



National Highways & Infrastructure Development Corporation Ltd.
(A Government of India Undertaking)

NATIONAL COMPETITIVE BIDDING
(THROUGH E-TENDERING MODE)

**Name of the Work: Construction of 20 nos of toilets with kiosks under
Swachhata Action plan across the NHs in the state
of Tripura (6th Call)**

[Contract Package No.: NHIDCL/RO-Agt/T/Infra/2020-21/601]

BID DOCUMENT

June, 2022

<u>CONTENTS</u>	
TITTLE	
SECTION I.	NOTICE INVITING TENDER
SECTION II.	INSTRUCTIONS TO BIDDERS & APPENDIX TO BID
SECTION III	QUALIFICATION INFORMATION
SECTION IV	FORM OF BANK GUARANTEE, AGREEMENT & LOA
SECTION V	CONDITIONS OF CONTRACT & CONTRACT DATA
SECTION VI	TECHNICAL SPECIFICATIONS

(SECTION-I)
NOTICE INVITING TENDER
(E-TENDERING MODE ONLY)

National Highways & Infrastructure Development Corporation Limited

Notice Inviting e-Tender

(National Competitive Bidding through e-Tendering mode only)

Date: 07.06.2022

1. National Highways and Infrastructure Development Corporation Ltd. (hereinafter called “the Employer”) invites sealed bids in single stage two cover system i.e. the Technical and Financial Bids for the following works from the experienced Building/Structures Contractors/firms/organizations excluding those firms who have been declared as non-performing by MoRT&H/NHAI/NHIDCL or the firms those are blacklisted/debarred for specified period by MoRT&H/NHAI/NHIDCL:-

Sr. No.	Name of work/Contract Package	Estimated Civil Cost Put to Tender (Rs. In Crore) (Incl of all Taxes)	Bids Security (Rs. In Lakh)	Average annual turnover for last 5 Years (Rs. In Crore)	Time of Completion in Months	Eligibility Criteria as Completed work of similar nature during last 5 Years (Rs. In Crore)
1	Construction of 20 nos of toilets with kiosks under Swachhata Action plan across the NHs in the state of Tripura (6 th Call)	3.55	5.40	3.55	6 months	Three similar Completed work not less than the amount equal to 40% of the total value of contract

Cost of Bid Documents :

Rs. 10,000/- + 18% GST in favour of NHIDCL PROJECT ACCOUNT (Non-Refundable) (The bidder can make online payment of tender document fee, through RTGS/NEFT in the Project Account of ED (P) details as mentioned in RFP).

2. Date of Publishing is from 07.06.2022.
3. The complete BID document can be viewed/downloaded from web portal www.eprocure.gov.in from 07.06.2022 to 16.06.2022 (upto 15.00 Hrs. IST).
4. Bidder must submit its financial and technical bid at <https://eprocure.gov.in> on or before 07.06.2022 (upto 15.00 Hrs. IST). Bids received online shall be opened on 17.06.2022 (at 1530 hours IST).
5. Bid documents can be seen at and downloaded from the website www.nhidcl.com and <https://eprocure.gov.in> Bid documents contain qualifying criteria for bidder, specification, bill of quantities, conditions and other details.
6. The site for the work is available.
7. The original copy of payment proof of Bid security, hard copy of Power of Attorney and Integrity pact etc. in original can be submitted at the time of signing of Agreement as per MoRTH circular no. RW/NH-37010/4/2010-EAP (Printing) Vol IV dated 30.04.2020.
8. The interested bidder can download the NIT/bidding document from the website <https://eprocure.gov.in> & www.nhidcl.com.

9. To participate in bidding process, bidders have to get (DSC) “Digital Signature Certificate” as per Information Technology Act-2000, to participate in online bidding. This certificate will be required for digitally signing the bid. Bidder can get above mentioned digital certificate from any approved vendors. The Bidder, who already possess valid (DSC)”Digital Signature Certificate” need not to procure new Digital Signature Certificate.
10. The bidders have to submit their bids online in electronic format with Digital Signature. The bid cannot be uploaded without Digital Signature.
11. Bids will be opened online as per time schedule mentioned at Sr. No. 19.
12. Before submission of online bids, bidder must ensure that scanned copy of all the necessary documents have been attached with bid.
13. The department will not be responsible for delay in online submission of bids whatsoever reasons may be.
14. All the required information for bid must be filled and submitted online.
15. Bidders should get ready with the scanned copies of cost of documents & Bid Security as specified in the tender documents. The original instruments in respect of cost of documents, Bid Security and relevant documents etc. will be submitted to the Tenders Inviting Authority by Registered post/courier/by hand at the time of signing of Agreement.
16. The details of cost of documents, Bid Security specified in the tender documents should be the same, as submitted online (Scanned copies) otherwise bid will not be accepted.
17. Bidders can contact the undersigned for any guidance for getting DSC or any other relevant details in respect of e-tendering process.
18. The guidelines for submission of bid online can be downloaded from the website www.nhidcl.com & <https://eprocure.gov.in>.

19. Schedule of Bidding Process

The Company shall endeavor to adhere to the following schedule:

S. No	Description	Period
1	Date of issue of NIT	07.06.2022
2	Date of issue of Sale of Tender Documents	07.06.2022
3	Date of close of sale of Tender Documents (through online)	16.06.2022 (upto 1500 Hrs)
4	Last Date of receipt of pre-bid queries	09.06.2022 (till 1100 hours)
5	Date of Pre-Bid meeting	10.06.2022 (at 1530 Hrs)
6	Date of uploading of reply to the pre-bid queries	11.06.2022
7	Last Date of submission of Tender/Bid (online)	16.06.2022 (upto 1500 Hrs)
8	Opening of Technical BIDs at venue	17.06.2022 (1530 Hrs)
9	Date of Uploading of list of Technically Qualified Applicants	To be intimated later
10	Date of Opening of Financial Bids of Qualified Applicants	To be intimated later
11	Date of issue of letter of award (LOA)	To be intimated later
12	Validity of Bid	120 Days
13	Return of signed duplicate copy of LOA	To be intimated later
14	Submission of Performance Security (PS) and Additional Performance Security (APS), if any	Within 10 days of receipt of LOA.
15	Signing of Agreement	Within 15 days of receipt of LOA.

20. Conditional bids would be rejected.
21. NHIDCL reserves the right to accept/reject any or all the bids without assigning any reasons thereof.
22. **The following information is given for consideration by the prospective bidders:**

a) The estimate & drawing enclosed in the RFP is indicative in nature, the contractor has to submit their design & drawings to Authority for approval before commencing the work.

b) The works shall be carried out by placing of work order as per the site condition. The numbers of toilet to be construction may vary (increase or decrease) as per the site condition and Engineer in charge direction, therefore, no claim whatsoever from any of the selected bidders on this account shall be entertained in this regard.

c) Tentative locations of the proposed construction of toilets are tabulated below:

Sr. No.	District	Location	Remarks
1.	West Tripura	Near Lembucherra Market under DC Nagar Mouja	These locations are tentative in nature, may or may not change
2.		Near Shanibar Bazaar, Subalsing under Baluaband Mouja	
3.		Near old Mohanpur T.K. under Mohanpur Mauja	
4.		Dhakaiyapally near chara, Dakshin Taranagar under Tara Nagar mouja	
5.	Khowai	Near Bachaibari Market, Plot no 1172, Paschim Bachaibari Mauja, Km 91+000(RHS)	
6.		Behalabari Market, Plot no 1157, Purba Laxmichara Mauja, Km 87+280 (LHS)	
7.	Unakoti	Near Bhagabannagar District, Hospital, Unakoti, NH-208A, Gournagar, R.D. Block	
8.		Saidabari Bazar near Kati Mandir of Kumarghat Mouja, NH-208, Kumarghat R.D. Block	
9.		Near Panchamnagar Bazar under, Futati Mouja, Chandipur R.D. Block	
10.		Near Gokulnagar Bazar under Fatikroy Mouja, Kumarghat R.D. Block	
11.		Near Ganganagar Bazar under, Fatikroy Mouja, Kumarghat R.D. Block	
12.	Dhalai	Manu Motor stand, Dhalai District Jawaharnagar	
13.		Chailengta Motor Stand, Dhalai District Jawaharnagar	
14.		Near Durgachowmohani-Saikar Tri-junction Road, Durgachowmohani Bazaar, Kamalpur	
15.		Near Bamanchara English Medium School in the land of Dulai Deb	
16.		Plot no. 1064, Khaitan no. 603, Ambassa, Dhalai Zilla Parishad	
17.	North Tripura	Chainage 12.500, Kailashahar-Kurti section of NH-208A, Anandbazaar	
18.		Chainage 30.900, Kailashahar-Kurti section of NH-208A, Anandbazaar	
19.		Chainage 36.400, Kailashahar-Kurti section of NH-208A, Anandbazaar	

20.		Chainage 63.500, Kanchanpur-Vaghmun section of NH-44A, Hmnpuii	
21.		Chainage 43.000, Kanchanpur-Vaghmun section of NH-44A, Kanchanpur	

Date: 07.06.2022

Executive Director (P)
Regional Office-Agartala
National Highways & Infrastructure Development Corporation Limited.
(Ministry of Road Transports & Highways, Government of Tripura)
3rd floor, UD Bhawan, Near Ravindra Bhawan, Sakuntala, Agartala, Tripura
Email: edp-agartala@nhidcl.com

(SECTION-II)
INSTRUCTIONS TO BIDDERS
& APPENDIX TO BID

Section II: Instructions to Bidders			
Table of Clauses			
Clause		Clause	
	A. General		D. Submission of Bids
1	Scope of Bid	19	Sealing and marking of Bids
2	Source of Funds	20	Deadline for submission of Bids
3	Eligible Bidders	21	Late Bids
4	Qualification of Bidders	22	Modification & withdrawal of Bids
5	One Bid per Bidder		E. Bid Opening & Evaluation
6	Cost of Bidding	23	Bid Opening
7	Site Visit	24	Process to be Confidential
	B. Bidding Document	25	Clarification of Bids and Contacting the Employer
8	Content of Bidding Document	26	Examination of Bids and Determination of Responsive
9	Clarification of Bidding Document	27	Correction of Errors
10	Amendment of Bidding Document	28	Evaluation and Comparison of Financial Bids
	C. Preparation of Bids	29	Price Preference
11	Language of Bid		F. Award of Contract
12	Documents Comprising the Bid	30	Award Criteria
13	Bid Prices	31	Employer's Right to Accept any Bid and to reject any or all Bids
14	Currencies of Bid and Payment	32	Notification of Award and signing of agreement
15	Bid Validity	33	Performance of Security
16	Earnest Money/ Bid Security / Forfeiture/ Debarment	34	Advances
17	Alternative Proposals by Bidders	35	Corrupt or Fraudulent Practices
18	Format and Signing of Bid		

Section II
Instructions to Bidders (ITB)
A. General

1. Scope of Bid

- 1.1 The Employer (i.e., Managing Director, National Highways & Infrastructure Development Corporation Ltd.) invites bids for “as described in these documents and referred to as “the works”. The name and identification number of the works is provided in the Notice Inviting Tender.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
- 1.3 Throughout these Bidding Documents, the terms “bid” and “tender” and their derivatives (bidder/tender, bid/tender, bidding/tendering, etc.) are synonymous.

2. Source of Funds

- 2.1 The expenditure on this project will be met by National Highways & Infrastructure Development Corporation Ltd (NHIDCL).

3 Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders meeting the qualification requirements prescribed in this document.
- 3.2 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government.
- 3.3 **The bidder including individual or any of its JV members, who are having (two) M&R Project(s) of NHIDCL awarded in Tripura on date of bid submission, shall not be eligible to bid for this Project (Issuance of LOA will be considered as on-going project).**

AND

The bidder shall not be awarded more than 2 (two) M&R Packages for the during current bidding process in NHIDCL, Tripura.

Whichever condition above is met earlier.

Note: The projects shall be treated as completed when it is completed in all aspects/Final Bill paid/Completion Certificate

4 Qualification of the Bidder

- 4.1 Deleted
- 4.2 All bidders shall furnish the following information and documents with their bids in Section-III, Qualification Information.
 - a) Scanned copies of original documents defining the constitution or legal status, place of registration, and principal place of business; scanned copy of written power of attorney of the signatory of the Bid to commit the Bidder; & original copy of Written Power of Attorney to be submitted in the envelop of physical form. (Pl. Refer clause 12.2 of ITB)
 - b) Scanned copy of total monetary value of civil engineering construction works performed for each of the last five years; (2016-17, 2017-18, 2018-2019, 2019-2020 & 2020-21)
 - c) Scanned copy of experience certificate in works of a similar nature and size for each of the last five financial years (commencing from year 2016-17) with certificates from the concerned officer of the rank of Executive Engineer or equivalent;
 - d) Scanned copy of evidence of availability (either owned or leased or rented) of items of construction equipment named in the Appendix to ITB. [Clause 4.4 B(b) (i)]

- e) Scanned copy of details of the technical personnel proposed to be employed for the Contract having the qualifications defined in Appendix to ITB. [Clause 4.4 B(b) (ii)]
- f) Scanned copy of reports on the financial standing of the Bidder, and a certificate from Chartered Accountant as a proof of turnover for the last five years;
- g) Scanned document in support of evidence access to line (s) of credit and availability of other financial resource facilities (10% of Contract value), certified by bankers (not more than 3 months old).
- h) Scanned undertaking that the bidder will be able to invest minimum cash upto 25 % of contract value of work, during implementation of work.
- i) Deleted
- j) Scanned copy of information regarding any litigation or arbitration during the last five years in which the Bidder is involved, the parties concerned, the disputed amount, and the present status;
- k) Deleted
- l) Deleted

4.3 Bids from joint ventures, consortiums, combination or any sort of arrangement between two or more than two entities are not allowed.

