power of attorney for the firm**. In the later case, a certified copy of the **power of attorney should accompany the bid**. In both cases a **certified copy of the partnership deed** and current address of all the partners of the firm should accompany the bid.
10. If the bidder is a limited company or a corporation, the bid shall be signed by a duly authorized person holding power of attorney for signing the bid accompanied by a **copy of the power of attorney**. The bidder should also furnish a **copy of the Memorandum of Articles of Association duly attested by a Public Notary**.
11. Proforma of Affidavit for Non-Black listing should be furnished on Rs.100/-Non-Judicial stamp paper attested by Notary (Form-'H').
12. An undertaking about Site inspection "I/We have inspected the site and its surroundings and satisfied ourselves regarding ground conditions, access, and all relevant site factors. I/We have obtained all necessary information on risks, contingencies, and circumstances affecting the bid. I/We confirm full knowledge of the site and shall not claim any extra cost due to misunderstanding at a later stage. I/We shall arrange, at our own cost, all materials, resources, utilities, and facilities required for execution unless specified otherwise. Submission of this bid confirms that I/We have read all documents and understood the scope, specifications, and local conditions affecting the work."

1. ~~Item rate/Percentage rate bids are invited on behalf of President of India from approved and eligible contractors of CPWD and those of appropriate list of M.E.S., BSNL, Railway and State P.W.D. (B&R) or State Govt.'s Department (strike out as the case may be) dealing with building and roads, if there is no State PWD (B&R) for the work of~~

“Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System”

The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

The work is estimated to cost **Rs. 9,15,790/-** This estimate, however, is given merely as a rough guide.

2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7/8** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **01 (One) Month** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. The site for the work is available.

OR

~~The site for the work shall be made available in parts as specified below:-~~

~~.....
(ii) The architectural and structural drawing for the work is available~~

or

~~The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.~~

5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks (drawn in favour of **Executive Engineer, ISMU Project Division-I, CPWD, Dhanbad**) shall be scanned and uploaded on the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any Commercial bank having validity for a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.

EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted)

The bid submitted shall be opened at 03:30 PM on 31.07.2026

9. The bid submitted shall become invalid if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not upload all the documents (including GST registration) as stipulated in the bid document.
 - (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted **physically by the lowest bidder** in the office of bid opening authority.
 - (iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
10. The contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in schedule E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form.. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If applicable and also ensure the compliance of aforesaid provisions by the sub contractors, if any engaged by the contractor for the said work within the period specified in Schedule F.
11. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

12. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
13. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
14. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Housing and Urban Affairs. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department
15. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
16. The bids for the work shall remain open for acceptance for a period of 30 (thirty) days from the date of opening of bids in case of single bid system.
Further
 - (i) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (iii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
17. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
 - (a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.
18. The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer/ Assistant Engineer (Phone no 0326-299197, e- mail Id eeismpd2@gmail.com) or ERP helpline no. 18001803286 or e-mail Id cpwd.support@techmahindra.com. The e- tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

Executive Engineer & S M (C)-I
For & on behalf of The President of India

FORM OF EARNEST MONEY (EMD RECEIPT)

<u>Receipt of deposition of original EMD</u>
(Receipt No...../date.....)
1. Name of Work. :- Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System. NIT No. 03/NIT/EE&SM(C)-I/IIT(ISM)/CPWD/2026-27 2. Estimate Cost:- Rs. 9,15,790/- 3. Amount of Earnest Money Deposit. Rs. 18,316/- 4. Last date of submission of bid:- 31.07.2026
1. Name of Contractor..... 2. Form of EMD..... 3. Amount of Earnest Money Deposit..... 4. Date of submission of EMD..... 5. Address of EMD receiving Office i/c contact number & email ID..... Signature, Name and Designation of EMD receiving officer (EE/AE/(P)/AE/AAO) Along with office stamp

EMD Drawn in favour of Executive Engineer, ISMU Project Division-I, CPWD, Dhanbad

Form-‘F’

Undertaking on structural stability and soundness of already completed building and infrastructure projects

I/We undertake and confirm that any buildings/ infrastructure constructed by our firm / partnership firm / company has not suffered any failure, making it unfit for intended use , either due to structural design and defects or due to use of sub-standard material or execution of sub- standard work , poor workmanship or any other reason during the last 25 (twenty five) years.

I/We, further, undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall free to terminate the bid / agreement and forfeit the entire amount of earnest money deposit, performance guarantee and security deposits.

I /We, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD.

The decision of Engineer-in-Charge or any higher authority shall be final and binding.

Signature of notary
with seal

Signature of bidder or
an authorized person of
the firm with stamp

Note: - Affidavit to be furnished on a ‘Non - judicial’ stamp paper of Rs. 200/- (Scanned copy of the notarized affidavit to be uploaded at the time of submission of bid).

AFFIDAVIT

I/we declare that, I/we have not been debarred/restrained/ black listed by any Central Govt./State Govt. Agency/ Autonomous body of the Central or State Govt. /PSU etc.

Signature of
Notary with Seal

Signature of bidder or an authorized
person of the firm with stamp

Note: Affidavit to be furnished on a 'Non-judicial' stamp paper of Rs. 100/- (scanned copy of the notarized affidavit to be uploaded at the same time of submission of bid).

To be signed by the bidder and same signatory competent/authorized to sign the relevant contract on behalf of CPWD.

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR
REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
WATER-PROOFING WORKS & Anti termite
(All Water Proofing Items/Anti termite)**

The agreement made this..... day of (Two Thousandonly) betweenS/o..... (hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) datedand made between the GUARANTOR OF THE ONE PART AND the Government of the other part where by the contractor inter alia under took to render the building and structures in the said contract recited completely water and leak-proof/**Anti termite**.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain water and leak proof/**Anti termite**, for ten years from the date of completion of the work.

NOW THE GUARANTOR hereby guarantee that work executed by him will render the structures completely leak proof/**Anti termite** and the minimum life of such water proofing treatment/ **Anti termite** shall be ten years to be reckoned from the date of completion of the work.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building water proof/ **Anti termite** to the satisfaction of the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantee or fails to execute the water proofing/ **Anti termite** and fails to control all kinds of leakage and seepage or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Government, the decision of the Engineer-in-Charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator andby for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of :

1.....

2

SIGNED FOR AND BEHALF OF THE PRESIDENT OF INDIA BY in the presence of:

1.....

2.....

Note : For Water proofing & Anti termite minimum 10% (ten percent) of the cost of these items would be retained as Guarantee Bond to watch the performance of the work done shall be withheld for five years from the date of completion of the work.

INTEGRITY PACT

To,

All Bidders

Subject: NIT No. 03/NIT/EE&SM(C)-I/IIT(ISM)/CPWD/2026-27 for the work: "Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System."

Dear Sir,

It is here by declared that CPWD is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer /bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the CPWD.

Yours faithfully

Executive Engineer

To,

The EE&SM(C)-I,
IIT(ISM), CPWD, Dhanbad

Sub: Submission of Tender for the work of “Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System”.

Dear Sir,

I/We acknowledge that CPWD is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by CPWD. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, CPWD shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of CPWD.

INTEGRITY AGREEMENT

This Integrity Agreement is made at on this day of 20.....

BETWEEN

President of India represented through Executive Engineer,

.....,

(Name of Division)

CPWD, (Hereinafter referred as the
(Address of Division)

‘Principal/Owner’, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....
(Name and Address of the Individual/firm/Company)

through (Hereinafter referred to as the
(Details of duly authorized signatory)

“Bidder/Contractor” and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No.)
(hereinafter referred to as “Tender/Bid”) and intends to award, under laid down organizational procedure, contract for

.....
(Name of work)

hereinafter referred to as the “Contract”.

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as “Integrity Pact” or “Pact”), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as

follows and this Pact witnesses as under:

Article 1: Commitment of the Principal/Owner

(1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

- (a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- (b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract
- (c) The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

(2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

(1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

(2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

- (a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
- (b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
- (c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- (d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
- (e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

(3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.

(5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- (1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.
- (2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.
- (3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

- (1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.
- (3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/sub-vendors.
- (2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
- (3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, CPWD.

Article 7- Other Provisions

- (1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Head quarters of the Division of the Principal/Owner, who has floated the Tender.
- (2) Changes and supplements need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- (4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- (5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....
(For and on behalf of Principal/Owner)
.....

(For and on behalf of Bidder/Contractor)

WITNESSES:

1.
(signature, name and address)

2.
(signature, name and address)

Place:

Dated :

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

Percentage Rate Tender/~~Item Rate Tender~~ & Contract or Works

- (A) Tender for the work of: - Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System
- (i) To be submitted/uploaded by **15:00 hours** on **31.07.2026** to the Executive Engineer & Senior Manager(C)-I, IIT(ISM), CPWD, Dhanbad /upload at www.etender.cpwd.gov.in.
- (ii) To be opened in presence of tenderers who may be present at **15:30 hours on 31.07.2026** in the office of the Executive Engineer & Senior Manager(C)-I, IIT(ISM), CPWD, Dhanbad

Issued to *

Signature of officer issuing the documents *

Designation *

Date of Issue *

TENDER

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

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

We agree to keep the tender open for fifteen (30) days from the due date of its opening.

If after the opening of tender, I/We withdraw or modify my/our bid during the period of validity of tender (including extended validity of tender) specified in the tender documents, Or If, after the award of work, I/we fail to sign the contract, or to submit performance guarantee before the deadline defined in the tender documents, I/We agree that said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to suspend I/We for one year and shall not be eligible to bid for CPWD tenders from date of issue of suspension order. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely, Further, I/We agree that in case of forfeiture of Performance Guarantee as aforesaid. I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then

I/We shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

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

Dated
Witness:

Signature of Contractor
Postal Address

Address:
Occupation:

A C C E P T A N C E

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of Rs.
(Rupees.....)
.....)

The letters referred to below shall form part of this contract agreement:-

- (a)
- (b)
- (c)

**EE&SM(C)-I
IIT(ISM),
C.P.W.D., Dhanbad
For & on behalf of President of India**

Dated:

PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities (as per PWD-3)

Page No. 62-63

SCHEDULE 'D'

Extra schedule for specific requirements/document for the work, if any.

As attached in tender documents

SCHEDULE 'E'

Reference to General Conditions of contract.

Applicable GCC is GCC construction works 2023, as modified and corrected upto previous day of the last date of submission of the tender.

Name of work:

Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System.

Estimated cost of work:

Rs. 9,15,790/-

(i) Earnest money:

Rs. 18,316/-
(EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted)

(ii) Performance Guarantee :

(a) 5% of tendered value or estimated cost put to tender (ECPT) (whichever is higher)
(b) Where the tendered amount is less than eighty percent (80%) of the estimated cost put to tender (ECPT), the performance guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.

(iii) Security Deposit :

2.5% of tendered value.

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS
Officer inviting tender

Executive Engineer &SM(C)-I, IIT(ISM),
CPWD, Dhanbad

Definitions:

2(v) Engineer-in-Charge
2(viii) Accepting Authority
2(x) Percentage on cost of materials

EE&SM(C)-I/IIT(ISM)/CPWD/Dhanbad
EE&SM(C)-I/IIT(ISM)/CPWD/Dhanbad
15%

	and labour to cover all overheads and profits	
2(xi)	Standard Schedule of Rates	DSR - 2023 with upto date correction slips upto last date of submission of bids and Market Rates.
2(xii)	Department	Central Public Works Department
9(ii)	Standard CPWD contract Form GCC 2023, CPWD Form 7/ 8 as modified & corrected upto	Standard CPWD contract form GCC Construction work 2023 , CPWD Form 7 as modified & corrected upto previous day of the last date of submission of the tender.