4.4 A. To qualify for award of the contract, each bidder in its name should have the following; -

- a) Achieved an average annual financial turnover (in all classes of civil engineering construction works only) equal to the amount indicated in NIT during last five years ending 31st March of the previous financial year, duly certified by Chartered Accountant.
- b) Satisfactorily completed (not less than 90% of contract value), as a prime contractor (or as a nominated subcontractor, provided further that all other qualification criteria are satisfied) similar works during last five years ending last day of month previous to the one in which bids are invited, at least One similar Completed work not less than the amount equal to 80% of the total value of contract

OR

Two similar Completed work not less than the amount equal to 60% of the total value of contract

OR

Three similar Completed work not less than the amount equal to 40% of the total value of contract.

[The “similar work” constitutes construction/maintenance of building (The base year should be considered as 2021-22)]

(Following escalation factor shall be used to bring the value of such completed works at the level of current financial year i.e., 2021-22)

Year Before	Multiplying Factor
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61

4.4 B.

- a) Each bidder must upload the scanned copies of following documents along with the submission of online bidding:
 - i. An affidavit on a Stamp Paper, duly attested from the Notary Public, that the information furnished with the bid documents is correct in all respects; and
 - ii. Such other certificates as defined in Section- III.
 - iii. Failure to submit the certificates/documents as specified above shall make the bid non-responsive.
- b) Each bidder must demonstrate:
 - i. Evidence of availability (either owned or leased or rented) of the key equipments for this work as stated in the Appendix to ITB.
 - ii. Availability for this work of personnel with qualification & experience as stated in the Appendix to ITB.
- c) Deleted.
- d) Deleted.

4.4 C. Deleted

4.5 Contractors' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria.

4.6 Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:

Assessed Available Bid capacity = $(A * N * 2.5 - B)$

Where,

A = Maximum value of civil engineering works executed in any one year during the last five years (escalation factor as specified in this section shall be used to bring the maximum value of civil engineering works to the level of current financial year i.e., 2021-22) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which bid is invited.

B = Value (escalation factor as specified in this section shall be used to bring the value to the level of current financial year i.e., 2021-22) of existing commitments and on-going works to be completed during the next 01 year (period of completion of the works for which bid is invited)

4.7 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- i. Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or
- ii. Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc. or debarring from any Govt. Authority.
- iii. Tampered the bid document in any manner.

5 One Bid per Bidder

5.1 Each Bidder shall submit only one Bid for a particular package. A Bidder who submits more than one Bid for the same package will cause be disqualified.

6 Cost of Bidding

6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will, in no case, be responsible or liable for those costs.

7 Site Visit

- 7.1 The Bidder, at his own cost, responsibility and risk, is encouraged to visit, examine and familiarize himself with the requirement of Work (as per enclosed drawing & estimate) and prepare their own estimate of carrying out the work and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. He may contact the Branch Office of NHIDCL in this regard.

Section II **Instructions to Bidders (ITB)**

Bidding Documents (On line)

8 Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda (if any) issued in accordance with Clause 10:

Volume- I:-

1. Notice Inviting Tender
2. Instructions to Bidders & Appendix to Bid
3. Qualification Information
4. Forms Bank Guarantee, Agreement & LOA
5. Conditions of Contract & Contract Data
6. Scope of work
7. Technical Specifications
8. Implementation Manual & Maintenance Intervention Levels

Volume - II:-

Bill of Quantities (Should be filled in the prescribed format given in the bid document)

8.2 DELETED.

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, specifications, bill of quantities, etc. in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids, which are not substantially responsive to the requirements of the Bid Documents, shall be rejected.

9 Clarifications on Bid Documents

9.1 A prospective Bidder requiring any clarification on the bid documents may notify the Employer in writing or by cable ("cable" includes facsimile) or through e-tender portal at the Employer's address indicated in the Notice Inviting Tender. The Employer will respond to any request for clarification received earlier than 10 days prior to the deadline for submission of bids. Copies of the Employer's response will be hosted on website or which are required in the opinion of the Employer including a description of the enquiry, but without identifying its source.

9.2 Pre-bid meeting

9.2.1 The bidder or his official representative is invited to attend pre-bid meeting which will take place at the address, venue, time and date as indicated in appendix & NIT.

9.1.1 The purpose of the meeting will be to clarify issues and to answer question on any matter that may be raised at that stage.

9.1.2 The bidder is requested to submit any questions in writing or by cable/email so as to reach the Employer not later than one week before the meeting.

9.1.3 Minutes of the meeting, including the text of the questions raised (without identifying the source of the enquiry) and the responses given will be transmitted without delay on website. Any modifications of the bid documents listed in Clause 8.1, which may become necessary as a result of the pre-bid meeting or which are required in the opinion of the Employer shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.

9.1.4 Deleted

10 Amendment of Bidding Documents

- 10.1 Before the deadline for submission of bids, the Employer may modify the Bidding Documents by issuing addenda.
- 10.2 Any addendum thus issued shall be part of the Bidding Documents and shall be hosted on NHIDCL e-tendering portal i.e., <https://eprocure.gov.in> and www.nhidcl.com. Bidders are advised to keep them self-updated of all the addendums issued on e-tendering portal by daily checking the e-tendering portal and, NHIDCL does not assume any responsibility in case the bidder fails to do so and does not take any action, if required, with respect any relevant addendum.
- 10.3 To give prospective bidders reasonable time to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with Clause 20.2.

Section II Instructions to Bidders (ITB)

C. Preparation of Bids

11 Language of Bid

11.1 All documents relating to the Bid shall be in English.

12 Documents Comprising the Bid

12.1 The e-bid submitted by the bidder shall be in two separate parts.

Part-I - This shall be named Technical Bid and shall comprise of information submitted in section-III.

Part-II - It shall be named Financial Bid and shall comprise of Priced bill of quantities.

Documents to be submitted in physical form shall reach the **Executive Director (P), Regional Office-Agartala, National Highways & Infrastructure Development Corporation Limited, (Ministry of Road Transports & Highways, Government of Tripura), Regional Office, 3rd floor, UD bhawan, Near Ravindra Bhawan, Sakuntala, Agartala, Tripura, Email: edp-agartala@nhidcl.com** at the time of signing of Agreement.

Though, the scanned copies of following documents is required to be uploaded during submission of e-bid on the e-tendering portal, As per clause 12.1 above, however, following original documents in physical form shall be submitted in a sealed envelope and addressed to the addressee given in the NIT duly super scribed "Name of Work, Bid due date and time". Name and address of the bidder should also be indicated on the envelope.

- a) EMD
- b) Bid Document Fee
- c) Deleted
- d) Written Power of Attorney of the signatory (whose digital signature certificate is used during e-tender submission) of the bidder to commit the bid
- e) Affidavit duly notarized
- f) Original experience certificate or notarized copy of certificate duly signed by authorized signatory.

12.2 The following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars
1.	Notice Inviting Tender
2.	Instruction to the bidders
3.	Conditions of Contract
4.	Contract Data
5.	Technical Specifications

13 Bid Prices

13.1 The Contract shall be for the whole Works, as described in Clause 1.1 based on the priced Bill of Quantities submitted by the Bidder.

13.2 The bidder shall quote bid prices on appropriate format enclosed as part of tender document on e-tender portal i.e. <https://eprocure.gov.in>. The items for which no rate or price is entered by the Bidder will be required to be executed free of cost and shall be deemed covered under the other rates and prices in the Bill of Quantities quoted.

13.3 All duties, taxes including GST, royalties and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the rates, prices, and total Bid price submitted by the Bidder.

13.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment.

14 Currencies of Bid and Payment

14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

15 Bid Validity

15.1 Bids shall remain valid for a period of **120 days** after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

16 Earnest Money / Bid Security/ Forfeiture/ Debarment

16.1 The Bidder shall furnish, as part of the Bid, Earnest Money/Bid Security, in the amount as specified in the NIT. (Bank Guarantee/Demand Draft must be in favour of NHIDCL PROJECT ACCOUNT payable at Agartala. The bidder can make online payment of tender document fee, bid security through RTGS/NEFT in the Project Account of ED (P) mentioned in RFP.

17 Alternative Proposals by Bidders

17.1 Bidder shall submit offers that fully comply with the requirement of the Bidding Documents. Conditional offer or alternate offer will not be considered further in the process of evaluation and the bid will be declared non-responsive.

18 Format and Signing of Bid

18.1 The Bidder shall submit e-bid comprising of the documents as described in Clause 12 of the ITB.

18.2 DELETED.

18.3 DELETED.

18.4 The documents to be submitted in the physical form along with the demand draft for fees/security shall be typed or written in ink and shall be signed by a person duly authorized to sign on behalf of the bidder. All the pages of the documents as mentioned here shall be signed by the person/persons signing the bid. Documents as mentioned here shall contain no overwriting, alterations or additions, except those to comply with instructions, issued by the employer or as necessary to correct errors made by the bidder, in which case such corrections shall be made by scoring out the cancelled portion, writing the correction and signing and dating it along with the stamp by the person or persons signing the Bid.

Section II
Instructions to Bidders (ITB)

D. Submission of Bids

19 Marking of Bids

- 19.1 The documents to be submitted in physical form as per clause 12.2 of ITB shall be submitted in a sealed Envelope super scribed as “Documents in Physical Form” at the top left corner.
- 19.2 DELETED.
- 19.3 DELETED.
- 19.4 DELETED.
- 19.5 DELETED.

20 Deadline for Submission of Bids

- 20.1 Complete e-Bid to be uploaded on NHIDCL e-tender portal before due date & time. The Envelope containing “Documents in Physical Form” must also be received by the Employer at the address **Executive Director (P), Regional Office-Agartala, National Highways & Infrastructure Development Corporation Limited, (Ministry of Road Transports & Highways, Government of Tripura), Regional Office, 3rd floor, UD bhawan, Near Ravindra Bhawan, Sakuntala, Agartala, Tripura, Email: edp-agartala@nhidcl.com** not later than the date and time indicated in the NIT. In the event of the specified date for the submission of documents in Physical form being declared a holiday for the Employer, the same will be received up to the specified time on the next working day.
- 20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21 Late Submission of Document in Physical Form:

- 21.1 Any document in physical form if received by the Employer after the deadline prescribed in Clause 20 will be returned unopened to the Bidder and also the e-bid submitted by such bidder shall not be considered.

22 Modification and Withdrawal of Bids

- 22.1 Bidders may modify or withdraw their e-bids as directed on the e-tendering portal, before the Bid Due Date and time as prescribed in Clause 20.
- 22.2 DELETED.
- 22.3 No bid may be modified after the deadline for online submission of bids.
- 22.4 Withdrawal or modification of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 shall result in the forfeiture of the Bid security pursuant to Clause 16.
- 22.5 Bidders may modify the prices of their bids before deadline of online submission of bid.

Section II

Instructions to Bidders (ITB)

E. Bid Opening and Evaluation

23 Bid Opening

Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received (except those received late) shall be opened on the date and time mentioned in Notice Inviting Tender (NIT). 'Financial Bid' of those bidders whose technical bid has been determined to be substantially responsive shall be opened on a subsequent date through online process of e-tendering, which will be notified to such bidders.

23.1 The Employer will open the "Technical Bid" of all the bids received (except those received late), in the presence of the bidders/bidders' representatives who choose to attend at the time, date and place specified in the NIT. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.1.1 DELETED

23.1.2 DELETED

23.2 In all cases, the amount of Bid Security, forms and validity shall be announced. Thereafter, the Employer at the opening as the Employer may consider appropriate, will announce the bidders' names and such other details.

23.3 The Employer will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Clause 23.1.

23.4

(i) The bids accompanied with valid bid security, bid document fee, Tender Processing fee will be taken up for evaluation with respect to the information furnished in Part I of the Qualification Information and other bid.

(ii) As soon as possible, the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration. However, to assist in the examination, evaluation of technical bids, the Employer may at his discretion, ask any bidder for clarification of his bid, however, no additional documents in support of clarification will be entertained.

23.5 The Employer shall inform the bidders, whose technical bids are found responsive, of the date, time and place of opening of the financial bids. The bidders so informed, or their representative, may attend the meeting of opening of financial bids.

23.6 At the time of the opening of the 'Financial Bid', the names of the bidders whose bids were found responsive in accordance with clause 23.5 will be announced. The financial bids of only these bidders will be opened. The responsive bidders' names, the Bid prices, the total amount of each bid, pursuant to clause 22 and such other details as the Employer may consider appropriate will be announced by the Employer at the time of bid opening. Any Bid price, which is not read out and recorded, will not be taken into account in Bid Evaluation.

23.7 The Employer shall prepare the minutes of the opening of the Financial Bids.

24 Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid.

25 Clarification of Bids and Contacting the Employer

- 25.1. To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted.
- 25.2. Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded.
- 25.3. Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

26 Examination of Bids and Determination of Responsiveness

- 26.1 During the detailed evaluation of "Technical Bids", the Employer will determine whether each Bid
- a) meets the eligibility criteria defined in Clauses 3 and 4 of ITB;
 - b) the required documents in physical form submitted by the bidder as well as the documents uploaded by the bidder are in order; and
 - c) is substantially responsive to the requirements of the Bidding Documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications etc.

26.2 DELETED.

26.3 DELETED.

27 DELETED.

28 Evaluation and Comparison of Financial Bids

- 28.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26.
- 28.2 DELETED
- 28.3 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's/Employer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 33 be increased and an additional performance security of 05 (five) percent may be obtained at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.
- 28.4 A bid, which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.

29 Price Preference

- 29.1 There will be no price preference to any bidder.

Section II

Instructions to Bidders (ITB)

F. Award of Contract

30 Award Criteria

- 30.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid Price.

31 Employer's Right to Accept any Bid and to Reject any or all Bids

- 31.1 Notwithstanding Clause 30, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

32 Notification of Award and Signing of Agreement.

- 32.1 The bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay to the Contractor in consideration of the execution, completion and maintenance of the Works, by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 32.2 The notification of award (LOA) will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 33.
- 32.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and the successful Bidder after the performance security is furnished.
- 32.4 Upon furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

33 Performance Security

- 33.1 Within 10 (ten) days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security of 5 (five) percent of the Contract Price, valid for the period of 28 days after the expiry of defect liability period of 12 (Twelve) months plus additional security for unbalanced Bids in accordance with Clause 28.3 of ITB and sign the contract. The validity shall account for additional 3 months time to account for BG verification, signing of contract and start date.
- 33.2 The performance security shall be in the form of a Bank Guarantee in the name of the Employer, from a Bank as applicable in case of bid security defined in Appendix to ITB.
- 33.3 Failure of the successful bidder to comply with the requirement of sub-clause 33.1 shall constitute sufficient ground for cancellation of the award and forfeiture of the bid security and debarment for a period as specified in clause 16.7.

34 Advances – Deleted

35 Corrupt or Fraudulent Practices

The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with NHIDCL and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

The Employer requires the bidders/Contractors to strictly observe the laws against fraud and corruption enforced in India, namely, Prevention of Corruption Act, 1988.

Appendix to ITB				
Instructions to Bidders Clause Reference				
(1.1)		The Employer is Executive Director (Projects) , NHIDCL, RO-Agartala, Tripura-799001		
(1.1)		Construction of toilets in the state of Tripura		
(4.4) B) (b) (i)		Name of the Equipment	Quantity	
		Equipment required in construction of Building.		
		Any other equipment required for carrying out work as per MoRT&H/CPWD specification.		
		Note: The bidder must upload scanned copy of the documentary evidence in support of his owning/leased/ rented of the above equipment's. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipment's with the company/ entity from whom the equipment's are proposed to be hired on lease/ rent.		
(4.4) (B) (b) (ii)		The Number of Technical personnel, Qualifications and Experience will be as follows: The Technical Personnel are :		
SL. No.	Personnel	Qualification	Particular Experience (minimum requirement)	No. of Persons
1	Project Manager	B.E (Civil) or equivalent + 10 Years Exp.	5 years on building or any constructions / maintenance work.	1
2	Site Engineer	B.E (Civil) + 3Years Exp. Or Diploma + 5 Years Exp.	2 years on building or any constructions / maintenance work.	1
3	Quantity Surveyor	B.E.Civil+3Years Exp. Or Dip. Civil. + 5Years Exp.	2 years on building or any constructions / maintenance work...	1
			Total	3
		Note: The detailed signed and scanned CV's of the Key Technical Personnel at S. No. 1 signed by the key personnel himself, must be uploaded along with the bid. The name and educational qualification of other personnel should be given. Noncompliance of the above or non-furnishing of the CV as above.		

SECTION III
QUALIFICATION INFORMATION
(To be Filled by Bidder)

SECTION III

QUALIFICATION INFORMATION

The information to be filled in by the Bidder in this section & document submitted in physical form will be used for the purposes of post qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract.

1. For Individual Bidders

1.1

- a) Year of Constitution
- b) legal status of Bidder (Proprietorship/Partnership or Pvt. Ltd. firm)

[Upload scanned copy of original]

- c) Place of registration:

- d) Principal place of business:

1.2 Power of attorney of signatory of Bid *[Upload scanned copy & also supply Original copy in envelop of physical form]*

1.3 Total value of Civil Engineering construction work performed in the last Five years (in Rs. _____ Lakhs) refer ITB Clause 4.4 A (a)

(Upload scanned copies of certificate from Chartered Accountant & also supply original certificate from Chartered Accountant)

2019-2020-----

2018-2019-----

2017-2018-----

2016-2017-----

2015-2016-----

Total -----

Average per year-----

1.4 (a) Work performed as prime contractor, work performed in the past as a nominated sub-contractor provided further that all other qualification criteria are satisfied (in the same name) of a similar nature during the last five years as per ITB Clause 4.4A(b).

Project Name	Name of the Employer *	Description of work	Contract No.	Value of Contract (Rs. Crore)	Date of issue of work order	Stipulated period completion	Actual date of completion	Remarks explaining reasons for delay & work
--------------	------------------------	---------------------	--------------	-------------------------------	-----------------------------	------------------------------	---------------------------	---

*** Upload certificate(s) from the Employer (to be given by an officer at the rank of Executive Engineer or equivalent & also supply original or certified copy in physical form in envelope)**

Note: In case of nominated sub-contractor – a certificate from the Executive Engineer or equivalent of the Prime Employer should be obtained from whom an approval for subcontractor has been obtained.

1.4 (b) Information on Bid Capacity (works for which bids have been submitted and accepted and works which are yet to be completed) as on the date 7 days before the last date for bid submission (as per Cl 4.6 of the ITB).

(i) Existing commitments and on-going works (B)

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs Cr)	Stipulated Period of Completion	Value of works remaining to be completed (Rs. Cr)	Escalation factor	Anticipated date of completion factor	Escalated value of remaining work during completion on period of work of which bids are invited
1	2	3	4	5	6	7	8	9	10

* Upload certificate (s) from the Engineer(s)-in-Charge of the rank of Executive Engineer or equivalent & also supply original or certified copy of certificate in physical form envelop.

(ii) Details of works for which bid submitted and accepted (i.e. where contract signing is pending)

Description of works	Place & State	Name & Address Of Employer	Date of issue of Letter of Acceptance (LOA) *	Value given in LOA	Stipulated period for completion	Value of work during completion period of work for which bids are invited
1	2	3	4	5	6	7

* Upload copy of LOA

(iii) Bid Capacity (Bidder shall calculate, mention his bid capacity and enclose the supporting calculation)

A = Rs.lakh (enclose the details)
N =years
B = Rs.lakh (enclose the details)

Assessed available bid capacity = $A \times N \times 2.5 - B$
= Rs. Lakhs

- 1.5 Availability of Key Equipment essential for carrying out the Works [Ref. Clause 4.4(B)(b) (i)].**
The Bidder should list all the information requested below.

Item of Equipment	Requirement	Availability Proposals			Page no. of the proof attached
		Owned/Leased/rented	Nos./Capacity	Age/Condition	
Equipment required for construction of Building					

Note: The bidder must upload the documentary evidence in support of his owning/leased/ rented of the above equipments. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipments with the company/ entity from whom the equipments are proposed to be hired on lease/ rent. The bidder shall submit an undertaking as per Performa Appendix 1.7 (ITB, Section -2) of the bid document.

- 1.6 Qualification and Experience of Key Personnel required for administration and execution of the Contract [Ref. Clause 4.4 (B) (b) (ii)]. Upload biographical data for technical personnel (Refer also to Cl. 4.2 (e) of Instruction to Bidders).**

(Refer also to Sub Clause 9.1 of the Conditions of Contract).

Sl. No.	Position	Name	Qualification	Total Professional Experience (Years)	Experience in the proposed position (Years)
1.	Project Manager				
2.	Site Engineer				
3.	Quantity Surveyor				

Note: The detailed and signed CV's of the Key Technical Personnel at S. No. 1 signed by the key personnel himself must be uploaded along with the bid. The name and educational qualification of other personnel should be given.

- 1.7 Information on litigation history in which the Bidder is involved.**

Other Party (ies)	Employer	Cause of Dispute	Amount Involved	Remarks showing Present Status

--	--	--	--	--

2. Bidders should upload the scanned copy of the following affidavits/ undertakings as per formats enclosed hereinafter & also send original copy of Affidavit/Undertakings:
- (i) Affidavit (it should be on stamp paper attested by Notary Public)
 - (ii) Undertaking regarding minimum investment of cash towards working capital.
 - (iii) Undertaking that the Bids shall remain valid for the period specified in Clause 15.1.

**SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT
FACILITIES**

(Clause 4.1(i) of ITB)

BANK CERTIFICATE

This is to certify that M/s..... is a reputed company with a good financial standing.

If the contract for the work, namelyis awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs..... to meet their working capital requirements for executing the above contract during the contract period.

(Signature)
Name of Bank Senior Bank Manager
Address of the Bank

AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the enclosed attachments are true and correct.
2. The undersigned also hereby certifies that neither our firm M/s_____ has abandoned any work on PWD/NHIDCL/any other Govt agencies nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.
3. The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by PWD/NHIDCL/any other Govt agencies to verify this statement or regarding my (our) competence and general reputation.
4. The undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the PWD/NHIDCL/any other Govt agencies and within the prescribed time.

(Signed by an Authorized Representative of the Firm)

Name of the Representative

Name of Firm

DATE

(To be notarized by Notary)

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s _____ would invest minimum cash up to 25% of the value of the work during implementation of the Contract towards the working capital.

(Signed by an Authorized Representative of the Firm)

Name of the Representative

Name of Firm

DATE

(To be notarized by Notary)

UNDERTAKING

- 1 I, the undersigned do hereby undertake that our firm M/s. _____ agree to abide by this bid for a period of _____ days after the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

(Signed by an Authorized Representative of the Firm)

Name of the Representative

Name of Firm

DATE

(On the letter head of the bidder)

Appendix 1.7 [Ref. clause 4.4 B (b) (i)]

Undertaking

I, the undersigned do hereby undertake that our firm M/s..... agree to provide and will deploy required equipment as mentioned in the Appendix to ITB of the work further it is certified that the documents submitted as evidence of availability of the key equipments for this work as stated in the Appendix to ITB, are genuine and correct. If anything, contrary to the details as submitted is found at any stage NHIDCL would be at liberty to debar/blacklist my firm for an appropriate period as decided by NHIDCL.

(Signed by an Authorized Representative of the Firm)

Name of the Representative

Name of Firm

Date

(Seal of the company)

(SECTION-IV)
FORMS OF BANK GURANTEES,
LOA & AGREEMENT.

FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY
FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY

Contract Package No: NHIDCL/RO-Agt/T/Infra/2020-21/601

To

Executive Director (P)
Regional Office-Agartala
National Highways & Infrastructure Development Corporation Limited.
(Ministry of Road Transports & Highways, Government of Tripura)
Regional Office, 3rd floor, UD bhawan, Near Ravindra bhawan, Sakuntala, Agartala, Tripura
Email: edp-agartala@nhidcl.com

WHEREAS..... (name and address of contractor) hereinafter called “the contractor” has undertaken, in pursuance of Letter of Acceptance No. Dated..... to execute..... (name of Contract and brief description of Works) (hereinafter called “the contract”).

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you with a Bank Guarantee for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREOF we hereby affirm that we are the guarantor and responsible to you on behalf of the Contractor, up to a total of Rs..... (amount of guarantee) (Rupees..... (in words)), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of..... (amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract or of the works to be performed there under or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid upto the date of expiry of the project completion period.

This guarantee shall also be operatable at our branch at Agartala, from whom, confirmation regarding the issue of this guarantee or extension/ renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment there under claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

Notwithstanding anything contained herein before, our liability under this guarantee is restricted to Rs. _____ (Rs. _____ in words) and the guarantee shall remain valid till _____. Unless a claim or a demand in writing is served upon us on or before _____ all our liability under this guarantee shall cease.

Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited project account
2	Beneficiary Bank Account No.	79901010002266
3	Beneficiary Bank Branch	IFSC CNRB0017990
4	Beneficiary Bank Branch Name	Agartala Branch
5	Beneficiary Bank Address	Canara Bank, above Rms office, 1 st floor, Durgabari road, Agartala, PIN: 799001

Signature and seal of the Guarantor with Name, Designation, Employee Code Number & Telephone Number.....

Name of the Issuing Bank/ BranchName of the Controlling Branch/Bank.....

Address & Telephone Number.....Address & Telephone Number.....

Date.....

In the presence of (if this is to be witnessed as per bank's policy).....

1.....
(Name, Address & Occupation)

2.....
(Name, Address & Occupation)

An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract including additional security for unbalance bids, if any and denominated in Indian Rupees.

FORM OF LETTER OF APPLICATION

To,

Executive Director (P)
Regional Office-Agartala
National Highways & Infrastructure Development Corporation Limited.
(Ministry of Road Transports & Highways, Government of Tripura)
Regional Office, 3rd floor, UD bhawan, Near Ravindra bhawan, Sakuntala, Agartala, Tripura
Email: edp-agartala@nhidcl.com

DESCRIPTION OF WORKS: Construction of 20 nos of toilets with kiosks under Swachhata
Action plan across the NHs in the state of Tripura (6th Call)
Package No.: NHIDCL/RO-Agt/T/Infra/2020-21/601

[Contract Package No.: NHIDCL/RO-Agt/T/Infra/2020-21/601

Dear Sir,

Having examined the Bid Document, Instruction to Bidders, Qualification Information, Scope of works, etc. for the subject work, we, hereby submit our bid for the subject work.

It is certified that the information furnished in this document is true and correct. The proposal is unconditional and unqualified. We undersigned accept that NHIDCL reserves the right to reject any or all application without assigning any reason.

Thanking you,

Yours faithfully,

(Authorized Signatory) for and on behalf of

M/s _____

FORM OF LETTER OF ACCEPTANCE

No.

Dated

To

M/s.....

Sub.: **Name of Work**

Sir,

Based on your bid submitted on in compliance of bidding document of NHIDCL for execution of the work of , it is hereby notified that your bid for a contract price of **Rs..... (Rupees in words.....)** has been accepted for and on behalf of NHIDCL

You are hereby requested to furnish Performance Security plus additional security in the form detailed in para. 33.2 of ITB for an amount equivalent to **Rs..... (Rupees in words.....)** within 10 days as per provisions of clause 33.1 of ITB of the bid document and sign the contract agreement failing which the actions as stipulated in clause-.33.3 of ITB shall be taken.

Thanking you,

Yours faithfully,

(.....)
General Manager (Technical)

FORM OF AGREEMENT

AGREEMENT

This agreement made the _____ day of _____ 2019 _____ between the National Highways & Infrastructure Development Corporation Ltd. (hereinafter called “the Employer” of the one part and _____ (here in after called “the Contractor”) of the other part.

AND WHEREAS the Employer invited bids from eligible bidders of the execution of certain works, viz “**Construction of 20 nos of toilets with kiosks under Swachhata Action plan across the NHs in the state of Tripura (6th Call)**”. Package No.: NHIDCL/RO-Agt/T/Infra/2020-21/601 AND WHEREAS pursuant to the bid submitted by the Contractor, vide letter dated ----- (here in after referred to as the “BID” or “OFFER”) for the execution of works, the Employer by his letter of acceptance dated ----- accepted the offer submitted by the Contractor for the execution and completion of such works and the remedying of any defects thereon, on terms and conditions in accordance with the documents listed in para 2 below.

AND WHEREAS the Contractor by a deed of undertaking dated ----- has agreed to abide by all the terms of the bid, including but not limited to the amount quoted for the execution of Contract, as stated in the bid, and also to comply with such terms and conditions as may be required from time to time.

AND WHEREAS pursuant to the bid submitted by the Contractor vide letter dated ----- (hereinafter referred to as the “the Offer”), the employer has by his letter of acceptance no.----- accepted the offer submitted by the Contractor for the execution and completion of such works and the remedying of any defects therein, on terms and conditions in accordance in the conditions of particular application and condition included hereinafter;

AND WHEREAS the contractor has agreed to undertake such works and has furnished a performance security pursuant to clause 33 of the instructions to bidders (Section-I).

NOW THIS AGREEMENT WITNESSETH as follows:

- 1 In this agreement works and expressions shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to;
- 2 The following documents shall be deemed to form and be read and constructed as part of this agreement viz.
 - a) The Contract Agreement,
 - b) Letter of Acceptance,
 - c) Notice to proceed with the works,
 - d) Contractor's Bid,
 - e) Contract Data,
 - f) Conditions of Contract including Special Conditions of Contract
 - g) Technical Specifications,
 - h) Drawings, if any
 - i) Scope of work
 - j) Bill of Quantities
 - k) Any other document listed in the Contract Data.
- 3 The foregoing documents shall be constructed as complementary and mutually explanatory one with another. Should any ambiguities or discrepancy be noted then the order of precedence of these documents shall subject to the condition of particular applications be as listed above.
- 4 In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the

works and remedy any defects therein in conformity in all respect with the provisions of the contract.

- 5 the employer hereby covenants to pay the contractor in consideration of the execution and completion of the works and the remedying of defects therein the contract price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS WHEREOF the parties here to have caused this agreement to be executed the day and year first before written, signed, sealed and delivered by the said Employer through his Authorized Representative and the said Contractor through his Power of Attorney holder in the presence of:

Binding Signature of Employer _____

For and on behalf of
National Highways & Infrastructure Development Corporation Ltd.
3rd Floor, PTI Building,
4-Parliament Street,
New Delhi-110001

Binding Signature of Contractor _____

For and on behalf of _____

In the presence of		In the Presence of	
1.	Name:	1.	Name:
	Address:		Address:
2.	Name:	2.	Name:
	Address:		Address:

(SECTION-V)

CONDITIONS OF CONTRACT AND CONTRACT DATA

Table of Clauses

Sl. No.		Sl.No.	
	A. General		D. Cost Control
1	Definitions	35	Bill of Quantities
2	Interpretation	36	Variations
3	Language and Law	37	Payments for Variations
4	Engineer's Decisions	38	Cash Flow Forecasts
5	Delegation	39	Payment Certificates
6	Communications	40	Payments
7	Subcontracting	41	Compensation events
8	Other Contractors	42	Tax and currencies for payment
9	Personnel	43	Price adjustment
10	Employer's and Contractor's Risks	44	Security Deposit/ Retention Money
11	Employer's Risks	45	Liquidated damages
12	Contractor's Risks	46	Advance Payment
13	Insurance	47	Securities
14	Site Investigation Reports	48	Cost of Repairs
15	Queries about the Contract Data		E. Finishing the Contract
16	Contractor to Construct the works and do maintenance	49	Completion
17	The works to be Completed by the Intended Completion Date	50	Taking Over
18	Approval by the Engineer	51	Final Account
19	Safety	52	Operating and maintenance manual
20	Discoveries	53	Termination
21	Possession of the Site	54	Payment upon Termination
22	Access to the Site	55	Property
23	Instructions	56	Release from performance
24	Deleted		F. Special Conditions of Contract
25	Arbitration	57	Labour
26	Deleted	58	Compliance with Labour Regulation
	B. Time Control	59	Drawings and Photographs of the works
27	Programme	60	The Apprenticeship Act, 1961
28	Extension of Completion Date		
29	Delays Ordered by the Engineer		
30	Management Meetings		
	C. Quality Control		
31	Identifying Defects		
32	Tests		
33	Correction of Defects		
34	Uncorrected Defects		

Section V

CONDITIONS OF CONTRACT

Part I General Conditions of Contract (GCC) and Contract Data

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 41 hereunder.

The Completion Date is the date of completion of the Works as certified by the Engineer, in accordance with Clause 49.1.

The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.3.

The Contract Data defines the documents and other information, which comprise the Contract.

The Contractor is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer and includes technical and financial bids.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The Defects Liability Certificate is the certificate issued by Engineer, after the Defect Liability Period has ended and upon correction of Defects by the Contractor.

The Defects Liability Period is 12 months calculated from the Completion Date.

Drawings include calculations and other information provided or approved by the Engineer for the execution of the Contract.

The Employer is the party as defined in the Contract Data, who employs the Contractor to carry out the Works. The Employer may delegate any or all of its functions to a person or body nominated by him for specified functions.

The Engineer is the person named in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and administering the Contract.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the

Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time after the approval from Employer.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

Plant is any integral part of the Works that shall have a mechanical, electrical, electronic, chemical, or biological function.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those that were included in the bidding documents and are factual interpretative reports about the surface and subsurface conditions at the Site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A **Sub-Contractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer after the approval from NHIDCL, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, maintain, and handover to the Employer, as defined in the Contract Data.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order of priority.

- (a) Agreement,
- (b) Letter of Acceptance
- (c) Contractor's Bid,
- (d) Contract Data,
- (e) Conditions of Contract
- (f) Technical Specifications,
- (g) Drawings, if any
- (h) Implementation Manual

- (i) Scope of Work
- (j) Bill of Quantities, and
- (k) Any other document listed in the Contract Data.

3. Language and Law

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4. Engineer's Decisions

4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. Delegation

5.1 The Engineer, duly informing the Employer, may delegate any of his duties and responsibilities to other people except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

7.1 The Contractor may subcontract any portion of work, up to a limit specified in Contract Data, with the prior approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

7.2 The Contractor shall not be required to obtain any consent from the Employer for:

- a. the sub-contracting of any part of the Works for which the Sub-Contractor is named in the Contract;
- b. the provision of labour or labour component.
- c. the purchase of Materials which are in accordance with the standards specified in the Contract.

7.3 Beyond what has been stated in clauses 7.1 and 7.2, if the Contractor proposes sub-contracting of any part of the work during execution of the Works, because of some unforeseen circumstances to enable him to complete the Works as per terms of the Contract, the Employer will consider the following before according approval:

- a) The Contractor shall not sub-contract the Works more than the limit specified in Contract Data..
- b) The Contractor shall not sub-contract any part of the Work without prior consent of the Employer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any of his sub-Contractor, his agents or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents and workmen.

7.3 The Engineer should satisfy himself before recommending to the Employer whether

- a) the circumstances warrant such sub-contracting; and
- b) the sub-Contractor so proposed for the Work possess the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be sub-contracted.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities,

and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

9. Personnel

9.1 The Contractor shall employ the technical personnel named in the Contract Data or other technical persons approved by the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and experience are substantially equal to or better than those of the personnel stated in the Contract Data. If the personnel stated in the contract data are not deployed on site by the contractor, it will be treated as a breach of contract and action will be taken as per clause 53.

9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Works in the Contract.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the

Contractor's employees), natural calamities and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

12. Contractor's Risks

12.1 All risks of loss of or damage to physical property and of personal injury and death, which arise during and in consequence of the performance of the Contract other than the excepted risks, referred to in clause 11.1, are the responsibility of the Contractor.

13. Insurance

13.1 The Contractor at his cost shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of defect liability period for events (a) to (d), in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

- a) Loss of or damage to the Works, Plant and Materials;
- b) Loss of or damage to Equipment;
- c) Loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- d) Personal injury or death.

13.2 Insurance policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in Indian Rupees to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may

effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be debt due.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.

13.4 Both parties shall comply with any conditions of the insurance policies.

14. Site Investigation Reports

14.1 The Contractor, in preparing the Bid, may rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

15. Queries about the Contract Data

15.1 Executing Director will clarify queries on the Contract Data.

16. Contractor to Construct the Works & do maintenance

16.1 The Contractor shall construct, install and maintain the Works in accordance with the documents forming part of the contract.

17. The Works to Be Completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18. Approval by the Engineer

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with specifications and drawings.

18.2 The Contractor shall be responsible for design of Temporary Works.

18.3 The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give complete possession of the Site to the Contractor on the date of signing of agreement.

22. Access to the Site

22.1 The Contractor shall allow access to the Site and to any place where work in connection with the Contract is being carried out, or is intended to be carried out to the engineer and any person/persons/agency authorized by:

- a. The Engineer b.
- The Employer

23. Instructions

23.1 The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by Auditors appointed by the Employer if so required by the Employer.