Clause 1

- | | | |
|------|---|--------|
| (i) | Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance | 5 days |
| (ii) | Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above | 2 days |

Clause 2

Authority for fixing compensation under clause 2	CE&ED/IIT(ISM)/CPWD/Dhanbad
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Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start	7 days
---	--------

Mile stone(s) as per table given below:- NOT APPLICABLE

Time allowed for execution of work.	01 (One) Month
-------------------------------------	----------------

Authority to decide:

- | | |
|-----|--|
| (i) | Extension of time EE&SM(C)-I/IIT(ISM)/CPWD/Dhanbad (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be) |
|-----|--|

- (ii) Rescheduling of mile stones **CE&ED/IIT(ISM)/CPWD/Dhanbad** (Superintending Engineer in Charge or Superintending Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)
- (iii) Shifting of date of start in case of delay in handing over of site **CE&ED/IIT(ISM)/CPWD/Dhanbad** (Superintending Engineer in Charge or Superintending Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)

Schedule of handing over of site

Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent
Part-A	Portion without any hindrance	Full site is available with the Client	Immediately after award of work
Part-B	Portions with encumbrances	NIL	-
Part-C	Portions dependent on work of other agencies	NIL	-

Clause 6

Computerized Measure Book (CMB) /
Electronic Measurement Book (EMB)

(i) Mode of Measurement : CMB / EMB

EMB/CMB (As decided by Engineer-in-charge)

Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment

NA

Clause 7 A

Whether Clause 7A shall be applicable

Yes, No Running Account shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board whatever applicable are submitted by the contractor to the Engineer-in-Charge)

Clause 10A

List of testing equipment to be provided by the Contractor at site lab.

As per Annexure – 53 of Standard Operating Procedures (SOP) for CPWD works manual 2024 for Building Works plus other equipment's as per direction of Engineer in charge

Clause 10B(ii)

Whether Clause 10 B (ii) shall be

Not applicable

applicable

Clause 10 C

Component of labour expressed as percentage of value of work

Not applicable

Clause 10CC

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column

Not applicable

Clause 11

Specifications to be followed for execution of work

CPWD Specifications 2019 volume -I & II with correction slip upto last date of submission of bid

Clause 12

12.2 Deviation Limit beyond which clauses 12.2 (c) shall apply for building work

100% (Hundred percent)

12.4 (i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work sub-head in DSR and related items)
(ii) Deviation Limit for items mentioned in earth work sub-head of DSR and related items

100% (Hundred percent)

100% (Hundred percent)

Clause 16

Competent Authority for deciding reduced rates.

EE&SM(C)-I/IIT(ISM)/CPWD/Dhanbad

Clause 18

List of mandatory machinery, tools & plants to be deployed by the Contractor at site

Machinery required for completion of the work as per decision of Engineer-in-Charge
- As per actual requirement.

Clause 19 C	-	EXECUTIVE ENGINEER & SENIOR MANAGER (C)-I, IIT (ISM), CPWD, DHANBAD to decide penalty for each default
Clause 19 D	-	EXECUTIVE ENGINEER & SENIOR MANAGER (C)-I, IIT (ISM), CPWD, DHANBAD to decide penalty for each default
Clause 19 G	-	EXECUTIVE ENGINEER & SENIOR MANAGER (C)-I, IIT (ISM), CPWD, DHANBAD to decide penalty for each default
Clause 19 K	-	EXECUTIVE ENGINEER & SENIOR MANAGER (C)-I, IIT (ISM), CPWD, DHANBAD to decide penalty for each default

Clause 25 : Settlement of Dispute by Conciliation and Arbitration

Sl. No.

- | | | |
|-------|---------------------------------|----------------------------------|
| (i) | Conciliator | : ADG (Patna), CPWD, Patna |
| (ii) | Arbitrator Appointing Authority | : CE&ED, IIT(ISM), CPWD, Dhanbad |
| (iii) | Place of Arbitration | : Dhanbad |

Clause:- 32

Sl. No.	Minimum Qualification of Technical Representative.	Discipline	Designation (Principal Technical /Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i).	
						Figures	Words.
(1)	Graduate Engineer. Or Diploma Engineer	Civil	Project Planning/Site/billing Engineer	Two Years Or Five Years	One	Rs. 15,000/-	Rupees Fifteen thousand only.

Assistant Engineers retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holder with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

The contractor shall submit a certificate of such employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every account bill/final bill and shall produce evidence if at any times so required by the Engineer-in-charge.

Clause-38:-

- | | | |
|------|---|--|
| (i) | Schedule / Statement for determining with theoretical quantity of cement & bitumen | As per Delhi Schedule of Rates 2023 amendments up-to the last date of submission of bids |
| (ii) | Variations permissible on theoretical quantities | |
| (a) | Cement for works with estimated cost | 2% plus / minus |
| (b) | Bitumen for all work | 2.5% Plus side only and NIL on minus side |
| (c) | Steel Reinforcement and structural steel sections for each diameter, section and category | 2% plus / minus |
| (d) | All other materials | NIL |

ADDITIONAL CONDITIONS

1. Unless otherwise specified, CPWD Specifications 2019 volume I - II with up to date corrections slips shall be followed in general. Any additional item of work, if taken up subsequently, shall also conform to the relevant CPWD specifications mentioned above. Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed:
 - i) Description of items as given in Schedule of quantities.
 - ii) Additional conditions
 - iii) Additional specifications.
 - iv) General Conditions of Contract for CPWD works 2023 with upto date correction slip and CPWD Specifications.
 - v) I.S. Codes.
 - vi) Decision of Engineer-in-Charge.
2. **INSPECTION OF SITE**

The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labour etc. constraints put by local regulations, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence their tenders.
3. The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of the Engineer-in-Charge. The Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be held responsible for the accuracy thereof and / or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.
4. Unless otherwise specified in the schedule of quantities, the rates of all items of work shall be considered as inclusive of executing all work, wherever required, in or under water and / or liquid mud, including bailing out water encountered from any source such as rain, floods, tides ingress of water through pressure relieving sleeves left during PCC at base, sub- soil water table being high and / or any other source whatever. During entire execution of work, the contractor shall carry out dewatering (at his own cost), as and when required or specified herein. Nothing extra shall be payable on this account.
5. The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out , all in accordance with true intent and meaning of the CPWD Specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and / or described in the Specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be

payable on this account.

6. Unless otherwise provided in the Schedule of Quantities, the rates quoted by the Contractor shall be inclusive of carrying out the works at and / or upto all heights, lifts, leads and depths. The contractor shall make all arrangements for the same. Nothing extra shall be payable on this account.
7. Accommodation for labour huts, site office, stores, installation of batching plant etc. will be given at site as per availability only. In case, space is not available at the site of work, Contractor shall make his own arrangements to provide such accommodation as per the rules of the local bodies. He shall make his own arrangements for stores, field office etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained. Nothing extra shall be payable on this account.
8. **SUBMISSIONS IMMEDIATELY AFTER AWARD OF WORK**
The Contractor shall submit the following details immediately after award of work.
 - a. List of Equipments proposed to be deployed for this work.
 - b. Site organization chart with Bio-data of Project Manager and Key Personnel proposed to be deployed at site.
 - c. A certified copy of Power of Attorney in the name of person who has signed the tender document.
 - d. The details of shuttering and scaffolding material proposed to be used to complete the entire R.C.C structural work commensurate with overall stipulated period for completion of work.
9. The contractor shall prepare and submit a tentative integrated Bar Chart (for Civil and E & M services) clearly indicating the various activities, in a manner to complete the entire work covered under this tender within the stipulated period. The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. The contractor shall adhere to all the rules & regulations and byelaws laid down by local Bodies and any other statutory bodies, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the Department.
10. Royalty at the prevalent rates shall be paid by the Contractor or the RMC supplier as per the terms of supply between them on all materials such as boulders, metals, sand and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned. Nothing extra shall be payable on this account.
11. No foreign exchange shall be made available by the Department for importing (purchase) of equipments, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.
12. The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and

claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

13. SIGN BOARDS

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies. Nothing extra shall be payable on this account.

14. INTEGRATED SERVICE DRAWINGS

The contractor shall prepare following drawings for various civil and electrical services showing details of lay out plan including sectional elevations and submit the same for the approval of Engineer-in-Charge.

- a) Plumbing drawings GI and CI line
- b) Layout of conduits, switchboard, Distribution boxes etc.

Subsequently Integrated drawings shall be prepared and submitted by the Contractor as per local Byelaws and as per the site conditions to facilitate convenient installation as well as maintenance. Nothing extra shall be payable on this account.

15. PROTECTIVE / SAFETY MEASURES

Necessary protective and safety equipments shall be provided to the Site Engineer, workers & Supervisory staff by the Contractor at his own cost and to be used at site.

The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipments, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipments in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipments, Tools & Plants, machineries etc provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipments and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted / removed from site without the permission of the Engineer-in-Charge.

16. DISPLAY PERMISSIONS

The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works at his site office.

17. REMOVAL OF 'MULBA' ETC. FROM SITE

The Contractor shall not stack building material / mulba / muck on any other land outside site barricading. The muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and the Contractor shall obtain regulations of the concerned authorities and all necessary permissions in this regard from the local bodies. Nothing extra shall be payable on this account. The contractor shall be liable to pay any charges/penalties as may

be levied by local bodies. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

18. TOOLS AND PLANTS

The Department shall supply no tools and plants including any special T&P etc. and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

19. COORDINATION WITH OTHER AGENCIES

The Contractor shall conduct his work so as not to interfere with or hinder the progress of the work being performed by other Contractors or by the Engineer-in-Charge. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence.

20. FACILITIES BY THE CONTRACTOR TO THE OTHER CONTRACTORS / AGENCIES

The Contractor shall cooperate with and provide the facilities to the sub Contractors and other agencies working at site for smooth execution of the work. The Contractor shall

- a) Allow use of scaffolding, toilets, sheds etc.
- b) Properly co-ordinate their work with the work of other contractors.
- c) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
- d) Provide electricity and water at mutually agreed rates.
- e) Provide hoist and crane facilities for lifting material.
- f) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
- g) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
- h) Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator. The contractor shall indemnify the Department against any claim(s) arising out of such disputes.
- i)

21. The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The wastewater, slush etc. shall not be allowed to be collected at site. It may be directly pumped into the creek with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

22. PREVENTION OF NUISANCE AND POLLUTION

The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipments for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep

the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get first hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

23. SCAFFOLDING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

24. The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen 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 other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

25. For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

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

27. The Contractor shall render all help and assistance in documenting the total sequences of this project by way of photography, slides, audio / video recording etc. Nothing extra shall be payable to Contractor on this account. However, cost of photographs, slides, audio / videography etc. shall be borne by the Department. The original films shall be the property of the Department. No copy shall be prepared without the prior approval of the Engineer- in - Charge.

28. The Contractor shall make all necessary arrangements for protecting from rains, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account. Also, no claims for hindrance shall be entertained on this account.

29. INCIDENTAL CHARGES

For all items of work, the entire incidental charges of any kind including cartage, storage, wastage and safe custody of material etc. shall be borne by the Contractor and no claim of any kind, whatsoever, shall be entertained on this account.

30. STORAGE OF MATERIAL AT SITE

No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All

consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

31. NO WAIVING OF LEGAL RIGHTS AND POWERS

The Engineer-in-Charge shall not be precluded or stopped from taking any measurements, and framing of estimates or detaining any certificates made either before or after the completion and acceptance of the work and payment, from showing the true amount and character of the works performed and materials furnished by the Contractor and from showing that any such measurements, estimates or certificates untrue or incorrectly made and that Engineer-in-Charge shall not be precluded or stopped from recovering from the Contractor such damages as it may be sustained by reasons of his failure to comply with the terms and conditions of the contract.

32. FINAL TESTING OF THE INSTALLATION

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

33. Unless otherwise provided in the Schedule of quantities, the rates of tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account. Payment for centering, shuttering, however, if required to be done for heights greater than 3.5 m shall be admissible at rates arrived at in accordance with clause 12 of the agreement if not already specified.
34. The contractor shall make his own arrangements for water and for obtaining electric connections if required and make necessary payments directly to the department concerned.
35. Other agencies doing work related with this project will also simultaneously executed the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying, burying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps, etc. as may be required for other agencies conduits for Electrical wiring/cables will be laid in a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same.
36. Some restrictions may be imposed by the security staff etc. on the working and for movement of labour, materials etc. The contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on this account.
37. (a) The building for components will be carried out in the manner complying in all respect with the requirements of relevant by laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra will be paid on this account.
(b) The contractor shall comply with proper and legal orders and directions of the Local or Public authority or Municipality and abide by their rules and regulations and pay all fees and charges, which he may be liable.
38. The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
39. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.
40. Testing of materials:

Samples of various materials required for testing shall be provided free of charge by the Contractor including its transportation to testing laboratories. **The cost of tests for all materials shall be borne by the Contractor. The test shall be carried out by the contractor from the approved laboratory as mentioned in NIT page no. 37 para 5.8.**

Testing of materials shall only be got conducted from any Government Testing Labs as per direction and decision of the Engineer-in-charge. However, in case of exigencies of some works, testing may be permitted from the approved Private Labs (NABL Accredited only) other than Government Testing Labs on written request by the Contractor and duly approved by the NIT approving authority in writing. However, permission for testing materials from Private Labs (NABL Accredited only) depends solely at the discretion of the NIT approving authority.