24. Deleted

25. ARBITRATION

The procedure for arbitration will be as follows:

- (a) In case of Dispute or difference arising between the Employer and a domestic contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently.
- (b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, NHIDCL shall appoint the arbitrator.
- (c) Arbitration proceedings shall be held at New Delhi, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (d) The decision of the majority of arbitrators shall be final and binding upon both parties.
- (e) The cost and expenses of Arbitration proceedings will be borne equally by both parties in accordance with the following fee structure (the signing of the contract shall be the acceptance of the fee structure given below by both the parties):

S.No.	Particulars of fee and other charges	Schedule Amount payable per Arbitrator/ per case
1.	Arbitrator fee	Rs.15,000/- per day subject to a publishing the Award within 12 months. 12 months will be reckoned from the date of first meeting.
2.	Reading Charges	Rs.15,000/-
3.	Secretarial Assistance and Incidental Charges (telephone, fax, postage etc.)	Rs.20,000/-
4.	Charges for Publishing/ declaration of the Award	Maximum of Rs.20,000/-
5.	Other expenses (As per actual	Economy class by air, first class AC by

	Against bills subject to maximum of the prescribed ceiling given below) Traveling Expenses, Lodging and Boarding	train, AC car by road. (i) Up to Rs.15,000/- per day (metro cities) (ii) Up to Rs.7,000/- per day (other cities) (iii)Rs.3,000/- per day own arrangement)
6.	Local Travel	Rs.1,500/- per day
7.	Extra charges for days other than hearing / meeting days (maximum for 2 days)	Rs.3,500/- per day
Note:-	Lodging, boarding and traveling expenses shall be allowed only for those members who are residing 100kms. Away from place of meeting. Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad shall be considered as Metro Cities.	

However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings shall be borne by each party itself.

- (f) Performance under the contract shall continue during the arbitration proceedings and payments due to the contractor by the employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

26 Deleted

B. Time Control

27. Programme

27.1 The Engineer shall issue the indent of work in stages specifying the time limit for the same as and when required. The Contractor shall submit to the Engineer for approval a programme within the time stipulated in the Contract Data showing the general methods, arrangements, order, and timing for all the activities in the Works, along with monthly cash flow forecasts.

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

27.3 The Contractor shall submit to the Engineer for approval an updated Programme at intervals. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

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

28. Extension of the Intended Completion Date

28.1 The Engineer shall extend the Intended Completion Date only after the approval of NHIDCL if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Works, which would cause the Contractor to incur additional cost.

28.2 The Engineer shall decide whether and by how much time to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation

Event or Variation and submitting full supporting information. If the Contractor has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Indented Completion Date.

29. Delays Ordered by the Engineer

29.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works. Delay/delays totaling more than 30 days will require prior written approval of the Employer.

30. Management Meetings

30.1 The Engineer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the plans for the Works.

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

C. Quality Control

31. Identifying Defects

31.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

32. Tests

32.1 The contractor shall be solely responsible for :

- a. Carrying out the mandatory tests prescribed in the documents forming part of contract.
- b. For the correctness of the test results, whether performed in his laboratory or elsewhere.

32.2 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.

32.3 Subject to further condition in contract data

33. Correction of Defects noticed during the Defect Liability Period.

33.1 It is the terms of contract that Short Term Improvement and Maintenance of Building shall be of very high standard, requiring no major repairs for at least Twelve (12) months after the date of completion of works.

33.2 If any defects including shrinkage, cracks, other faults appear in the work within six months of "Taking over" certificate, the Engineer shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is for six months thereafter. The Defects Liability shall be extended for as long as defects remain to be corrected.

33.3 Every time notice of a defect is given, the Contractor shall correct the notified defect at his own cost within the length of time specified by the Engineer's notice. If the contractor is in default the Engineer shall cause the same to be made good by other workmen and deduct the expenses from any sums that may be due to the contractor.

34. Uncorrected Defects

34.1 If the Contractor has not corrected a Defect/completed the work, to the satisfaction of the Engineer, within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected/completed, and the Contractor will pay this amount.

D. Cost Control

35. Bill of Quantities

35.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning and maintaining works to be done by the Contractor.

35.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rates in the Bill of Quantities for each item for the work executed.

35.3 Changes in the Quantities

35.3.1 If the final quantity of the work-done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent provided the change exceeds 1% of initial Contract Price, the Engineer shall adjust the rate to allow for the change. The Engineer shall follow the guidelines of the Employer to determine the changed rate.

35.3.2 The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the Prior approval of the Employer. If requested by the Engineer, the Contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

35.3.3 Change of scope due to six laning or OMT

Deleted

36. Variations

36.1 The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order only after approval from NHIDCL / as per NHIDCL guidelines, in writing, Variations within the scope of the Works he considers necessary or advisable during the progress of the Works. Such Variations shall form part of the Contract and the Contractor shall carry them out and include them in updated Programmes produced by the Contractor. Oral orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

37. Payments for Variations

37.1 If rates for Variation items are specified in the Bill of Quantities, the Contractor shall carry out such work at the same rate. This shall apply for Variations only up to the limit prescribed in the Clause 35. If the Variation exceeds this limit, the rate shall be derived under the provisions of clause 37.2 and 37.3 for quantities (higher) exceeding the deviation limit.

37.2 If the rates for Variation are not specified in the Bill of Quantities, the Engineer shall derive the rate from similar items in the Bill of Quantities.

37.3 If the rate for Variation item cannot be determined in the manner specified in Clause 37.1 or 37.2, the Contractor shall, within 14 days of the issue of order of Variation work, inform the Engineer the rate which he proposes to claim, supported by analysis of the rates. The Engineer shall assess the quotation and determine the rate based on prevailing market rates within one month of the submission of the claim by the Contractor and approval from NHIDCL will be taken. As far as possible, the rate analysis shall be based on the standard data book and the current schedule of rates of the district public works division. The decision of the Employer on the rate so determined shall be final and binding on the Contractor.

38. Cash Flow Forecasts

38.1 When the Programme is updated, the Contractor shall provide the Engineer within updated cash flow forecast.

39. Payment Certificates

39.1 The Contractor shall submit to the Engineer monthly statements of the value of the work executed less the cumulative amount certified previously supported with detailed measurement of the items of work executed.

39.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question.

39.3 The value of work executed shall be determined, based on measurements by the Engineer.

39.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

39.5 The value of work executed shall also include the valuation of Variations and Compensation Events.

39.6 The Engineer / Employer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

39.7 The final bill shall be submitted by the contractor within one month of the actual date of completion of the work; otherwise, the Engineers certificate of the measurement and of the total amount payable for work accordingly shall be final and payment made accordingly within a period of sixty days as far as possible.

40. Payments

40.1 Payments shall be adjusted for deductions for advance payments, security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts Engineer had certified within 28 days of the date of each certificate.

40.2 The Authorized Representative of the Employer shall make the payment certified by the Engineer.

40.3 Items of the Works for which no rate or price has been entered in the Bill of Quantities, will not be paid for by the Employer and shall be deemed to be covered by other rates and prices in the Contract.

41. Compensation Events

41.1 The following shall be Compensation Events unless they are caused by the Contractor:

- a) The Engineer orders a delay or delays exceeding a total of 30 days.
- b) The effects on the Contractor of any of the Employer's Risks.

41.2 If a Compensation Event would prevent the Works being completed before the Intended Completion Date, the Intended Completion Date shall be extended. The Engineer shall decide whether and by how much the Intended Completion Date shall be extended after the approval of the employer.

41.3 The contractor shall not be entitled to compensation to the extent that the Employers interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer/Employer.

42. Taxes & Currencies for payments

42.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other levies, duties, royalties, cess, toll, taxes of Central and State Governments, local bodies and authorities that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

42.2 All payments will be made in Indian Rupees.

43. Price Adjustment - Deleted

43.1. Deleted

43.2. Deleted

44. Security Deposit / Retention Money

44.1 The Employer shall retain security deposit of 6% (six percent) of the amount from each payment due to the Contractor until Completion of the whole of the Works.

44.2 The security deposit/retention money and the performance security will be released to the Contractor when the Defect Liability period is over, and the Engineer has certified that the Defects, if any, notified by the Engineer to the Contractor before the end of this period have been corrected.

44.3 If the contractor so desires then the Security Deposit/retention money can be released on submission of unconditional Bank Guarantee at the following two stages: -

- (a) At a point after the progress of work in financial term (gross value of work done) has reached 50% of the contract amount
- (b) After the retention money has been deducted to the full value (5% of the Contract Amount).

45. Liquidated Damages

45.1 The Contractor shall pay liquidated damages to the Employer at the rate or part thereof stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in

the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's other liabilities.

45.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting in the next payment certificate. The contractor shall not be paid interest on the over payment of liquidated damages.

46. Advance Payment: Deleted

47. Securities

47.1 Subject to further condition in contract data, the Performance Security equal to Five percent of the contract price and additional security for unbalanced bids shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in the form given in the Contract Data and by a prescribed bank. The Performance Security shall be valid until a date 28 days after the expiry of Defect Liability Period and the additional performance security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion. The validity shall account for additional 3 months' time to account for BG verification, signing of contract and start date

48. Cost of Repairs

48.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied/ rectified by the Contractor at their cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

49. Completion

49.1 The Contractor shall request the Engineer to issue a certificate of Completion of the Works, and the Engineer will do so upon deciding that the Works is completed.

50. Taking Over

50.1 The Employer shall take over the Site and the Works within seven days of the Engineer's issuing a certificate of Completion.

51. Final Account

51.1 The Contractor shall supply to the Engineer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate within 56 days of receiving the Contractor's revised account.

52. Operating and Maintenance Manual

52.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them within 28 days from date of issue of certificate of completion.

52.2 If the Contractor does not supply the Drawings and/or manuals by the stipulated date or they do not receive the Engineer's approval, the Engineer shall withhold the amount equal to Rs. 5 lakhs from payments due to the Contractor.

53. Termination

53.1 The Employer may terminate the Contract if the Contractor causes a fundamental breach of the Contract.

53.2 Fundamental breaches of Contract include, but shall not be limited to, the following:

- a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;
- b) the Contractor is declared as bankrupt or goes into liquidation other than for approved reconstitution or amalgamation;
- c) the Engineer/Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
- d) the Contractor does not maintain a Security, which is required;
- e) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in clause 45;
- f) the Contractor fails to provide insurance cover as required under clause 13;
- g) if the Contractor, in the judgment of the Employer, has engaged in the corrupt or fraudulent practice in competing for or in executing the Contract. For the purpose of this clause, "corrupt practice" means offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution. "Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid process at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
if the Contractor has not completed at least thirty percent of the value of Work required to be completed after half of the completion period has elapsed;
if the Contractor fails to set up a field laboratory with the prescribed equipment, within the period specified; and
any other fundamental breach as specified in the Contract Data.

53.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

53.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible but in no case later than 7 days. In the event the employer terminates the agreement on account of any of the specified defaults of the Contractor, the Agreement allows the Employer to forfeit the performance security & retention money of the contractor.

54. Payment upon Termination

54.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

54.2 Save and except Cl 35.3.3, if the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments outstanding on the date of the certificate, less other recoveries due in terms of the Contract, and less taxes due to be deducted at source as per applicable law.

In case of termination on account of award of 2 laning work stated in Cl 35.3.3, the Engineer shall issue a certificate for the value of work done till termination, less advance payments outstanding, less other recoveries due in terms of contract and less taxes due to be deducted at source as per applicable law.

55. Property

55.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer for use for completing balance work if the Contract is terminated because of the Contractor's default.

56. Release from Performance

56.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

F. Other Conditions of Contract

57. Labour

57.1 The Contractor shall, make arrangements of his own cost and expenses for the engagement of all staff and labour, local or others; for their payment, housing, feeding and transport; and for compliance with various labour laws/ regulations.

57.2 The Contractor shall, as asked by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

58. COMPLIANCE WITH LABOUR REGULATIONS

58.1 During the currency of the Contract, the Contractor and his sub-Contractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be notified already or that may be notified under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor including from his performance security/ retention money. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer. The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

58.2 SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

a) **Workmen Compensation Act 1923:** - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

b) **Payment of Gratuity Act 1972:** - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed the prescribed minimum years (say, five years) of service or more or on death the rate of prescribed minimum days" (say, 15 days) wages for every

completed year of service. The Act is applicable to all establishments employing the prescribed minimum number (say, 10) or more employees.

c) Employees P.F. and Miscellaneous Provision Act 1952: The Act Provides for monthly contributions by the Employer plus workers at the rate prescribed (say, 10% or 8.33%). The benefits payable under the Act are:

- i. Pension or family pension on retirement or death as the case may be.
- ii. Deposit linked insurance on the death in harness of the worker.
- iii. Payment of P.F. accumulation on retirement/death etc.

d) Maternity Benefit Act 1951: - The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

e) Contract Labour (Regulation & Abolition) Act 1970: - The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ prescribed minimum (say 20) or more contract labour.

f) Minimum Wages Act 1948: - The Employer is to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Constructions of buildings, roads, runways are scheduled employment.

g) Payment of Wages Act 1936: - It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.

h) Equal Remuneration Act 1979: - The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against female employees in the matters of transfers, training and promotions etc.

i) Payment of Bonus Act 1965: - The Act is applicable to all establishment employing prescribed minimum (say, 20) or more workmen. The Act provides for payments of annual bonus within the prescribed range of percentage of wages to employees drawing up to the prescribed amount of wages, calculated in the prescribed manner. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. States may have different number of employment size.

j) Industrial Disputes Act 1947: - The Act lays down the machinery and procedure for resolution of industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

k) Industrial Employment (Standing Orders) Act 1946: - It is applicable to all establishments employing prescribed minimum (say, 100, or 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get these certified by the designated Authority.

l) Trade Unions Act 1926: - The Act lays down the procedure for registration of trade unions of workmen and Employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

m) Child Labour (Prohibition & Regulation) Act 1986: - The Act prohibit employment of children below 14 years of age in certain occupations and processes and provides for regulations of employment of children in all other occupations and processes. Employment of child labour is prohibited in building and construction industry.

n) Inter-State Migrant Workmen's (Regulation of Employment &

Conditions of Service) Act 1979: - The Act is applicable to an establishment which employs prescribed minimum (say, five) or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as Housing, Medical-Aid, Travelling expenses from home up to the establishment and back etc.

o) The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996: -All the establishments who carry on any building or other construction work and employs the prescribed minimum (say, 10) or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as canteens, first-aid facilities, ambulance, housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

p) Factories Act 1948: - The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing the prescribed minimum (say, 10) persons or more with aid of power or another prescribed minimum (say, 20) or more persons without the aid of power engaged in manufacturing process.