41. The Structural and Architectural drawings shall be all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities, appendent with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless and otherwise given in writing by the Engineer-in-Charge.
42. For the purpose fo recording measurements and preparing running account bills, the abbreviated nomenclatures indicated in the publications “Abbreviated nomenclature of item of DSR’2023” with up to date correction slips shall be accepted. The abbreviated nomenclature shall be taken to cover all the materials and operations as per the complete nomenclature of the relevant items in the agreement and other relevant specifications. In the case of items for which abbreviated nomenclature is not available in the above cited publication and also in case of extra and substituted items of works for which abbreviated nomenclature is not provided in the agreement, the full nomenclature of the items shall be reproduced in the measurement books and bill forms for running account bill. The full nomenclature of the items shall be adopted in preparing abstract of final bill form in the measuremet book and also in the bill form for final bill.
43. Public Procurement (Preference to Make in India) order 2017 issued by competent authority of Government of India shall be implemented during selection of materials and execution of work accordingly.
44. Agency shall ensure availability of mining materials and procure the same in advance. No claim shall be entertain on account of non availability of mining materials (sand ,stone chips etc.) and monsoon
45. Ageny shall quotate their rate considering 18% GST on work contract.

SPECIAL CONDITIONS

1. The contractor shall not store/dump construction material or debris on metalled road.
2. The contractor shall get prior approval from Engineer-in-charge for the area where the construction material or debris can be stored beyond the metalled road. This area shall not cause any obstruction to the free flow of traffic/inconvenience to the pedestrian. It should be ensured by the contractor that no accidents occur on account of such permissible storage.
3. The contractor shall take appropriate protection measure like raising wind breakers of appropriate height on all sides of the plot/area using CGI sheets or plastic and/or other similar material to ensure that no construction material dust fly outside the plot area.
4. The contractor shall ensure that all the truck or vehicle of any kind which are used for construction purpose/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precaution that each vehicle is properly cleaned and dust free to ensure to exit for their destination and also it is to be ensured that no dust, sand or any other particles are released in air to pollute.
5. The Contractor shall provide mask to every worker on the construction site and hand gloves specially who are involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles and injury respectively.
6. The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building.
7. The contractor shall ensure that C&D waste is transported to the C&D waste site only and due record shall be maintained by the contractor.
8. The contractor shall compulsorily use of wet jet in grinding and stone cutting.
9. The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
10. The contractor shall carry out on-Road-inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
11. The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
12. The Contractor shall use vehicles having up to date pollution control certificate.
13. The Contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.
14. Unless otherwise specified in the schedule of quantities, the rates for respective items shall be all inclusive and apply to the following: -
 - a) All lifts & all heights, floors including terrace, leads and depths.
 - b) All labour, material, tools and plants and other inputs involved in the execution of the item.
 - c) Any of the conditions and specifications mentioned in the tender documents.
 - d) Pumping / bailing out surface water / rain water / sub soil water, if necessary for any reason.
 - e) Providing sunk flooring in bath-rooms, kitchen, etc.
 - f) Any legal or financial implications resulting out of disposal of earth, if any.
 - g) Payment of Royalty at the prevailing rates, if any, on the earth, boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work shall be

made direct to revenue authorities. The proof for deposition of royalty amount have to be submitted in the office of Engineer-in-Charge. If the agency fails to submit such proof before every running account bill, then amount as per prevailing rate along with penalty as per state government circular will be deducted from running account bill and will be deposited in the concerned office by the Engineer-in-charge. No claim in this account shall be entertaining by department once royalty will be deposited to state government in later date.

- h) Performance test of the entire installation(s) before the work is finally accepted.
 - i) Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.
 - j) All incidental charges for cartage, storage and safe custody of materials brought to site.
15. The agency has to fill the gap with silicon sealant in between the plaster surface and aluminium / MS steel / uPVC windows / Door frame without any extra cost.
16. Agency has to make suitable approach for carrying the material / labour etc. required for construction without any additional cost.

NOTE : No extra payment will be made to the Contractor for the operation of the above activity as mentioned at SI. No. 1 to 17.

Maintenance of Material at Site (MAS) Register –

1. All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. Authenticated copies of bills / Invoice of materials which has to be entered in the MAS register are to be submitted by the contractor to CPWD before making payments.
2. Cement Register shall be reviewed by EE at least once in a month.
3. It will be deemed that work so measured, checked and paid is of the required quality and standard, both in respect of ingredients as well as the intended functions it is supposed to perform. In other words, the work would not only meet the required specifications but also the workmanship as per sound engineering practices.
4. The PM/CE shall also have to check and sign these reports at suitable intervals in token of his ensuring compliance of the 'Quality Assurance Plan' for the work.
5. Copies of bills / Invoice : Agency will provide authenticated copies of itemize bills of materials which has to be entered in the MAS Register viz steel, cement, bitumen, paint, water proofing or any other item suggested by the Engineer-in-Charge.

ADDITIONAL SPECIFICATION

1. The work shall be executed and measured as per metric dimensions given in the Schedule of quantities, drawings etc. (F.P.S. units wherever indicated are for guidance only).
2. The following modifications to the above specifications and some additional specifications shall however apply:
 - i) All stone aggregates shall be of hard stone variety to be obtained from approved quarries or from any other quarries where the material meeting to required quality and specification is available after approval from the Engineer-in-charge.
 - ii) Sand to be used for cement concrete work, mortar for masonry and plaster work shall be of standard quality. Sand shall be obtained from approved location or from any other place where the material meeting to required quality and specification is available after approval from the Engineer-in-charge.
 - iii) Brick of class designation 7.5 shall be obtained from any kiln where the material meeting to required quality and specification is available after approval from the Engineer-in-charge.
 - iv) Fly ash bricks of required designation and strength shall be used in the work. Bricks shall be obtained from approved manufacturer only. The material should meet to required specifications.
 - (v) Contractor should take necessary approval with respect to design/ pattern/ colour/brand etc. of any item/material from Engineer-in-charge or his authorized representative for execution at construction site.
3. Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the last date of submission of bid.
4. Unless otherwise specified in the schedule of quantities the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source, such as rains, floods, and sub-soil water table being high due to any other cause whatsoever.
5. **RCC Work & DESIGN MIX CEMENT CONCRETE**

The contractor shall be required to submit two separate design mix of concrete with and without using plasticizers, separately. The decision of the engineer-in-charge to specify the design mix of concrete based on above shall be final.

 - 5.1 Coarse aggregate: As per CPWD Specifications
 - 5.2 Fine Aggregate: As per CPWD Specifications.
 - 5.3 Water: It shall conform to requirements laid down in IS:456: 2000 and CPWD specifications.
 - 5.4 Cement: Cement arranged by the contractor will be PPC (in bags) conforming to IS:1489-Part-I. If for any reasons, cement other than that specified in this para for example OPC of grade 43 or higher grade is brought to site by contractor, the issue, payments rate as well as the quantity to be used in the design mix concrete will remain unchanged.
 - 5.5 Slump: Design slump should be clearly specified in the mix design.
 - 5.6 Admixtures shall not be used without approval of Engineer-in-charge. Wherever required, admixtures of approved quality shall be mixed with concrete as specified. The admixtures shall conform to IS: 9103. The contractor shall not be paid anything extra for admixture required for achieving desired workability without any change in specified water cement ratio for RCC/CC work.
 - 5.7 Grade of Concrete : The compressive strength of various grades of concrete shall to be given as below:

	Grade designation	Compressive strength on 15 cm cubes min. 7 days (N/mm ²)	Specified characteristic compressive strength at 28 days (N/mm ²)	Minimum cement quantity (Kg. per cum. Mtr.)	Maximum water cement ratio
I	M 25	As per design	25	As per CPWD specification/ BIS Code	0.50
II	M 30	As per design	30		0.45
III	M 35	As per design	35		0.45
IV	M 40	As per design	40		0.40

Note-

- (i) In the designation of a concrete mix letter M refers to the mix and number to the specified characteristic compressive strength of 15 cm x 15 cm x 15 cm – cube 28days expressed in N/mm²
- (ii) The minimum/maximum cement content for design mix concrete shall be maintained as per the quantity mentioned above. In case where the quantity of cement required is higher than the minimum specified above to achieve desired strength based on an approved mix design extra shall become payable to the contractor.
- (iii) Design slump has to be constantly monitored and maintained during placing of concrete through slump tests carried out as per CPWD specification 2019 Vol. 1 for Mortar, Concrete and RCC works, and records maintained accordingly.

5.8 The Contractor shall engage one of the following approved laboratories / test house for designing the concrete mix in accordance with relevant IS Code and to conduct laboratory tests to ensure the target strength & workability criteria for a given grade of concrete: -

- (i) IIT Kharagpur / BIT Sindri/IIT Patna /NIT Jamshedpur/Patna
- (ii) Jadavpur University, Kolkata
- (iii) National Institute of Technology, Durgapur
- (iv) BIT Mesra, Ranchi

The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department.

In the event if all the **above** laboratories are unable to carry out the requisite design / testing, the contractor may have it done from any other laboratory with prior approval of the ADG-Patna or his successor.

5.9 The contractor shall submit the mix design report from any of above approved laboratory for approval of Engineer-in-Charge within 40 (Fourty) Days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the mix design is approved by the Engineer-in-charge. In case of white portland cement and the likely use of admixtures in concrete with PPC/white portland cement the contractor shall design and test the concrete mix by using trial mixes with white cement and/or admixtures also for which nothing extra shall be payable.

5.10 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised laboratory mix design report conducted at laboratory established at site shall be submitted by the contractor as per the direction of the Engineer-in-Charge.

Note:- Extra Cement upto 10% of the minimum specified cement content in design mix shall be payable separately.

In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion the either re-design the mix or bear the cost of extra cement.

- 5.11 The contractor shall be free to use Ready Mix Concrete (RMC)/ Batch mix concrete. The contractor shall ensure that transit mixtures shall transport the concrete to site. All the precautions shall be taken during the transportation and handling of concrete to achieve the desired strength, durability, etc. as envisaged in the Mix Design. Contractor has to get the approval from Engineer-In-Charge regarding source of RMC by giving the details of such plants indicating name of owner / company, its location, technical establishment, past experience and text of Memorandum of Understanding (proposed to be entered between

purchaser and supplier). The Engineer-in-Charge, after satisfying himself about quality / capability of the company shall give approval in writing (subject to drawing of MOU). The MOU shall be drawn with RMC plant owner / company and submitted to Engineer-in-Charge within a week of such approval. The contractor will not be allowed to purchase RMC without completion of above formalities for use in the project. Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, production, transportation and placement etc. The Engineer-in-Charge will reserve the right to deploy his supervisor at plant site to inspect at any such stage and reject the material / concrete etc if he is not satisfied about quality of material / product.

6. Trial Batches

The designed mix proportion shall be checked for target mean compressive strength by means of trial batches.

The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out work ability tests.

The work ability of Trial Mix No. 1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the work ability.

With the modified water content, the mix proportions shall be recalculated by keeping with water cement ratio unchanged. The mix proportions, as modified, shall form the Trial Mix No.2 and tested for the specified strength and work ability.

In addition, Trial Mix No. 3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio ± 10 percent of the specified value and tested for their design characteristics.

All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the contractor including redesigning of the concrete mix wherever required and directed by Engineer-in-Charge.

7. APPROVAL OF DESIGN MIX:

The mix design for a specified grade of concrete shall be done for a target mean compressive strength $T_{ck} = F_{ck} + 1.65 s$. Where F_{ck} = Characteristic compressive strength of 28 days = Standard deviation which depends on degree of quality control. The degree of quality control for this work is "good" for which the standard deviation (s) obtained for different grades of concrete shall be as below:

Grade of Concrete	For "Good" quality of control
M 25	4.00
M 30	5.00
M 35	5.00
M 40	5.00

of the six specimen of each set three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days.

- 7 (a) All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the contractor.
- 7 (b) The batching plant shall conform to IS:4925. It shall have the facilities of presetting the quantity to be weighed with automatic cutoff when the same is achieved.

Concreting at places may have to be resorted to through concrete pump for which nothing extra shall be paid.

- 7 (c) All other operations in concreting work like Mixing, Slump, Laying Placing of concrete, compaction curing etc. not mentioned in this particular specification for Design Mix of concrete shall be as per CPWD specification.

**7(d) WORK STRENGTH TEST
TEST SPECIMEN**

Work strength test shall be conducted in accordance with IS: 456 on random sampling. Each test shall be conducted on six specimens, three of which shall be tested at 7 days and remaining three at 28 days.

7 (e) TEST RESULTS OF SAMPLE

The test result of the sample shall be the average of the strength of three specimen. The individual variation shall not be more than 15 percent of the average. If more, the test results of the sample are invalid. 90% of the total test shall be done at the laboratory established at site by contractor and remaining 10% in the laboratory of CPWD or in any other laboratory as directed by the Engineer-in-Charge.

Lot size

The minimum frequency of sampling of concrete of each grade shall be according to the following:-

Quantity of concrete in the work cubic metre per day	Number of samples.
1-5	1
6-15	2
16-30	3
31-50	4
51 & above	4 + one additional sample for additional 50 cubic metre or part thereof.

Note: At least one sample shall be taken from each shift.

8. FREQUENCY OF TEST:

The minimum frequency of sampling of concrete of each grade shall be one sample for every 50 cum or part thereof. At least one sample shall be taken from each shift. 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in any laboratory mentioned in Para 3.9 above.

9. STANDARD OF ACCEPTANCE:

10. Acceptance criteria of design mix shall be in accordance with Para 5.8.3 of CPWD Specification 2019 Volume I.
11. For cast-in-situ (if required), the contractor has to arrange at site centering and shuttering as given in Proforma of Schedule before one month from stipulated date of start of work. Only M.S. centering / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering as per site requirement may be used on specific request from contractor as approved by the Engineer-in-Charge. No extra payment shall be made on any of these grounds
12. In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the Contractor.
13. As per general engineering practice, level of floors in toilet / bath, balconies, corridors shall be kept 12mm to 20mm lower than corridor/ adjacent rooms/ general floors and shuttering should be adjusted accordingly and slabs should be laid with slope towards the drainage point. Nothing extra is payable on this account.

14. FORM WORK

- 14.1 The work shall be done in general as per CPWD Specifications.
- 14.2 Only M.S. centering / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, shutter-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the Engineer-in-Charge. Steel shuttering as approved by the Engineer-in-Charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces required to complete the shuttering panels. Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work. The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound shall be applied on the surface of the shuttering plates in the requisite quantity before assembly of steel reinforcement.
- 14.3 For the execution of centering and shuttering, the contractor shall use propriety "Reebole" chemical mould release agent of FOSROC or equivalent as shuttering oil as approved by Engineer-in-charge and nothing extra shall be paid on this account.
- 14.4 Double steel scaffolding having two sets of vertical supports shall be provided for external wall finish, cladding etc. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding platform shall be fixed. Scaffolding shall have steel staircase for inspection of works at upper levels.
- 14.5 Nothing extra shall be paid for the centering and shuttering, circular in shape whenever the form work is having a mean radius exceeding 6m in plan.
- 14.6 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the Contractor.
- 14.7 As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm lower than general floors as required. Shuttering should be adjusted accordingly. Nothing extra is payable on this account.
- 14.8 Concreting of upper floor shall not be done until concrete of lower floor has set at least for 14 days but form work and reinforcement can be taken up after the concrete has set at least for three days.

15. STAINLESS STEEL CRAMPS

The size & shape of the cramps shall be as per drawing and as per directions of Engineer-in-charge. The samples of steel cramps should be got approved in advance before starting the stone cladding work.

16. FLOORING

The rate of items of flooring is inclusive of Providing Sunken Flooring in Bathrooms, Kitchen, W.C., etc. and nothing extra on this account is admissible.

17. WOOD WORK

The samples of species of timber/PVC to be used shall be deposited by the contractor with the Executive Engineer before commencement of the work. The contractor shall produce cash vouchers and certificates from standard kiln seasoning plant operator about the timber section to be used on the work having been kiln seasoned by them, failing which it would not be so accepted as kiln seasoned.

- 17.1 Factory made shutters, as specified shall be obtained from factories to be approved by the Engineer-in-charge and shall conform to IS: 2202 (Part-I) 1991. The contractor shall inform well in advance to the Engineer-in-charge the names and address of the factory where from the contractor intends to get the shutters manufactured. The contractor will place order for manufacture of shutters only after written approval of the Engineer-in-charge in this regard is given. The contractor is

bound to abide by the decision of the Engineer-in-charge and recommend a name of another factory from the approved list in case the factory already proposed by the contractor is not found competent to manufacture quality shutters. Shutters will, however, be accepted only if this meets the specified tests. The contractor will also arrange stage-wise inspection of the shutters at factory of the Engineer-in-charge or his authorized representative. Contractor will have no claim if the shutters brought at site are rejected by Engineer-in-charge in part or full lot due to bad workmanship/quality. Such shutters will not be measured and paid and the contractor shall remove the same from the site of work within 7 days after the written instructions in this regard are issued by Engineer-in-charge or his authorized representative.

18. STEEL WORK

All welded steel work shall be tested for quality of weld as laid down in IS: 822-1970 before actual erection.

19. INTERNAL WATER SUPPLY AND SANITARY INSTALLATIONS

- 19.1 Centrifugally cast (spun) iron S & S pipes and G.I. pipes wherever necessary shall be fixed to R.C.C. columns, beams etc. with rawl plugs and nothing extra shall be paid for this.
- 19.2 The contractor shall be responsible of the protection of the sanitary and water supply fittings and other fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.

20. VARIATION IN CONSUMPTION OF MATERIALS

The variation in consumption of material shall be governed as per CPWD specifications and clauses of the contract to the extent applicable.

21. CONDITIONS

- 21.1 The contractor will have to work according to the programme work, decided by the Engineer-in-Charge. The contractor shall also construct a sample unit complete in all respects within time specified by the Engineer-in-Charge and this sample unit shall be got approved from the Engineer-in-Charge before mass construction is taken up. No extra claim whatsoever beyond the payments due at agreement rates will be entertained from the contractor on this account. The contractor shall take instructions from the Engineer-in-Charge for stacking of materials in any place.
- 21.2 No excavated earth or building materials shall be stacked on areas where other buildings, roads, services of compound wall are to be constructed.
- 21.3 If as per Municipal rules the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide such accommodation as is acceptable to local bodies and nothing extra shall be paid on this account.
- 21.4 Grey cement bags shall be stacked/stored in separate godown to be constructed by contractor at his own cost as per (which is only indicative and actual size will depend on the site requirements) at page 23 of CPWD specification 2019 Vol. I with weather leak proof roofs and walls. Each godown shall be provided with single door with two locks. The keys of one lock shall remain with CPWD Engineer-in-Charge of work and that of the other lock with the authorized agent of the contractor at the site of work so that the cement is removed from the godown according to the daily requirement with the knowledge of both the parties and proper account maintained in standard proforma.
- 21.5 The contractor is responsible for the safe custody of the materials issued to him even if the materials are under double lock system.

- 21.6 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.
- 21.7 The standard sectional weights referred to as standard tables in Para 5.3.4 in specifications for works, 2019 Vol. I & II vide page 135 of Table-5.4 to be considered for conversion of length of various size of M.S. bars/cold twisted bars and Thermo Mechanically Treated Bars into weight are as under: [Note: These are as per clause 6.2 of IS:1786].

TABLE

Nominal Size	Weight KG/M	Size (Diameter MM)	Weight KG/M
6	0.222	25	3.85
8	0.395	28	4.83
10	0.617	32	6.31
12	0.888	36	7.99
16	1.58	40	9.86
20	2.47		

- 21.8 All materials obtained from contractor shall be got checked by the Junior Engineer-in-Charge of the works on receipt of the same at site before use.
- 21.9 Royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand and bajri etc. collected by him for the execution of the work, direct to the Revenue authority or authorized agent of the State Government concerned or Central Government. In event of non submission of royalty challan with bills the necessary deduction shall be made as per guideline issued from State Government.
- 21.10 For all kind of R.C.C. work PPC (Portland Pazzolana Cement) shall be allowed to be used.

22.0 TESTING OF MATERIAL

- 22.1 Grey cement & Thermo-mechanically Treated Bar shall be arranged by the Contractor.
- 22.2 The Contractor shall produce all the materials in advance so that there is sufficient time for testing and approving of the material and clearance of the same before use in work.

23. INTEGRAL WATER PROOFING TREATMENT

The contractor must associate himself with the specialized firm to be approved by the Engineer-in-Charge in writing, for integral cement based water proofing treatment for sunken floors and on roofs. A ten (10) years Guarantee Bond in prescribed Performa as specified in this document must be given by the specialized firm on stamp paper which shall be countersigned by the contractor, in token of his overall responsibility. **In addition 10% (ten percent) of the cost of these items would be retained as Guarantee Bond to watch the performance of the work done.** If any defect is noticed during the Guarantee period for ten (10) years to be reckoned from the date after the maintenance period prescribed in the contract expires it should be rectified by the contractor within seven days and if not attended to, the same will be got done by another agency at the risk and cost of the contractor. However, this security deposit can be released in full, if bank guarantee of equivalent amount for ten (10) years is produced and deposited with the department.

24. Treatment for Roof Surface

- 24.1 The brickbats shall be from well-burnt bricks. The proprietary water proofing compound shall conform to IS: 1856-1975. Before execution of work, water proofing compound has to be brought to site from which random sample would be got tested

and a certificate of it's conforming to IS Code should be produced. The proprietary waterproofing compound shall be added at the rate recommended by the specialized firm but not exceeding 8% (percent) by weight of cement.

- 24.2 The finished surface after waterproofing treatment shall have minimum slope of 1 in 80. At no point shall the thickness of waterproofing treatment be less than 65mm.
- 24.3 While treatment of roof surface is done it shall be ensured that the outlet drain pipes have been fixed and mouths at the entrance have been added and rounded off properly for easy flow of water.
- 24.4 The surface where the waterproofing is to be done shall be thoroughly cleaned with wire brushes. All loose scales shall be removed and dusted off. The surface shall be treated with neat cement slurry admixed with proprietary water proofing compound to penetrate into crevices and fill up all the pores in the surface. This cement slurry shall be applied at the junction of parapet and terrace slab by injection process.
- 24.5 After the slurry coat is laid, layer of well burnt brick bats shall be laid in cement mortar of mix as specified by the specialist firm but not leaner than 1:5 (1 cement: 5 coarse sand) admixed with proprietary water proofing compound to required gradient and joints filled to half the depth. The brickbat of various thickness shall be used to achieve the specified gradient. This layer shall be rounded at the junction with the parapet and tapered toward stop for a height of 300 mm. Curing of this layer shall be done for three days.
- 24.6 After curing, the surface shall be applied with a coat of cement slurry admixed with proprietary water proofing compound.
- 24.7 Joints of brick bat layer shall be filled fully with cement mortar of mix as specified by the specialized firm but not leaner than 1:4 (1 cement: 4 coarse sand) admixed with proprietary waterproofing compound and finally top finished with average 20mm thick layer of same mortar and finished smooth with cement slurry admixed with proprietary water proofing compound. The finished surface shall have marking of 300 x 300 mm false squares to give the appearance of tiles.
- 24.8 Curing of water proofing treatment shall be done for a minimum of ten days.
- 24.9 The Measurement shall be taken along with the finished surface of treatment including the rounded and tapered portion of junction of parapet wall.