59. Drawings and Photographs of the Works

59.1 The contractor shall do photography/videography of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work and lastly after the completion of the work. No separate payment will be made to the contractor for this.

59.2 The Contractor shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Engineer in writing. No photograph of the works or any part thereof or plant employed thereon, except those permitted under clause 59.1, shall be taken or permitted to be taken by the Contractor or by any of his employees or any employees of his sub-Contractors without the prior approval of the Engineer in writing. No photographs/ Videography shall be published or otherwise circulated without the approval of the Engineer in writing.

60. The Apprenticeship Act 1961

60.1 The Contractor shall duly comply with the provisions of the Apprenticeship Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

CONTRACT DATA TO GENERAL CONDITIONS OF CONTRACT

Clause Reference
[CL.1.1]

Items marked “N/A” do not apply in this Contract.

The Employer is:-

Regional Office-Agartala, 3rd Floor, U D Bhawan,
Sankuntala road, Agartala, Tripura-799001

Email:edp-agartala@nhidcl.com

Name of Authorized Representative: -

Executive Director (Projects),

Regional Office-Agartala, 3rd Floor, U D Bhawan,
Sankuntala road, Agartala, Tripura-799001

Email:edp-agartala@nhidcl.com

2. The Engineer in Charge is: [CL.1.1]
Designation: General Manager (Projects), respective PMUs
Address: National Highways & Infrastructure Development Corporation Ltd.
3. The intended Completion Date for the whole of the works is **9 months** [CL.1.1, 17&28]
from start date.
4. The location of site given in the Bid notice (SECTION I) [CL.1.1]
5. The start date shall be reckoned within 15 days after the date of issue of the notice to proceed with the work. [CL.1.1]
6. (a) The name and identification number of the contract is given in the table given in Bid Notice (SECTION I) [CL.1.1]
7. (a) The law which applies to the contract is the law of Union of India. [CL.3.1]
(b) The language of the contract documents is English [CL.3.1]
8. The limit of subcontracting is 50% of initial contract price [CL.7.1]
9. Schedule of other contractor –NIL [CL.8.1]
10. Technical Personnel are as given in the ITB (SECTION II) [CL.7.1]
11. Amount of Insurance are: [CL.13.1]
(a) Rupees equivalent to contract price
(b) Rupees equivalent to 5% of contract price
(c) Rupees equivalent to 5% of contract price
(d) Rupees 20 lakhs for multiple incidents
And deductible as per premium rate.
12. Site investigation report-NIL [CL.14.1]
13. (A) The period for submission of the programme for approval of Engineer shall be 21 days from the issue of Letter of Commencement. [CL.27.1]
(B) (a) Identified indented work
(1) Weekly Indent, Monthly Indent, Quarterly Indent and Bi-annual Indent – 3 days before start of week; 7 days before start of month; 15 days before start of quarter and 28 days before bi-annual period concerned
(2) Emergent Indents – Within 24 hours
14. Amount to be withheld for delays in submission of updated programme: 1% of value of work corresponding to the updated programme.
15. The period for setting up a field laboratory with the prescribed equipment relevant to items of work in BOQ is 30 days from the days from the date of notice to start work.

16. (a) Amount of liquidated damages for delay in completion of works
For whole of work $(1/2000)^{\text{th}}$ of the Initial Contract Price, rounded off to the nearest Thousand, per day.
For Sectional Completion (wherever specified, in item 6 of Contract Data $(1/200)^{\text{th}}$ of initial contract price for 5 km section, rounded off to the nearest thousand per day.

(b) Maximum limit of liquidated damages for delay in completion of work.
10 percent of the initial contract price rounded off to the nearest thousand.

[CL.45.1]

17. The standard form of Performance Security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in the Bidding Documents. [CL.47.1]

18. Other fundamental breach is that the contractor has failed to complete 75% of value of indented work in any 3 indents issued by the Engineer. [CL.53.2]

19. The percentage to apply to the value of work not completed representing the Employer's additional cost for completing the work shall be 20%. [CL.54.1]

Drawings for reference

Relevant drawings are enclosed with Tender documents for ready reference

Tentative estimates/indicative for nature

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
1	2.81	Earth work in excavation by mechanical means(Hydraulic Excavator.)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 m on plan) including dressing of sides & ramming of bottoms. lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. All kinds of soil.The contractor has to detect Different utilities like sewer line, water supply line, electric cable, telephone cable, gas pipe line etc. Using utility detecting machine before start of excavation only after getting permission of Engineer-in-charge	51.10	cum	252.3	12892.91
2	2.25	Filling available excavated earth (excluding rock) in trenches, plinth sides of foundations etc. , in layers not exceeding 20 cm in depth. consolidating each deposited layer by ramming and watering lead upto 50m and lift upto 1.5m.	51.10	cum	219.65	11224.44
	2.25(a)	a) Excavating, supplying and filling of local earth (including royalty)by mechanical transport upto a lead of 5km also including ramming and watering of the earth in layers not exceeding 20cm in trenches, plinth, sides of foundation etc. complete.				
3	4.1.10	P/L in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level				
		1:5: 10 (1 cement: 5 coarse sand(zone-III): 10 graded stone aggregate 40mm nominal size)	11.24	cum	5520.3	62061.03
4	4.11	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 20mm nominal size).	12.26	sqm	418.9	5137.54
5	4.12	Extra for providing and mixing water proofing material in cement concrete per 50kg work in doses by weight of cement as per manufacturer's specification.	40.88	per 50 Kg.bag	56.55	2311.83
6	4.13	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the	112.42	sqm	110	12366.56

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
		surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.				
7	5.33.2	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note:- Cement content considered in this item is @330 Kg/cum. Excess/less cement used per design mix is payable/recoverable separately) All works above plinth level upto four V level.	12.26	cum	9400.85	115295.41
8	5.1.2	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level				
8		1:1:5:3 (1 cement: 1.5 coarse sand (Zone-III): 3 graded stone aggregate 20mm nominal size)	5.11	cum	7718.25	39441.42
8		Centering and shuttering including strutting, propping etc. and removal of form for:				
	5.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)				
8	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	57.23	sqm	552.05	31595.85
8	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	51.81	sqm	693.05	35904.63
9	5.22.3	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Cold twisted bars	1704.75	kilogram	83.5	142346.29
10	6.1.2	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement; 6 coarse sand)	20.44	cum	6157.45	125861.97

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
11	6.32.2	Brick work with clay flyash F.P.S. (non modular) brick of class designation 7.5 in superstructure above plinth level up to floor five level in : Cement mortar .1:6(1 cement: 6 coarse sand).	18.40	cum	7752.9	142626.53
12	6.45.2	Half brick masonry with non modular fly ash bricks of class designation 10, conforming to IS :12894, in superstructure above plinth and upto floor V level.Cement mortar .1:4(1 cement: 4 coarse sand).	65.92	sqm	917.0	60449.50
13	6.15	Extra for providing and placing in position 2Nos 6mm dia MS bars at every third course of half brick masonry(with FPS bricks)	65.92	sqm	80.1	5280.27
14	8.2.1.2	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size of approved shade.colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement:4 coarse sand) with joints treated with white cement mixed with matching pigment, epoxy touch ups, including, rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels. Granite of any colour and shade				
		Area of slab over 0.50sqm	1.84	sqm	2552.65	4695.99
15	9.117.1	Providing and fixing factory made of UPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance ± 1 mm), with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19mm and 1 mm(± 0.1 mm) wall thickness and 3 nos. Stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer-in-charge Extruded section profile size 48x40mm	68.48	Metre	221.65	15177.71

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
16	9.118.2	Providing and fixing to existing door frames.30 mm thick factory made Polyvinyl Chloride (PVC) door shutter made of styles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2 mm (± 0.2 mm), with inbuilt decorative moulding edging on one side. The styles and rails mitred and joint at the corners by means of M.S.galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 25x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x30 mm and 2 mm (± 0.2 mm) wall thickness fixed to the shutter styles by means of plastic/ galvanised M.S. 'U' cleats.The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness . The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge.	22.48	sqm	1978.65	44489.27
17	10.11.1	Providing and fixing factorymade ISI marked steel glazed doors, windows and ventilators side / top/ centre hung with beading and all members such as F7D, F7B, K11 B and K12 B etc. complete of standared rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and rivetyed, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings,complete all as per approved design (sectional weight of onlysteel members shall be measured for payment). Fixing with 15x3 mm lugs 10 cm long embadded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size).	91.06	kg	116.5	10608.82

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
18	9.97.3	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :200x10 mm	13.00	each	90.00	1170.00
19	9.96.2	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868),transparent or dyed to required colour or shade, with nuts and screws etc. complete :250x16 mm	13.00	each	231.7	3012.10
20	9.100.1	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete 125 mm	27.00	each	59.65	1610.55
21	9.101.2	Providing and fixing Alluminium hanging floor door stopper,ISI marked anodised (anodic coating not less than grade AC 10 as per IS; 186B) transparent or dyed to required colour or shade with nuts and screws tec. Complete: twin rubber stopper.	3.00	each	62.05	186.15
22	9.48.1	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete fixed to steel windows by welding.	47.96	kg	165.3	7928.43
23	11.37A	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS; 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by the Engineer-in-charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	45.99	sqm	927.9	42675.37

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
24	8.31	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS; 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by the Engineer-in-charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	204.41	sqm	1030.3	210599.50
25	12.16.1	10 cm thick (average) mud phaska of dumped brick earthen roofs laid to slope consolidated and plastered with 25 mm thick mud mortar mixed with bhusa @ 35 kg per cum of earth and gobri leaping with mix 1:1 (1 clay: 1 cow dung) and covered with flat tile bricks, grouted with cement mortar 1:3 (1 cement :3 fine sand) mixed with 2% of integral water proofing compound by weight of cement and finished neat.				
25		With common burnt clay F.P.S (non modular) brick tile of class designation 10.	45.99	sqm	826.75	38023.35
26	13.16.1	6 mm cement plaster of mix 1:3 (1 cement: 3 fine sand)	45.99	sqm	227.35	10456.13
27	13..37	White washing with lime to give an even shade: new work (three or more coats)	45.99	sqm	28.55	1313.05
28	13.48.3	Finishing walls with Delux Multi surface paint system for interiors and exteriors using primer as per manufacturer,s specifications, painting steel work with Delux multi surface paint to give an even shade. Two or more coats applied @ 0.9 litre/10 sqm over an under coat of primer applied @ 0.8 litre/10 sqm of approved brand and manufacture.	45.99	sqm	125.8	5785.71
29	17.1.1	Providing and fixing water closet squatting pan(indian type W.C. pan) with 100 mm sand cast iron P or S trap 10 litre low level white PVC flushing cistern with manually controlled device (handle lever) conforming to I.S. 7231 with all fittings and fixtures complete including cutting and making good the walls and floors wherever required. White vitrous china orissa pattern w.c pan of size 580×440 mm	6.00	each	5421.5	32529.00

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
		with integral type foot rests.				
30	17.2.1	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :W.C. pan with ISI marked white solid plastic seat and lid	1.00	each	5260.95	5260.95
31	17.4.2	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floorsd wherever required:				
31		Range of two urinal basins with 5 litre white P.V.C .automatic flushing cistern	2.00	each	7677.75	15355.50
32	17.7.2	Providing and fixing wash basin with c.l.brackets ,15 mm C.P brass pillar tape ,32mm CP brass waste of standard pattern incl painting of fittings and cutting and making good the walls wherever required-White vitreous china wash basin size 630x450 mm with a single 15mm C.P brass pillar tap	4.00	each	2751.30	11005.20
33	17.28.2.2	Providing and fixing P.V.C waste pipe for sink or wash basin incl PVC waste fittings complete Flexible pipe 40 mm dia	4.00	each	101.10	404.40
34	17.31	Providing and fixing 600x450mm bevelled edge mirror of superior glass (of approved quality) complete with 6mm thick hard board ground fixed to wooden cleats with c.p brass screws and washers complete	4.00	each	1283.05	5132.20
35	17.35.1	Providing and fixing soil, waste and vent pipes:				

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
35	a	100 mm dia. Sand cast iron S&S pipes as per IS :1729 (17.35.1.1)	8.18	metre	1008.20	8243.29
35	b	75 mm dia(17.35.2.1)	10.00	each	923.25	9232.50
36	17.37.1	Providing and fixing MS holder-bat clamps of approved design to sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10 x 10 x 10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm normal size) including cost of cutting holes and making good the wall etc. For 100 mm dia. Pipe.	22.00	each	287.45	6323.90
37	17.38.1.1	Providing and fixing bend of required degree with access door, insertion rubber washer 3mm thick , bolts and nuts complete. 100mm Sand cast iron s & S as per IS:1729	12.00	each	461.65	5539.80
38	17.40.1.1	Providing and fixing heel rest sanitary bend: 100 mm Sand cast iron S&S as per IS 1729	8.00	each	500.45	4003.60
39	17.44.1.1(a)	Providing and fixing single equal plain junction of required dgree.				
39		100 x 100 x 100 Sand cast iron S&S as per IS 1729	2.00	each	517.85	1035.70
39	17.44.2.1	Providing and fixing single equal plain junction of required dgree 75x75x75mm sand cast iron S&S as per IS 1729	2.00	each	400.80	801.60
40	17.42.1.1	Providing and fixing double equal plain junction of required dgree 100 x 100 x 100 x 100sand cast iron S&S as per IS 1729	3.00	each	825.55	2476.65
41	17.56.1.1	Providing and fixing terminal guard :100 mm Sand cast iron S&S as per IS 1729	11.00	each	355.95	3915.45
42	17.56.2.1	Providing and fixing terminal guard :75 mm Sand cast iron S & S as per IS 1729	1.00	each	284.40	284.40
43	17.58.1	Providing lead caulked joints to sand cast iron/centrifugally cast (Spun)iron pipes and fittings of diameter:				
43		100 mm	31.00	each	481.45	14924.95
43		75 mm	5.00	each	407.90	2039.50
44	17.59.1	Providing and fixing M.S. stays and clamps for sand cast iron/ centrifugally cast (spun) iron pipes of diameter :100 mm	10.00	each	126.50	1265.00
45	17.60.1.1	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : 100 mm inlet and 100 mm outlet .Sand cast iron S&S as per IS - 3989	11.00	each	1512.55	16638.05

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
46	18.8.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c 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, 15 mm nominal outer dia Pipes..	51.10	metre	409.65	20933.73
47	18.8.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c 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. 20 mm nominal outer dia Pipes.	51.10	metre	478.15	24434.18
48	18.9.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 20 mm nominal outer dia Pipes	25.55	metre	253.70	6482.23
49	18.54.1	Providing and fixing PTMT bib cock of approved quality and colour				
49	a	15mm nominal bore, 86 mm long, weighing not less than 88gms.	12.00	each	116.55	1398.60
50	18.63	Providing and fixing PTMT angle stop cock 15 mm nominal bore, weighing not less than 85 gms	32.00	each	155.35	4971.20
51	18.55.2	Providing and fixing PTMT stop cock of approved quality and colour 20 mm nominal bore, 89 mm long weighing not less than 88 gms	8.00	each	151.35	1210.80

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
52	18.18.2	Providing and fixing ball valve (brass) of approved quality ; High or low pressure with plastic floats complete 20 mm nominal bore.	1.00	each	386.40	386.40
53	18.19.1.2	Providing and fixing gun metal non-return valve of approved quality (screwed end) :25 mm nominal bore Vertical.	1.00	each	504.45	504.45
54	18.21.1.1	Providing and fixing unplasticised PVC connection pipe with brass union. 30cm length 15mm nominal bore	32.00	each	72.85	2331.20
55	18.41.2	Providing and filling of sand of grade zone V or coarser grade around the G.I.Pipes in External work 20mm diameter pipe	1.02	metre	144.55	147.73
56	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary holes for inlet ,outlet and overflow pipes but without fittings and the base support for tank .(D280Syntax/SPL or equivalent)	2000.00	per litre	8.80	17600.00
57	19.6.3	Providing and laying non-pressure NP2 class (light duty) R.C.C pipes with collars jointed with stiff mixture of cement : mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc complete 250 mm dia .R.C.C .pipe	15.33	metre	754.45	11566.06
58	19.2.4	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :250 mm diameter S.W. pipe	16.35	metre	1346.95	22025.97
59	19.4.2.1	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:With common burnt clay F.P.S. (non modular) bricks of class designation 7.5 each	2.00	each	2317.40	4634.80

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
60	19.7.1.1	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone- III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone- III) : 8 graded stone aggregate 40 mm nominal size),inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3coarse sand) finished with floating coat of neat cement and makingchannels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
		Inside size 90x80 cm and 60 cm deep including CI cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg); With FPS bricks of class designation 7.5.	1.00	each	10905.05	10905.05
61	18.62.2	Providing and fixing PTMT Ball cock of approved quality ,colour and make complete with Epoxy coated aluminium rod with L.P./ H.P.H.D plastic ball.				
		20 mm nominal bore , 120 mm long . Weighing not less than 198 gms.	1.00	No.	252.65	252.65
62		Supplying and Fixing rolling shutters of approved make ,made of required size M.S laths , interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets ,side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS : 4454 - part 1 and M.S. top cover of required thickness for rolling shutters				
	10.6.2	80x1.20 mm M.S laths with 1.20 mm thick top cover	4.29	Sqm	2803.65	12034.74
63		Construction of septic tank for 300user as per attached drawing etc., all completed as per direction	1.00	LS	80000.00	80000.00

Estimate for construction of Toilet Block						
S.No	DSR	Description of Items	Qty.	Unit	Rate	Amount
		of EIC				
64		Construction,testing and commissioning of Deep Tubewell for water supply along with installation of Tubewell of 4"/2" size with submersible pump with electric panel of 1 H.P (varuna or Rigman make) including Charges of well bore as well as transportation of the materials and labour all inclusive for total 300 ft boring for all type of soils, inclusive the cost of electric connection and proper earthing etc, all completed as per direction of EIC	1.00	LS	100000.00	150000.00
65		Supplying, installation, testing and commissioning of electric connection and wiring along with all fixtures as per requirement such as switch/MCB/light point/ exhaust fan/tube lights etc. all completed as per direction of EIC	1.00	LS	50000.00	50000.00
					Total Rs	1770760

(SECTION-VI)
TECHNICAL SPECIFICATIONS

Technical Specification

1.0 General

- 1.1 Except for the items, for which Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the “CPWD Specifications 2019 Vol. I & II” and as per instructions of Engineer-in-Charge. Wherever CPWD Specifications are silent, the latest IS Codes / Specifications shall be followed and the rates should be all inclusive.

In the case of discrepancy between the Schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed:-

- (i) Nomenclature of item as per Schedule of Quantities
- (ii) Special Conditions.
- (iii) Particular Specifications.
- (iv) CPWD Specifications.
- (v) Architectural Drawings.
- (vi) Indian Standard Specifications of B.I.S.
- (vii) All non-schedule items shall be governed by manufacturer’s specifications.

The works to be under taken by the contractor shall inter-alia include the following:

- i. Preparation of structural detailed drawing of Toilet and As BUILT drawings also.
- ii. Obtaining of Statutory permissions where-ever applicable and required.
- iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
- iv. Warranty obligation for the equipment supplied by the contractor.

Contractor shall provide all the kiosks drawings for all the co-ordinate services before starting any work or placing any order for any of the services MEP system etc. These kiosks drawings shall be got approved from engineer in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for site engineer approval prior to delivery of material at site.

- 1.2 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions/amendments as issued by the Bureau of Indian Standards upto last date of receipt of tenders. The Contractor shall keep at his own cost all such publications including relevant Indian Standard applicable to the work at site.
- 1.3 The work shall be executed and measured as per metric dimensions given in the Schedule of Quantities, drawings etc. (FPS units wherever indicated are for guidelines only).
- 1.4 The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. Wherever absolutely essential, the chase shall be cut using chase cutting machines. Chases will not be allowed to be cut using hammer/chisel. The electrical boxes should be fixed in walls simultaneously while raising the brick work. The contractor shall ensure proper co-ordination of various disciplines viz. sanitary & water supply, horticulture & electrical etc.
- 1.5 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested before covering.

- 1.6 Samples including brand/quality of materials and fittings to be used in the work shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.
- 1.7 Equipment like concrete pump excavators/Transit mixer etc. shall be allowed to be moved away from the site when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.
- 1.8 The contractor, his agents / representative, workman etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.
- 1.9 Contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.
- 1.10 The tenderer shall see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost.
- 1.11 Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.
- 1.12 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to work due to negligence on his part. No hindrances shall be caused to traffic, during the execution of the work.
- 1.13 The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc are to be constructed.
- 1.14 The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.
- 1.15 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.
- 1.16 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws and municipal body / corporation where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested by the Municipal Body / Corporation authorities wherever required at his own cost.
- 1.17 The work shall be carried out in accordance with the Architectural drawings and Structural drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work, nomenclature of items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall supersede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the

commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account.

- 1.18 The Architectural drawings other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fittings involved unless and otherwise specifically mentioned.
- 1.19 The contractor should submit the kiosks drawing of staging and shuttering for approval of Engineer-in-Charge before actually commencing the execution of work under the item. Nothing extra shall be payable on this account.
- 1.20 Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.
- 1.21 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
- 1.22 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.
- 1.23 The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and approval of the same before use in the work.
- 1.24 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting/shifting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.

In case the existing services are to be shifted permanently, then before dismantling the existing services, alternate/diversion of service lines has to be laid by the contractor so that there is no interruption in use of existing services.

The contractor has to plan the alternate suitable route for diversion/shifting of service lines and get the same approved from the Engineer-in-Charge before starting shifting of services. Nothing extra shall be paid except the payment of dismantling and laying of new service lines as per conditions of contract.

- 1.25 The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.
- 1.26 The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.
- 1.27 For construction works which are likely to generate malba / rubbish to the tune of more than a tempo / truck load, contractor shall dispose of malba, rubbish & other unserviceable materials

and wastes at his own cost to the notified specified dumping ground and under no circumstances these shall be stacked/ dumped even temporarily, outside the construction premises.

- 1.28 If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.
- 1.29 The structural and architectural drawings shall at 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 appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.
- 1.30 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.
- 1.31 Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been in-built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.
- 1.32 For the purpose of recording measurements and preparing running account bills, the abbreviated nomenclature indicated in the publications Abbreviated Nomenclature of Items of DSR 2018 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 relevant specifications.
- 1.33 In case of items for which abbreviated nomenclature is not available in the aforesaid publication and also in case of extra and substituted items for which abbreviated nomenclature are not provided for in the agreement, full nomenclature of item shall be reproduced in the measurement books and bill forms for running account bills. For the final bill, however, full nomenclature of all the items shall be adopted in preparing abstract in the measurement books and in the bill forms.
- 1.34 The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer in charge. Nothing extra shall be paid on this account.
- 1.35 No payment will be made to the contractor for damage caused by rains, or other natural calamities during the execution of the works and no such claim on this account will be entertained.
- 1.36 The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth or building materials etc. shall be stacked/collected in areas where other buildings, roads, services, compound walls etc. are to be constructed.
- 1.37 The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where however phased delivery of work is contemplated these provisions shall apply separately to each phase.
- 1.38 Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer in charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their name for approval to engineer in charge. Any material procured without prior approval of Engineer in charge in writing is liable to be rejected. Engineer in charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Non standard materials shall not be accepted.
- 1.39 Doors and frames shall be procured from specialist firms and name of such agencies shall be got approved from the Engineer in charge well in advance.

- 1.40 The construction joints shall be provided in predetermined locations only as decided by Engineer in charge. The cost of shuttering for these construction joints shall be included in item of Concrete work/RCC work and nothing extra shall be payable on this account to the contractor.
- 1.41 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night speed limit boards red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work.
- 1.42 The contractor shall provide at his own cost suitable weighing surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.
- 1.43 Contractor shall provide permanent bench marks and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings
- 1.44 Other agencies will also simultaneously execute and install the works of electrification, air conditioning, lifts, fire-fighting etc. for this work and the contractor shall provide necessary facilities for the same. The contractor shall leave such recesses, holes openings etc. as may be required for the electric, air-conditioning and other related works (for which inserts, sleeves, brackets, conduits base pinion, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work & brick work, if required and nothing extra shall be payable on this account.
- 1.45 If the work is carried out in more than one shift or during night no claim on this accounts shall be entertained.
- 1.46 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.
- 1.47 The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.
- 1.48 The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However cost of photographs, slides, audio/ videography etc shall be born by the department.
- 1.49 The Plinth Level of Building is to be kept as per Architectural drawings. All the items of works such as PCC, RCC, Brickwork and shuttering etc. in foundation upto this plinth level with be measured and paid as the work done upto plinth level. Nothing extra due to higher plinth will be paid and contractors rates quoted for all these items shall, therefore, be deemed to cater for extra height of plinth.
- 1.50 The contractor shall establish a laboratory at site to test the coarse aggregate, fine aggregate, water, sand, cement etc.
- 1.51 With each Running Bill, the details of test carried out shall be submitted by the contractor.
- 1.52 On completion of work, the contractor shall submit at his own cost four prints of “as built” drawings to the Engineer-in-Charge. These drawings shall have the following information.