25. **Road Work**

25.1 CEMENT CONCRETE PAVEMENT (UNDER ORDINARY CONDITIONS)
Specifications of item 16.37 to be followed except that cement concrete of grade 1:2:4 or specified otherwise to be prepared and compacted.

25.2 CEMENT CONCRETE PAVEMENT UNDER CONTROLLED CONDITIONS

25.2.1 Materials

25.2.1.1 Cement

(a) Cement used on work shall be as per sub head cement concrete of CPWD specifications 2019 (Vol. – I).

25.2.1.2 Water : Water used on work shall conform to SH: cement concrete of CPWD, Specification 2019- Vol. I.

25.2.1.3 Coarse Aggregate : These shall be crushed or broken from hard stones obtained from approved quarry. These shall be clean strong, durable of fairly cubical shape and free from soft, friable, thin elongated and laminated disintegrated pieces. These shall also be free from dirt, organic deleterious and any other foreign matter and adherent coatings and shall satisfy the physical requirements laid down in para 16.37.19 under quality control.

25.2.1.4 Fine Aggregate : This shall be coarse sand conforming to CPWD Specification 2019 Vol. I.

25.2.1.5 Grading of Mixed Aggregates : The grading of all aggregates (coarse and fine aggregates) to be used in the work shall be determined in the laboratory. The coarse and fine aggregates shall be mixed in suitable proportions so that the grading of the mixed aggregates shall be in the range indicated in Table 16.32.

Table 16.32

I.S. Sieve Size (IS 460)	% age passing by weight
45 mm	100
22.4 mm	55 - 60
11.2 mm	45 - 50
5.6 mm	35 - 40
2.8 mm	30 - 35
1.4 mm	20 - 25
710 microns	15 - 20
355 microns	10 - 14
180 microns	2 - 5

Mix Design for Road work :

As per CPWD specification 2019 vol. II with upto date correction slip till completion of work.

MATERIALS ARRANGED BY THE CONTRACTOR

A. CONDITIONS FOR CEMENT

1. In all contracts where departmental issue of cement and steel is not stipulated, special conditions shall be incorporated as below:
 - 1.1 Conditions for Cement (Grey Cement).
 - i) The contractor shall procure 43 grade ordinary Portland cement conforming to IS 8112/Portland Pozzolana Cement (PPC) [conforming to IS:1489 (Part-I)], as required in the work, from reputed manufacturers of grey cement as mentioned in approved list of materials or from any other reputed cement Manufacturer having a production capacity not less than one million 44 tones per annum as approved by **Chief Engineer/ Chief Project Manager for that zone**. Supply of cement shall be taken in 50 Kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the Contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the Contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.
 - ii) Use of 44 Portland pozzolana/ordinary portland/ 44 portland slag cement, admixtures in recommended proportions as per IS : 9103 shall be used in RCC structures in accordance with the circular issued by the Directorate General of Works vide No. egk- fu- @fn-n-vuq@20 fnukad % 16-02-2021- The use of cement shall be regulated as per the following conditions stipulated in the circular dt. 09.04.2009:-
 - a) IS:456-2000 Code of Practice for Plain and Reinforced Concrete (as amended upto date) shall be followed in regard to Concrete Mix Portion and its production as under:
 - (i) The concrete mix design shall be done as "Design Mix Concrete" as prescribed in clause-9 of IS 456 mentioned above.
 - (ii) Concrete shall be manufactured in accordance with clause 10 of above mentioned IS:456 covering quality assurance measures both technical and organizational, which shall also necessarily require a qualified Concrete Technologist to be available during manufacture of concrete for certification of quality of concrete.
 - b) Minimum M25 grade of concrete shall be used in all structural elements made with RCC both in load bearing and framed structure.
 - c) The mechanical properties such as modulus of elasticity, tensile strength, creep and shrinkage of flyash mixed concrete or concrete using flyash blended cements (PPCs) are not likely to be significantly different and their values are to be taken same as those used for concrete made with OPC.
 - d) To control higher rate of carbonation in early ages of concrete both in flyash admixed as well as PPC based concrete, water/binder ratio shall be kept as low as possible, which shall be closely monitored during concrete manufacture. If necessitated due to low water/binder ratio, required workability shall be achieved by use of chloride free chemical admixtures conforming to IS:9103. The compatibility of chemical admixtures and super plasticizers with each set OPC, fly ash and /or PPC received from different sources shall be ensured by trials.

- e) In environment subjected to aggressive chloride or sulphate attack in particular, use of flyash admixed or PPC based concrete is recommended. In case, where structural concrete is exposed to excessive magnesium sulphate, flyash substitution/content shall be limited to 18% by weight. Special type of cement with low C3A content may also be alternatively used. Durability criteria like minimum binder content and maximum water/binder ratio also need to be given due consideration in such environment.
 - f) Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot & arid regions, the minimum curing period shall be 14 days or its equivalent.
 - g) Subject to General Guidelines detailed out as above, PPC manufactured conforming to IS:1489 (Part-I) shall be treated at par with OPC for manufacture of Design Mix Concrete for structural use in RCC.
 - h) Till the time, BIS makes it mandatory to print the %age of flyash on each bag of cement, the certificate from the PPC manufacturer indicating the same shall be insisted upon before allowing use of such cements in works.
 - i) While using PPC for structural concrete work, no further admixing of flyash shall be permitted.
- III. The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer- In- Charge. The cement godown of the capacity to store a minimum of 2000 bags of cement or as decided by NIT approving authority in case less than 100 MT cement is required for the work, shall be constructed by the contractor at site of work for which no extra payment shall be made. For small maintenance works, NIT approving authority shall decide the requirement of the storage/godown.
 - IV. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
 - V. The cement shall be got tested by the Engineer-In-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. The cost of tests of cement shall be borne by the contractor.
 - VI. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made after ensuring structural soundness and stability on the basis of testing. In case of excess consumption no adjustment need to be made.
 - VII. The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in- charge.
 - VIII. The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-In-Charge. If

he does not do so within 3 days of receipt of such notice, the Engineer-In-Charge shall get it removed at the cost of the contractor.

- IX. Chief Engineers/CPMs/ADGs/SDGs may change the brand of Cement depending upon availability in local market but conforming to grade mentioned in the NIT and only with ISI mark, if warranted. The name of manufacturers should be finalized after taking into consideration the availability and cost factor.

B. CONDITIONS FOR STEEL REINFORCEMENT

1. The contractor shall procure ISI marked TMT Bars of Fe 500D grade from the steel manufacturer such as SAIL, TISCON, RINL, Jindal Steel & Power Ltd. and JSW Steel Ltd. Or their authorized dealer having valid BIS License for IS 1786-2008 (Amended – November 2012). If TMT bars of any dia of above mentioned make is not available in market at any time then the contractor on producing non availability certificate from the manufacturers may procure TMT bars of that dia from Steel manufacture as per the following guidelines:
2. The Special Director General of Project Region Kolkata of CPWD shall approve the steel manufactures subject to the guidelines for eligibility criteria and other technical parameters given below.

Credentials for eligibility criteria & other technical parameters for steel manufacturer :

The manufacturer should meet the following eligibility criteria:

- a) The Steel manufacture should have following documentary evidence:
 - i. Certificate of incorporation
 - ii. Memorandum of articles of Association
 - iii. Credit rating of the company from CARE/CRISIL/ICRA (the grading should not be C/D grade for minimum last 3 years)
 - b) The Steel manufacturer must have following licenses and certificates:
 - i. ISI certificate for billets (IS 2830:2012)
 - ii. ISI certificate for TMT Bars (IS 1786:2008 (Amendment -1 November 2012))
 - c) The Steel manufacturer should also preferably have the following licenses:
 - i. ISO 9001:2015
 - ii. ISO 14001:2015
 - iii. OHSAS 18001:2007
 - d) The steel manufacturer should be using iron ore as the basic raw material. The entire gamut of iron and steel production is owned by the same company or its subsidiary company (ies) and the iron making capacity is sufficient matching the steel making capacity, adopting any of the refining technologies for manufacturing steel & TMT Bars as given under are eligible:
 - i. BF-BOF route
 - ii. COREX-BOF Route
 - iii. DRI-EAF Route (Each Electric Arc Furnace should be 100 MT or more)
 - e) Billets produced must be ISI marked (IS 2830:2012)
 - f) The TMT bars produced must be ISI marked (IS 1786:2008)
 - g) The steel manufacturer should have the following in house testing facilities (NABL Accredited):
 - i. Computerized Universal Testing Machine
 - ii. Spectrometer
 - iii. Bend Re-bend facility as per IS : 1786:2008 (Amendment-1 November 2012)
 - iv. Raw material laboratory: Arrangement for testing Carbon, Sulphur & Phosphorous etc.
 - v. Other testing facilities as specified in IS : 1786:2008 & IS : 2830:2012
3. Steel can also be procured from any particular steel manufacturer who has been suo motto approved by the Special Director General of Project Region Kolkata, CPWD.
 4. Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.
 5. The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-Charge.

6. The steel reinforcement bars shall be stored by the contractor at site of work in such away as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
7. For checking nominal mass, tensile strength, bend test & re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than the specified below:

Size of bar	For consignment below 100 tones	For consignment above 100 tonnes
Under 10 mm dia bars	One sample for each 25 50ones or part thereof	One sample for each 40 50 ones or part thereof
10mm to 16mm dia bars	One sample for each 35 50ones or part thereof	One sample for each 45 50ones or part thereof
Over 16mm dia bars	One sample for each 45 50ones or part thereof	One sample for each 50 50ones or part thereof

8. The contractor shall supply free of charge the required steel bars for testing including its transportation to testing laboratories. **The cost of tests shall be borne by the contractor.**
9. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the consumption is less then theoretical consumption including permissible variations leading to under designing of the structure, the work shall be summarily rejected, otherwise recovery at rate so prescribed shall be made after ensuring structural soundness and stability. In case of excess consumption no adjustment need to be made.
10. Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer- in-Charge
11. The standard sectional weights referred to shall be as given in Table 5.4 in para 5.3.4 in CPWD Specification 2019 Vol.-I and will be considered for conversion of length of various sizes of TMT Bars in to standard weight. Record of actual sectional weights shall also be kept dia. And lot wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be terms as Derived Actual Weight.
 - a) If the derived weight is less than the standard weight, then the Derived Actual Weight shall be accepted if it is within the following tolerances specified in IS:1786-2008, otherwise whole lot will be rejected. However, deductions shall be made for the difference in derived actual weight and standard weight at the rate mentioned in clause 10CA for TMT-500D reinforcement bars. Tolerance on nominal mass shall be in accordance with Table 5.4A of CPWD Specification 2019.
 - b) If the derived actual weight is found more than the standard weight, then nothing shall be paid extra for the difference in derived actual weight and standard weight.
12. The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be used in the work. All consignment received at the work site shall be inspected by the Site staff along with

the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.

13. Guidelines for use of reinforcement bars in structures.

- 13.1 For reinforced cement concrete or pre-stressed concrete works, the reinforcement bars shall consist of the following grades conforming to IS 1786 : 2008 (Indian Standard specification for high strength deformed steel bars and wires for concrete reinforcement) : Fe 415, Fe 415D, Fe 415S, Fe 500D, Fe 500S and Fe 550D.
- 13.2 The contractor shall obtain manufacture's certificate stating the process of manufacture, chemical composition and test sheet giving result of each mechanical test applicable to the material purchased and submit it to the Engineer-in-Charge. Each test certificate shall indicate the number or identification mark to be found on the material.
- 13.3 The Engineer-in-Charge shall get each consignment tested for both chemical composition and physical properties (including bend and re-bend test) as specified in IS : 1786 from NABL accredited laboratory any Government laboratory.
- 13.4 Reinforcement bar is one of the most important building materials. Its quality directly affects the life span, resistance to earthquake and durability of the structure. In order to ensure consistent quality of rebars, the NIT approving authority may prescribe reputed bands like SAIL, RINL, Tata, JSW, JSPL in the list of preferred makes. **Corrosion resistant steel rebars should be used. Additional amount of Rs.4.22 (Rupees Four and twenty two paise) per kg shall be paid to the contractor in case CRS steel rebars are used.**
- 13.5 All testing charges of reinforcement (TMT) bars shall be borne by the contractor should be used.

2 Requirement of Construction site.

2.1 Pre-construction Stage

a) Construction Vehicles, Equipment and Machinery

- * All vehicles, equipment and machinery to be procured for construction will conform to the relevant Bureau of India Standard (BIS) norms.
- * Emission from the vehicles must conform to environmental norms.
- * Dust produced from the vehicular movement and other site activities can be mitigated by sprinkling of water.
- * Noise limits for construction equipments will not exceed 75 dB (A), measured at one meter from the edge of the equipment in free area, as specified in the Environment Protection Act, 1986, schedule VI part E, as amended on 19th May, 1993. The maximum noise levels near the construction site should be limited to 65 dB (A) Leq (5 min) in project area.

2.2 Construction Stage

a) Construction Wastes Disposal

- * The pre-identified dump locations will be a part of solid waste management plan to be prepared by the Contractor in consultation with Engineer-in-charge.
- * Contractor will get approved the location of disposal site prior to commencement of the excavation on any section of the project location.
- * Contractor will ensure that any spoils of material will not be disposed off in any municipality solid waste collection bins.

b) Procurement of Construction Materials

- * All vehicles delivering construction materials to the site will be covered to avoid spillage of materials and maintain cleanliness of the roads.
- * Wheel Types of all vehicles used by of the contractor, or any of his sub contractor or materials supplies will be cleaned and washed clear of all dust/mud before leaving the project premises.
- * Contractor will arrange for regular water sprinkling at least twice a day

(i.e. morning and evening) for dust suppression of the construction sites and unpaved roads used by his construction vehicles.

c) Pollution

i) Water Pollution

- * The Contractor will take all precautionary measures to prevent the wastewater during construction to accumulate anywhere.
- * The wastewater arising from the project is to be disposed off in the manner that is acceptable to the Engineer-in-charge.

d) Air and Noise Pollution

- * Contractor will use dust screens and sprinkle water around the construction site to arrest spreading of dust in the air and surrounding areas.
- * Contractor will ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.
- * For controlling the noise from Vehicles, Plants and Equipments, the Contractor will confirm the following:
 - i) All vehicles and equipment used in construction will be fitted with exhaust silencers.
 - ii) Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.
 - iii) Noise emission from compactors (rollers) front loaders, concrete mixers, cranes (movable), vibrators and saws should be less than 75 dB(A).
 - iv) As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Set (15-500 KVA) should be less than $94 + 10 \log_{10} (\text{KVA})$. The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB(A) as mandatory.

e) Personal Safety Measures for Labour

Contractor will provide the following items for safety of workers:

- * Protective footwear and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/sewer line.
- * Welder's protective eye-shields to workers who are engaged in welding works.

2.3 The following provisions shall be maintained by the contractor at site:-

- a) Provide minimum level of sanitation/safety facilities for construction workers to ensure the health and safety of the workers during construction, with effective provisions for the basic facilities such as sanitation, drinking water and safety equipments or machinery.
 - i) All the workers should be wearing helmet and shoes all the time on site.
 - ii) Masks and gloves should be worn whenever and wherever required.
 - iii) Adequate drinking water facility should be provided at site, adequate number of decentralized latrines and urinals to be provided for construction workers.
 - iv) Full time workers residing on site should be provided with clean and adequate temporary hutment. Crèche/Day-care facility should be provided to young children of labourers residing on site.
 - v) First aid facility should also be provided.
 - vi) Overhead lifting of heavy materials should be avoided. Barrow wheel and hand-lift boxes should be used to transport materials onsite.

- vii) Tobacco and cigarette smoking should be prohibited onsite.
 - viii) All dangerous parts of machinery are well guarded and all precautions for working on machinery are taken.
 - ix) Maintain hoists and lifts, lifting machines, chains, ropes and other lifting tackles in good condition.
 - x) Use of durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.
 - xi) Ensure that walking surfaces or boards at height are of sound construction and are provided with safety rails and belts. Provide protective equipments such as helmets.
 - xii) Provide measure to prevent fire. Fire extinguisher and buckets of sand to be provided in fire-prone area and elsewhere.
 - xiii) Provide sufficient and suitable light for working during night.
 - xiv) Ensure that measures to protect workers from materials of construction, transportation, storage and other dangers and health hazards are taken.
 - xv) Ensure that the construction firm/division/company have sound safety policies.
 - xvi) Comply with the safety procedure, norms and guidelines (as applicable) as outlined in NBC 2005 (BIS 2005c).
 - xvii) Adopt additional best practices and prescribed norms as in NBC 2005 (BIS 2005).
- b) Identify roads on-site that would be used for vehicular traffic. Update vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral type that make up the surface base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10-20%. Limit vehicular speed on site 10km/h.
- c) All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust/particulate emissions.
- d) Spills of dirt or dusty materials will be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.
- e) Ensure that water spraying is carried out by wetting the surface by spraying water on:
- i) Any dusty material.
 - ii) An area where demolition works is carried out.
 - iii) Any unpaved main-haul road and.
 - iv) Areas where excavation or earth moving activities is to be carried out.
- f) The contractor shall ensure the following:
- i) Cover and enclose the site by providing dust screen, sheeting or netting to scaffold along the perimeter of a building.
 - ii) Covering stockpiles of dusty material with impervious sheeting.
 - iii) Covering dusty load on vehicles by impervious sheeting before they leave the site.
 - iv) Transferring, handling/storing dry loose materials like bulk cement and dry pulverized fly ash inside a totally enclosed system.
 - v) Spills of dirt or dusty materials will be cleaned up promptly so that the spilled material does not become a source of fugitive dust and also to prevent seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should

- be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.
- vi) Clear vegetation only from areas where work will start right away.
- vii) Vegetate/mulch areas where vehicles do not ply.
- viii) Apply gravel/landscaping rock to the areas where mulching/paving is impractical.
- g) Adopt measures to prevent air pollution in the vicinity of the site due to construction activities. There is no standard reference for this. The best practices should be followed (as adopted from international best practice documents and codes).
- h) Provide hoardings of not less than 3m heights along the site boundary, next to a road or other public area.
- i) The contractor will provide experienced personnel with suitable training to ensure that these methods are implemented. Prior to the commencement of any work, the method of working, plant equipment and air pollution control system to be used on-site should be made available for the inspection and approval of the Engineer-in-Charge to ensure that these are suitable for the project.
- j) Employ measures to segregate the waste on-site into inert, chemical or hazardous wastes. Recycle the unused chemical/hazardous wastes such as oil, paint, batteries and asbestos. The inert waste is to be disposed off to Municipal Corporation/local bodies dump yard and landfill sites.

2.4 Preserve and protect landscape during construction

- a) Following provisions shall be made at site by the contractor to preserve and protect landscape. Nothing shall be paid on this account unless specifically provided for in the BOQ.
To preserve the existing landscape and protect it from degradation during the process of construction. Select proper timing for construction activity to minimize the disturbance such as soil pollution due to spilling of the construction material and its mixing with rainwater. The construction management plan including soil erosion control management plan shall be prepared accordingly for each month and got approved from the Engineer-in-Charge. The application of erosion control measures includes construction of gravel pits and tyre washing bays of approved size and specification for all vehicular site entry/ exits, protection of slopes greater than 10%. Sedimentation Collection System and run-off diversion systems shall be in place before the commencement of construction activity. Preserve and protect the existing vegetation by not disturbing or damaging to specified site areas during construction. The trees that are identified to be retained on site are protected during the construction period using the following measures:
 - i) The damage to roots is prevented during trenching, placing backfill, driving or parking heavy equipments. The dumping of trash, oil, paint and other material is detrimental to plant health. These activities should be restricted to the areas outside of the canopy of the trees.
 - ii) The trees are not used for support; their trunks should not be damaged by cutting and carving by nailing posters and advertisements or in any other way.
 - iii) The lighting of fires or carrying out heat or gas emitting construction activity within the ground covered by canopy of the trees is not permitted.
 - iv) The young trees of saplings identified for preservation within the construction site must be protected using tree guards of approved specification.
 - v) The grades of soil should be maintained around existing vegetation. Lowering or raising the levels around the vegetation should not be allowed unless specifically directed by the Architect/Engineer –in – Charge.

- vi) Maintenance activities should be performed, as and when needed, to ensure that vegetation remain healthy.
- B) Staging is dividing a construction area into two or more sections to minimize the area of soil that will be exposed at any given time. Staging should be done to separate undisturbed land from land disturbed by construction activity and material storage. A CAD plan to be submitted indentifying the areas of sites, which shall be disturbed for the construction activity and apart from these other areas on site should not be disturbed. Measures should be followed for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels and perimeter dike/swale should be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line). The plan should indicate how the above was accomplished on site well in advance of the commencement of the construction activity.
 - i) The Contractor should follow the construction plan as proposed by the architect/landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site. Protect top soil from erosion by collection storage and reapplication of top soil, constructing sediment basin, contour trenching, mulching etc.
 - ii) Spill prevention and control plans should clearly state measures to stop the source of the spill. Measures to contain the spill and measures to dispose the contaminated material and hazardous wastes. It should also state the designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners and petroleum products.
- c) A soil Erosion and Sedimentation Control Plan (ESCP) should be prepared prior to construction and should be applied effectively. Measures for prevention of top soil are given below:
 - i) Top Soil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas and external services. It should be stockpiled to a maximum height of 40 cm in designated areas and reapplied during plantation of the proposed vegetation. The top soil should be separated from the sub soil debris and stones larger than 50 mm in diameter. The stored top soil may be used as finished grade for planting areas post construction or cordoned off undisturbed areas on site. Stockpiled top soil should not be compacted to help process of aeration. It should be stabilized on the top by temporary seeding or plastic sheets to avoid wind and water erosion.
 - ii) Sedimentation basin, a temporary dam or basin at the lowest convenient point of the site should be constructed for collecting, trapping and storing sediment produced by the construction activities. A flow detention facility must also be constructed for reducing peak run-off rates. This would also allow most of the sediments to settle before the run-off is directed towards the outfall.
 - iii) Contour trenching is to be provided which an earth embankment or ridge-and-channel arrangement constructed parallel to the contours, along the face of the slope, at regular intervals on the lengths and slopes greater than 10% (1:10). They are used for reducing run-off velocity, increasing the distance of overland run-off flow. They are also used to hold moisture and minimize sediment loading of surface run-off.
- d) Prepare the list of trees to be felled with reference to the tree survey, Compensate the loss of vegetation (trees) due to the construction activity by compensatory plantation. Replant same native and/or non-invasive species, which existed on the site before elimination, in the proportion of 1:3 (as per the suggestion of the landscape consultant).
- e) The contractor shall prepare and submit 'Spill prevention and control plans' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.
- f) The contractor shall ensure that no construction leach (Ex: cement slurry) is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line).
- g) All lighting installed by the contractor around the site and at the labour quarters during

construction shall be CFL bulbs of the appropriate illumination levels. This condition is a must, unless specifically prescribed.

- h) All paints, adhesives and sealants should comply with the VOC limits prescribed by GHAR, as follows:

Table 1- VOC limits for paints, adhesives and sealants

Paints	VOC limit (g/l)
Non-flat paints	150
Flat (Mat) paints	50
Anti-corrosive/anti-rust paints	250
Varnish	350
Adhesives	VOC limit (g/l)
Wood flooring Adhesive	100
Tile adhesives	65
Indoor carpet adhesives	50
Wood	30

- i) All the building materials and systems used on site must be as per the specifications and approved makes by the consultants.
- j) All required certificates explaining the properties of the building material/system needs to be obtained from the manufacturer/vendor as required by the green building rating authority.
- i) The final certificates would be produced after the approval of green building consultant with necessary due diligence.
- ii) The purchase orders of all the materials made with the manufacturers/authorized vendors should be maintained and shall be provided for the process with due diligence upon request.
- k) Water saving measures as suggested by the consultants need to be followed on site.
- l) Any other site management measures suggested by the green building consultant shall be followed on site.
- m) The contractor shall submit to the Engineer-in-Charge after construction of the buildings, a detailed as built quantification of the following:
- i) Total materials used,
- ii) Total top soil stacked and total reused,
- iii) Total earth excavated,
- iv) Total waste generated,
- v) Total waste reused,
- vi) Total water used,
- vii) Total electricity consumed, and
- viii) Total diesel consumed.
- n) The contractor shall submit to the Engineer-in-Charge, before the start of construction, a site plan along with a narrative to demarcate areas on site from which top soil has to be gathered, designate area where it will be stored, measures adopted for top soil preservation and indicate areas where it will be reapplied after construction is complete.

Special Conditions:

- 1. The contractor shall prepare and submit detailed shop drawings of the complete Hygienic Stainless Steel Kitchen Drainage System including drainage channels, floor gullies, hubless pipes, fittings, supports, invert levels, slopes, pipe routing and connection details for approval of the Engineer-in-Charge before commencement of the work.**
- 2. The contractor shall ensure proper coordination of the drainage system with the kitchen equipment layout and other services to avoid any interference during execution.**
- 3. The entire system shall be fabricated, supplied, installed, tested and commissioned strictly as per the approved drawings and manufacturer's recommendations.**
- 4. Any modification required during execution to suit actual site conditions shall be carried out by the contractor without any extra cost to the department.**
- 5. The contractor shall be fully responsible for the hydraulic design, compatibility, coordination and satisfactory performance of the complete drainage system including channels, pipes and fittings.**
- 6. The quoted rates shall include preparation and submission of shop drawings, obtaining approval from the Engineer-in-Charge, preparation of as-built drawings after completion and all incidental works required for successful completion of the system.**
- 7. No extra payment shall be admissible on account of preparation of drawings, revisions, coordination, testing, commissioning or any incidental works required for completion of the system.**

LIST OF APPROVED MAKE OF MATERIALS

Specification/brands names of materials (Refer materials, whichever are applicable for the scope of work) and finishes approved by the **NIT approving authority** are listed below. However approved equivalent material and finishes of any other specialized firms may be used, in case it is established that the brands specified below are not available in the market but only after approval of the alternate brand by the **NIT approving authority**. (See also condition of contract) :-

Sr. No.	Name of Product/ Material	Preferred Brand Names
1	ORDINARY PORTLAND CEMENT (GREY) (43 GRADE)	ACC, ULTRATECH, AMBUJA, JAYPEE CEMENT & J.K. CEMENT.
2	PORTLAND POZZOLONA CEMENT (GREY) (43 GRADE)	ACC, ULTRATECH, AMBUJA, JAYPEE CEMENT & J.K. CEMENT.
3	WHITE CEMENT	J.K.WHITE, JAIPUR SUPREME PACKAGING PVT. LTD., ULTRATECH CEMENT LIMITED.
4	REINFORCEMENT STEEL	SAIL, TATA STEEL LTD., RINL, JSW STEEL LTD.
5	ADMIXTURES	CICO, SIKA, FOSROC, ASIAN PAINTS SMARTCARE, FERROUS CRETE
6	WATER PROOFING COMPOUND	FOSROC, CICO, KRYTON, BUILDMATE, PIDLITE, SIKA, ASIAN PAINTS SMARTCARE, FERROUS CRETE, MYK LATICRETE
7	AUTOCLAVED AERATED BLOCKS	BILTECH, ECO GREEN, FINECRETE, J.K. LAKSHMI CEMENT LTD., FERROUS CRETE
8	POLYMER MODIFIED ADHESIVE FOR AAC BLOCKS	MYK LATICRETE, FERROUS CRETE, ARDEX ENDURA, ULTRATECH, SIKA.
9	FACTORY MADE PANELLED & WIRE GAUGE WOODEN DOOR/ WINDOW SHUTTERS.	M/S JAIN WOOD INDUSTRIES, KUTTY DOORS, SAMRAT PLYWOOD, NEW JAGDAMBA DOORS, MERINO, KITPLY, AS TIMBER, JAIN DOORS PVT. LTD.
10	FLUSH DOOR SHUTTERS	KUTTY FLUSH DOOR, NATIONAL PLYWOODS, JAIN WOOD INDUSTRIES, MERINO, MINIMAX, CENTURY, ORION, JAIN DOORS PVT. LTD.
11	BLOCK BOARD	MERINO, MINIMAX, NATIONAL, ARCHIDPLY, JAYNA, CENTURY, GREEN PLY.
12	LAMINATES	MERINO, ARCHIDPLY, CENTURY LAMINATES, GREENLAM
13	PRE-LAMINATED PARTICLE BOARD	ARCHIDPLY, CENTURY PLY BOARDS, BALAJI ACTION BUILDWELL, ECOBOARD
14	PARTICLE BOARD (MEDIUM DENSITY)/ VENEERED PARTICLE BOARD	CENTURY PLYBOARDS (INDIAN) LTD., BALAJI ACTION BUILDWELL, EVERGREEN BOARDLAM, ECOBOARD INDUSTRIES LTD.
15	PRE-LAMINATED MEDIUM DENSITY FIBRE BOARD	CENTURY PLYBOARDS, GREEN PLY, BALAJI ACTION BUILDWELL

16	OMS/ MS DOOR FITTINGS	ASHISH, AGGARWAL STEELS, DOOR DEVICES MANUFACTURING COMPANY, MANU ENGINEERING COMPANY, M.C. MOWJEE & CO., SHRI GANPATI DOORS
17	TOILET CUBICALS	GREELAM, MERINO, DORMA, PRAYAG
18	STAINLESS STEEL DOOR/ WINDOW HARDWARE FITTINGS (FIRE RATED AND NON-FIRE RATED)	DORMA, GEZE, KICH , GODREJ , HAFELE , HETTICH
19	ANODISED/ ZINC ALLOY/ ALUMINIUM HARDWARE DOOR/ WINDOW FITTINGS	PULSE, SAVIO, HOPPE, ALUTECH, HINDALCO
20	FRP DOOR FRAMES & SHUTTERS	ASHISH INDUSTRIES, JAYNA, SAINIK (CENTURY PLYWOOD), SELECTED PRODUCTS CO., JAIN DOORS PVT. LTD.
21	uPVC WINDOWS/ DOORS	FENESTA, REHAU,PROMINANCE WINDOW SYSTEM, ALUPLAST
22	uPVC WINDOW/ DOOR HARDWARE FITTINGS (ZINC ALLOY)	PULSE, HOPPE, GU, ROTO, GODREJ, KINLONG
23	WINDOWS BLINDS	VISTA, MAC, HUNTER, DOUGLAS, DE-DÉCOR
24	STRUCTURAL STEEL SUCH AS MS FLATS, SQ.BARS ANGLES ETC.	SAIL, TATA STEEL, RINL, JINDAL STEEL &POWER LTD. AND JSW STEEL LTD.
25	FIRE RATED DOORS (METTALIC/ NON METTALIC)	KUTTY DOORS, NAVAIR, PROMAT, SYNERGY THRISLINGTON , JAIN DOORS PVT. LTD , BHAWANI FIRE (M/S BHAWANI FIRE PROTECTION PVT. LTD.) , ASES (AGNI SURAKSHA)
26	HOT-ROLLED STEEL SECTIONS FOR MS DOORS, WINDOWS AND VENTILATORS	NAV DURGA STEEL CORPN, CRM STEELS P. LTD, SHYAM ISPAT UDYOG, VIMAL, SHIV
27	MILD STEEL DOOR, WINDOWS & VENTILATORS MANUFACTURERS	FRIENDS MANUFACTURING COMPANY, KOTKAPURA, PD INDUSTRIES, SHAKTI INDUSTRIES, STEELMAN INDUSTRIES, SKS STEEL INDUSTRIES, SHIVAM
28	PRESSED STEEL DOOR FRAMES MANUFACTURERS	KRISHNA STEEL FABRICATOR SIRSA, LAXMI STEEL WORKS BAHADURGARH, ASHISH INDUSTRIES GHAZIABAD, ASHWANI & SONS, SHRI GANPATI DOORS, APL APOLLO
29	HOLLOW STEEL SECTIONS	JINDAL INDUSTRIES HISAR, TATA STEEL, STEEL & METAL TUBES (INDIA) PVT. LTD. APL APOLLO
30	STEEL TUBES FOR STRUCTURAL STEEL	JINDAL INDUSTRIES HISAR, TATA STEEL, STEEL & METAL TUBES (INDIA) PVT. LTD. APL APOLLO
31	DASH/ ANCHORING FASTENERS, BOLTS, SCREWS AND NUTS.	HILTI , FISCHER, CKW, WUERTH
32	STAINLESS STEEL RAILING	DORMA, KICH, OM STEEL , D-LINE.
33	CHEQUERRED PRE-CAST CC TILES	NTC, SWASTIK TILE, POOJA CONCRETE FABRICATORS, GTC. DALAL TILES
34	CERAMIC TILES	SOMANY, KAJARIA, ORIENTBELL, RAK, ASIAN GRANITO INDIA LTD, NITCO.
35	VITRIFIED TILES	SOMANY, KAJARIA, ORIENTBELL, RAK, NITCO.

36	ADHESIVE/ GROUTING FOR USE WITH TILES	FERROUS CRETE, MYK LATICRETE, ARDEX EDURA, FAIRMATE, DURA BUILD CARE, SIKKA, ASIAN PAINTS SMARTCARE
37	WOODEN LAMINATE FLOORING	PERGO, KRONOTEX, FLORENCE, UNITEX, ACTION TESA
38	UNPLASTICISED RIGID PVC PIPE & FITTINGS	SUPREME, FINOLEX, PRINCE, KISAN, DIPLAST, PRAYAG
39	GALVANISED STEEL SHEETS (UNCOATED & PRE-COATED)	SAIL, TATA, JINDAL, NCL
40	ROOFING SHEETS (GALVALUME)	CRIL, LLOYDS, INTERACH, MULTICOLOR, BHUSHAN POWER STEEL
41	FALSE CEILING- GYPSUM/ GRG(GLASS REINFORCED GYPSUM)	SAINT GOBAIN, VANS GYPSUM, USG BORAL, LLYOD, DIAMOND CEILING, GYPTECH
42	FALSE CEILING- METAL	ARMSTRONG, DEXUNE, SAINT GOBAIN, HUNTER DOUGLAS, GYPTECH, ANAKON, Hi-STEEL
43	FALSE CEILING- CALCIUM SILICATE	HILUX, AEROLITE, ARMSTRONG, PROLAD, ANAKON
44	FALSE CEILING-MINERAL FIBRE	ARMSTRONG, DEIKEN, DEXUNE, SAINT GOBAIN, PROLAD, ANAKON, GYPTECH
45	ACCOUSTIC: GLASS / WOODEN FIBRE FALSE CEILING AND WOODEN/ FABRIC WALL LINING	ARMSTRONG, DEXUNE, ACCOUSTIBLOK, HIMALYAN ACOUSTICS, ANUTONE, GYPTECH, PROLAD, ANAKON
46	FALSE CEILING-ALUMINIUM POWDER COATED	ARMSTRONG, DEXUNE, SAINT GOBAIN, HUNTER DOUGLAS, Hi-STEEL
47	LIGHT WEIGHT GYPSUM PLASTER	SAINT GOBAIN, ULTRATECH, FERROUS CRETE, USG BORAL.
48	OIL BOUND DISTEMPER/ ACRYLIC DISTEMPER *	NEROLAC ACRYLIC DISTEMPER, TRACTOR ACRYLIC DISTEMPER (ASIAN PAINTS) , MAXILITE ACRYLIC DISTEMPER (ICI), BISON ACRYLIC DISTEMPER (BERGER).
49	INTERIOR EMULSION/ PLASTIC EMULSION*	DULUX ACRYLIC EMULSION/ SOLITAIRE A-1000 (ICI), APCOLITE PREMIMUM EMULSION (ASIAN), BEAUTY GOLD (NEROLAC), SILK (BERGER)
50	ACRYLIC SMOOTH EXTERIOR PAINT*	APEX ULTIMA (ASIAN), DULUX WEATHERSHEILD MAX (ICI), EXCEL (NEROLAC), WEATHERCOAT ALL GUARD (BERGER)
51	DRY DISTEMPER*	NEROLAC, BERGER, ASIAN PAINTS, ICI, JENSON & NICHOLSON (J&N)
52	TEXTURED EXTERIOR PAINT*	NEROLAC, ASIAN PAINTS, ICI
53	SYNTHETIC ENAMEL PAINTS*	DULUX HI-GLOSS (ICI), APCOLITE PREMIMUM GLOSS (ASIAN), NEROLAC HIGH GLOSS (NEROLAC)
54	WOOD PRIMER*	NEROLAC, BERGER, ASIAN PAINTS, ICI
55	STEEL PRIMER*	NEROLAC, BERGER, ASIAN PAINTS, ICI
56	EXTERIOR WALL PRIMER*	EXTERIOR NEROLAC PRIMER, EXTERIOR BERGER PRIMER, EXTERIOR ASIAN PAINTS PRIMER, EXTERIOR ICI PRIMER
57	WALL PUTTY (WHITE CEMENT BASED)	BIRLA WALL CARE, JK WHITE, SARA WALL PUTTY
58	POLYMER MODIFIED SELF CURING PLASTER	MYK LATICRETE, FERROUS CRETE, ARDEX ENDURA, ULTRATECH

59	PAVER/ GRASS PAVER BLOCKS & KERB STONES	NATIONAL TILES CORPORATION, SARAL IMPEX, BALAJI TILES, METRO PAVERS, MGM INFRA, KRISHNA TILES, POOJA CONCRETE FABRICATORS, GIAN NIRMAN LIMITED, A-1 TILES, DALAL TILES
60	VITREOUS CHINA SANITARY WARE	HINDWARE, CERA, PARRYWARE,KAJARIA SANITARY WARE, JOHNSON PEDDER, EURONICS, SOMANY, RAK, PRAYAG
61	WHITE VITREOUS CHINA UNDER COUNTER RECTANGULAR BASIN	CERA, HINDWARE, PARRYWARE, JOHNSON PEDDER,SOMANY, RAK, PRAYAG
62	PLASTIC FLUSHING CISTERN FOR WC AND URINALS	JINDAL, STEEL BIRD, SEEMLINE, VIKRAM PLASTIC, PRAYAG POLYMERS (P) LTD.
63	PLASTIC SEAT COVER OF W.C.	AJANTA POLYMERS, JINDAL MALPINE, JAIN POLYMERS, PRAYAG
64	STAINLESS STEEL SINK	ALLEX, JAYNA, JMD INTERNATIONAL, STEEL CRAFT, SILVER SHINE (M/S BLUESTAR SANITARY INDUSTRIES PVT. LTD) , KINGSTON, PRAYAG
65	MIRROR GLASS	ATUL, MODIGUARD, GOLD PLUS, PRAYAG
66	CENTRIFUGALLY CAST (SPUN) IRON PIPES AND FITTINGS	NECO, BENGAL IRON, DURGAPUR ISPAT UDYOG, SINGHAL IRON FOUNDRY (SKF), KAPILANSH DHATU UDYOG PVT. LTD., RPMF, HIF.
67	HUBLESS CENTRIFUGALLY CAST (SPUN) IRON PIPES	NECO, RAJ PATTERN MAKERS & FOUNDERS, SINGHAL IRON FOUNDRY (SKF).
68	CP FITTINGS & ACCESSORIES	CERA, JAQUAR, HINDWARE, KEROVIT, PRIMA, JAINKO, JAL, KINGSTON, PRAYAG,EURONICS
69	BRASS STOP & BIB COCK	DHAWAN SANITARY UDYOG, JAINKO, SHAKTI, VARDHMAN INDIA PRODUCTS, PRAYAG
70	FERRULES FOR WATER SUPPLY	HIND METAL WORKS, KRITIKA, DRP, SHAKTI
71	BALL COCK WITH ROD	RESP FAUCET INDUSTRIES, DHAWAN SANITARY UDYOG, NEW METAL WORKS, KPR, PRAYAG.
72	POLYETHYLENE WATER STORAGE TANK	SINTEX, VECTUS, KAVERI, PRAYAG
73	STONEWARE PIPES & GULLY TRAPS	SORKHI INDUSTRIES, RK INDUSTRIES, NAVNEET, MOLI CERAMICS, OCR, ANAND
74	PRE-CAST CONCRETE PIPES (NON-PRESSURE)	RAMNIK, BFSP, JAGDAMBHEY SPUN PIPE, GURKIRPA SPUN PIPES
75	GI PIPE	JINDAL (HISSAR), TATA, BST, BHUSHAN POWER STEEL , APL APOLLO
76	GI FITTINGS	UNIK, AVR, ZOLOTO, SANT, HBI, C-BRAND, NVR
77	C-PVC PIPE	PRINCE, JINDAL (FLOWKEM), ASTRAL, AJAY POLYMERS, SUPREME, FINOLEX, JAIN PIPES, PRAYAG
78	WATER METER	CRESCENT, PRINCE, FEDREL, DASHMESH, NBESON,SANT
79	GUN METAL GATE, GLOBE, CHECK VALVES & NON-RETURN VALVES	LEADER, ZOLOTO, SANT, RAJAN METAL INDUSTRIES,SIR, H.B. METALS, HVI, NVR.

80	CENTRIFUGALLY CAST (SPUN) IRON PIPES (CLASS LA).	TRU FORM ENGINEERS, KAPILANSH, ELECTROSTEEL, HITECH METAL CASTINGS.
81	C.I. SLUICE VALVES & REFLEX VALVES	ZOLOTO INDUSTRIES, SANT VALVES, AMCO INDUSTRIES, KIRLOSKAR, SIR, RATAN INDUSTRIAL CORPORATION, HVI, NVR.
82	STAINLESS STEEL PIPES & FITTINGS	JINDAL STAINLESS STEEL, OM STEEL GROUP, V STEEL, VIEGA, RAMPART INDIA PVT. LTD., J-PRESS
83	DUCTILE IRON PIPES & FITTINGS	JINDAL SAW LTD, ELECTRO STEEL, CHANDRANCHAL INFRA, ELECTROTHERAM
84	C.I./ D.I. MANHOLE COVERS & FRAMES	SWASTIKA ENTERPRISES, BENGAL IRON CORPORATION, NECO, BINAY UDYOG, CHANDERANCHAL
85	WATER REPELLANT SILANE CHEMICAL	PIDILITE, FERROUS CRETE, ARDEX ENDURA, ASIAN PAINTS SMARTCARE
86	CORROSION INHIBITORS, MICRO CONCRETE AND MORTAR, CARBON FIBER WRAP, REHABILITATION & RETROFITTING PRODUCTS.	FOSROC, SIKA, BASF, ASIAN PAINTS SMARTCARE
86	ALUMINIUM SECTIONS DOORS / WINDOWS	HINDALCO, JINDAL, INDIAN ALUMINIUM CO. LUMANI
87	BASIC/ TOUGHENED ETC. GLASS	SAINT GOBAIN, ASAHI, MODI, GOLD PLUS GLASS, PILINGTON.
88	APPROVED PROCESSORS FOR PERFORMANCE GLASS/ TOUGHENED GLASS/ HERMETICALLY SEALED/ LACQUERED GLASS etc.	ART & GLASS, MIRAGE TOUGHENED GLASSES (P) LTD., AAR PAR GLASS, VERMA GLASS.
89	STRUCTURAL GLAZING	ALCOB, ALUPRO, ALUPLAX, SP FABRICATORS, SAINT GOBAIN, GLAVERBEL.
90	FAÇADE GLASS OPENABLE FITTINGS	ALUALPHA, SAVIO, HOPPE, ALUTECH
91	GLASS FAÇADE/ GLASS CANOPY WITH SS SPIDER FITTINGS	ALCOB, ALUPRO, ALUPLAX, SP FABRICATORS, SAINT GOBAIN, GLAVERBEL.
92	FRAMELESS GLAZING WITH SS PATCH FITTINGS	DORMA, ASSA ABLOY, GEZE, D-LINE, KICH
93	ALUMINIUM COMPOSITE PANEL	ALUCOBOND, VIRGO, ALUDECOR
94	HIGH PRESSURE LAMINATE	VIRGO , MERINO, GREENLAM
95	MODULAR FURNITURE (FACTORY MADE)	GODREJ, DURIAN, FEATHERLITE, STEELCASE, HERMANMILLER, HAWORTH, ROCKWORTH, GEEKAN
96	READY MIX PLASTER	KERAKOLL , ARDEX ENDURA, FERROUS CRETE
97	CRYSTALLINE INTEGRAL WATERPROOFING	PENETRON, XYPEX, SIKA, FOSROC, VELOSIT, STERLING TECHNO TRADE, ZYPEXX BIOTECH
98	WPC Door frames and shutters	ALSTONE INDIA, FLORESTA, PARASNATH POLYCHEM
99	GRC Jali	DALAL, ASIAN, SWASTIK, SHALINI
100	Kitchen Drain Equipment	ACO INDIA, VSG, SANIPURE, GUTTERMAN

*** Batch test certificate of Paints and Primer shall be supplied along with each lot.**

Note: (i) The EE&SM(C)-I, IIT(ISM), CPWD, Dhanbad reserves the right to
(ii) Any materials/ brands bearing ISI mark can be used in the work with the prior approval of EE&SM(C)-I, IIT(ISM), CPWD, Dhanbad.

Proforma for Quoting rates

Name of Work : Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System.				
Description		Estimated amount (Rs.)	Rate to be quoted by agency in percentage above/below/at par with respect to estimated cost	Amount Quoted by agency (In Rs.)
1.	As per Total of Schedule of Quantity	Rs. 9,15,790.00		
Total Estimated Cost		Rs. 9,15,790.00		

Schedule of Quantity

Name of Work: Construction of Canteen Service Facilities at IIT (ISM), Dhanbad. Sub Head: Providing, Installing, Testing and Commissioning of Hygienic Stainless Steel Kitchen Drainage System.

SLNo	Description	Qty	Unit	Rate	Amount
1	SANITARY INSTALLATIONS				
1	Providing and fixing soil, waste and vent pipes :				
1.1	100 mm dia				
1.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	70	metre	1169.30	81851.00
1.2	Providing and fixing plain bend of required degree.				
1.2.1	100 mm dia				
1.2.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	8	each	368.00	2944.00
1.3	Providing and fixing door piece, insertion rubber washer 3 mm thick, bolts & nuts complete :				
1.3.1	100 mm				
1.3.1.1	Sand cast iron S&S as per IS - 3989	16	each	683.85	10941.60
1.3.4	Providing and fixing terminal guard :				
1.3.4.1	100 mm				
1.3.4.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	8	each	427.80	3422.40
1.3.5.1	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe				
1.3.5.1.1	100 mm dia				
1.3.5.1.1.1	SS 304 grade coupling with EPDM rubber gasket	50	each	432.05	21602.50
1.6	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6 mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.				
1.6.1	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	24	each	304.05	7297.20
2	WATER SUPPLY				
2.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
2.1.1	32 mm nominal dia Pipes	50	M	518.75	25937.50

2.3	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
2.3.1	20 mm nominal dia Pipes	20	M	537.60	10752.00
2.3.1	25 mm nominal dia Pipes	35	M	627.25	21953.75
2.4	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
2.4.1	25 mm nominal bore	2	Each	622.40	1244.80
2.4.2	32 mm nominal bore	2	Each	689.60	1379.20
2.5	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
2.5.1	20 mm nominal bore	16	Each	462.50	7400.00
2.6	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing Complete so as to make it leak proof.	16	Each	452.00	7232.00
	Total				203957.95
	Modified Estimated Cost after using correction factor on DSR 2023 on account of GST @ 0.973 * 203957.95 = 198451.09				198451.09
	Cost Index @12% on DSR item 198451.09 x 12% = 23814.13				23814.13
	Total				222265.22
N/S-1	Supplying, installing, testing and commissioning of hygienic stainless steel box channel of AISI 304 grade, complete with DN90 outlet with gasket, HD stainless steel mesh grate (Load Class R50), edge infill, fully drainable, fully pickled and passivated, including all fittings, accessories, fixing, sealing, testing and commissioning complete as required.				
i)	Size: 300 mm (L) x 300/270 mm (W) x 75 mm (H).	12	Each	29431.40	353176.80
ii)	Size: 1230 mm (L) x 300/270 mm (W) x 75 mm (H).	3	Each	77393.15	232179.45
iii)	Foul Air Trap with Strainer suitable for DN90 outlet of the above box channel, complete with all fittings and accessories.	15	Each	7211.25	108168.75
	Total				915790.22
	SAY				915790.00