- a) Run off of all piping and their diameters including soil, waste pipes and vertical stacks.
 - b) Ground and invert level of all drainage pipes together with locations of all manholes and connections, upto out fall.
 - c) Run off of all water supply lines with diameters, location of control valves, access panels etc.
- In case the contractor fails to supply “as built drawing” aforesaid within 30 days of the date of completion, then the recovery @ Rs.10, 000/- each for such set of drawings shall be made from the contractor’s final bill.
- 1.53 In the item of providing and fixing precast reinforced cement concrete in shelves the cost of cutting chases and making good the same shall be inclusive in the item and nothing extra shall be paid on this account.
- 1.54 In the item of finishing walls with water proofing paint, only the plain / flat area shall be measured for payment and nothing extra shall be paid on account of pointed wall surface.
- 1.55 Unless otherwise specified in the schedule of quantities or CPWD specifications, the rates for respective items shall be all inclusive and apply to the following: -
- (i) All lifts & all heights, floors including terrace, leads and depths.
 - (ii) All labour, material, tools and plants and other inputs involved in the execution of the item.
 - (iii) Any of the conditions and specifications mentioned in the tender documents.
 - (iv) Pumping / bailing out surface water / rain water / sub soil water, if necessary for any reason.
 - (v) Providing sunk flooring in bath-rooms, kitchen, etc.
 - (vi) Any legal or financial implications resulting out of disposal of earth, if any.
 - (vii) Payment of Royalty at the prevailing rates, if any, on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities.
 - (viii) Performance test of the entire installation(s) before the work is finally accepted.
 - (ix) Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.
 - (x) All incidental charges for cartage, storage and safe custody of materials brought to site.

QUALITY ASSURANCE OF THE WORK

1. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
2. The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
3. The contractor shall submit kiosks drawings of staging and shuttering arrangement, aluminum work, and other works as desired by Engineer In Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer –in charge before execution.

A). Laboratory at Site:

The contractor shall provide at site, the testing equipment and materials for the field tests mentioned in the list of mandatory tests given in CPWD specifications 2019 Vol. 1 & 2 at his own cost. Nothing extra shall be payable to him on this account. In all cases, cost of samples and to and fro carriage shall be borne by the contractor.

The representatives of the department shall be at liberty to inspect the testing facilities at site and conduct testing at random in consultation with Engineer in charge. The contractor shall provide all necessary facilities for the purpose. The laboratory shall be equipped as per lab details provided on page No.84 to 86.

All test which can be performed in the site lab with above equipments shall be done at site except that at least 10% testing of materials shall be got done from external laboratories. However, for the tests to be carried out by the external laboratories, the contractor shall supply free of charge all the materials required for testing, including transportation. The testing charges shall be born by the Contractor / Department in the manner described in Para-B below.

B) Other Laboratories:

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

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

However, no testing charges will be payable by the contractor for the tests conducted in CPWD laboratories.

If the tests, which were to be conducted in the site laboratory, are conducted in other laboratories for whatever the reasons, the cost of such tests shall be borne by the contractor.

5. Sampling of Materials:

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

6. The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.
7. BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the

specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate or test certificate from approved testing laboratory to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.

8. The contractor shall procure all the materials at least in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
9. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
10. The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

11. QUALITY & QUARRIES OF STONE AGGREGATE & SAND

The Stone aggregate/ stone/ coarse sand/ fine sand shall be brought by the contractor from any quarry legitimately authorized by the concerned local authorities and the materials brought at site should conform to relevant CPWD specifications.

12. The contractor shall provide approved type of supports for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings. Spacer blocks of required shape and size, MS chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (conbextra as manufactured by M/s Fosroc Chemicals India Ltd. or approved equivalent) of high early strength. Blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-Charge. Rate of item of steel reinforcement is inclusive of cost of such cover blocks.

3.0. TESTING OF MATERIAL: -

- 3.1 Samples of materials required for testing shall be provided free of charge by the contractor. The cost of tests shall be borne by the contractor / department in the manner indicated below: -

- a) By the contractor, if the results show that the material does not conform to relevant specifications.
- b) By the department, if the results show that the material conforms to relevant specifications.

All other expenditure required to be incurred for taking samples; conveyance, packing etc. shall be borne by the contractor himself.

- c) All the test in field lab setup at construction site shall be carried out by the Engineering Staff deployed by the contractor which shall be 100% witnessed by TGE/GE. At least 10% of the tests are to be witnessed by the Manager/GM.
- d) All the entries in the registers will be made by the designated Engineering staff of the contractor and same should be regularly reviewed by TGE/GE/ Manager/GM.
- e) Contractor shall be responsible for safe custody of all the test/material registers.

f) Submission of copy of all test registers, materials at site Register and hindrance register along with each alternate Running Account Bill and Final Bill shall be mandatory. These registers should be duly checked by TGE/GE/ Manager/GM & receipts of registers should also be acknowledged by Accounts Officer by signing the copies and register to confirm receipt in division office.

g) Extensive testing of the materials used for construction is a pre-requisite for attaining high quality of the work. This shall also require specialized tests, physical, chemical, ultrasonic, x-ray and various other types of tests which cannot possibly be carried out in a site laboratory. These tests also require specialized personal who regularly deal in such testing. Therefore the need arises for carrying out the tests in outside laboratories.

3.2 These laboratories may be in the Govt. sector, Semi Govt. or Private sector. The outside private laboratories shall be short listed before handed by EE and approval obtained from SE. In case of laboratories in the private sector, the past record and reputation of the laboratory must invariably be given due consideration. The infrastructure in these laboratories can also be inspected before they are short listed.

3.3 However, testing of material in any Govt., Lab / Public Undertaking Lab / IIT or NIT Lab / Govt. Engineering College may be allowed by General Manager without prior approval of Superintending Engineer or higher officers provided these labs have all necessary facility to carry out the required tests.

3.5 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately.

3.6 The list of Field equipment referred above are to be arranged and maintained by the contractor at the site of work. In case the equipment required for any test is not available at site, the department shall get the test conducted from the third party. However in that event, besides providing free materials of sample, the cost of taking of sample, packing, transportation, testing charges etc. shall be borne by the contractor irrespective of the results.

3.7 Maintenance of Register of Tests -

(i) All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge in the same manner as being issued to CPWD field staff.

(ii) All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by TGE/GE and out of this at least 50% samples shall be taken in presence of E in charge. All the necessary assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site.

(iii) All the tests to be conducted at Construction Site shall be carried out by the Engineering Staff deployed by the contractor which shall be 100% witnessed by TGE/GE. At least 10% of the tests are to be witnessed by the General Manager. For outstations the percentage of tests to be witnessed by TGE/GE/Manager/GM are to be decided by NIT Approving Authority and should form part of QA Plan.

(iv) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by TGE/GE/Manager/GM . Contractor shall be responsible for safe custody of all the test & Material registers.

3.8 Maintenance of Material at Site (MAS) Register -

(i) 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.

(ii) Each of the entry of receipt of material at site shall be 100% test checked by TGE/GE.

(iii) Each MAS Register shall be checked by TGE/GE at least twice a week .

- (iv) Cement Register shall be reviewed by GM at least one in a month. For outstations the frequency of checking the Registers by TGE/GE is to be decided by NIT Approving Authority and should form part of QA plan

4.0 **SECURITY**

4.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have notice that the Indian Official Secrets Act 1923 applies to them & will continue so to apply even after the execution of such works under the contract.

4.2 The contract is confidential and must be strictly confined to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers as necessary) and to the purpose of the contract.

4.3 All documents, copies thereof & extracts there from furnished to the contractor shall be returned to the Engineer-in-Charge on the completion of the work / works or the earlier determination of the contract.

5.0 **LABOUR AND SECURITY**

5.1 Contractor should provide his plan for labour huts as per his requirement and get it approved from the Engineer-in-Charge. The contractor will be provided space for labour huts etc. inside the campus but the space requirement and location, as assessed by Engineer-in-Charge shall be final and binding.

5.2 Contractor has to follow the security requirement of the campus and obtain necessary entry passes for the labour and vehicles and follow security checks at entry / exit gates, restriction on movement of vehicle, restricted timings of working etc. The Department however shall assist the contractor in obtaining such passes for movement of vehicles and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour including restrictions in working hours, if there is any.

5.3 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. The contractor shall, on demand submit list of his agents, employees and work people concerned & shall satisfy as to the bonafides of such people.

5.4 The contractor & his work people shall observe all relevant rules regarding security promulgated in which work is to be carried out by the Controlling Administrative Authority of the campus/area (hereinafter referred to as "Administrator").

5.5 The contractor, his representative, workman shall be allowed to enter through specified gates & timing as laid down by the controlling authority. They shall be issued an identity card or an individual pass in accordance with the standing rules & regulations & they should possess the same while working. The contractor shall be responsible for the conduct & actions of his workman, agents / representatives.

5.6 Normally contractor shall be allowed to carryout work between 7 AM to 6 PM. However, he may also be allowed to carryout the work beyond 6 PM & upto 7 AM if the site conditions / circumstances so demand with prior written permission from the "Administrator". However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.

5.7 Normally contractor's material / vehicles etc shall be allowed to move in / go-out between 7 AM to 7 PM only & no movement of material / vehicles out of site of work shall be allowed during night hours unless specific permission is obtained from the "Administrator".

- 5.8 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the department.
- 6.0 Deleted
- 6.1 Deleted
- 6.2 Deleted
- 7.0 PROGRAM CHART: -
- 7.1 The Contractor shall prepare an integrated program chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period or earlier and submit the same for approval of the Engineer-in-Charge within 15 days of the issue of letter of acceptance for the contract.
- 7.2 The work has to be completed in stages as indicated in the Milestones under Schedule 'F' and the program should be prepared in such a manner to achieve these Milestones as indicated therein or earlier.
- 7.3 The program chart should include the following: -
- a) Descriptive note explaining sequence of various activities.
 - b) Network (PERT / CPM / BAR CHART) which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
 - c) Program for procurement of materials by the contractor.
 - d) Program of procurement of machinery / equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
- 7.4 If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.
- 7.5 The submission of revised program or approval by the Engineer-in-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.
- 7.6 Notwithstanding the fact that the contractor will have to pay to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour regulations and the agreement entered upon and/or extra amounts for any other reason.
- 8.0 PROGRESS AND MONITORING OF WORK:
Contractor shall give the Engineer-in-Charge on the 10th day of each month, progress report of the work done during the previous month. Such progress report will include the project progress summary, work progress (planned v/s. actual), PERTchart, mile stone status, financial progress status, manpower deployment status, important materials consumed, materials at site at the beginning of the month, materials consumed during the month and the balance quantities at the end of month and progress of the work stating the

reasons for shortfall, if any including the steps and measures to be taken for making good the shortfall in the succeeding period. Non submission of aforesaid progress report shall make contractor liable for action under breach of contract conditions.

9.0 SAMPLE OF MATERIALS:-

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

9.2 To avoid delay, contractor should submit samples as stated above well in advance so as to give timely orders for procurement. If any material, even though approved by Engineer-in-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

9.3. BIS marked materials except otherwise specified shall also be subjected to quality test besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the contractor shall, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfies the provisions of specifications relevant to the material and / or the work done. BIS marked items (except cement & steel for which separate provisions have been made in para 10.0) required on the work shall be got tested, for only important tests, which govern the quality of the product, as decided by the Engineer-in-Charge. The frequency of such tests (except the mandatory test) shall be 5% of the frequency as specified in BIS. For mandatory test, frequency shall be as specified in the CPWD Specifications.

9.4 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications & BIS, then tests shall be carried out as per decision of Engineer-in-Charge.

10.0 CEMENT & STEEL REINFORCEMENT (IF NOT STIPULATED, TO BE PROCURED BY THE CONTRACTOR).

10.1 Contractor has to produce manufacturers test certificate for each lot of Cement & Steel Reinforcement procured at site.

10.2 CEMENT:-

10.2.1 The contractor shall procure 43 Grade Ordinary Portland Cement confirming to IS: 1812 as required in the work from reputed manufacturers of cement such as ACC, Ultratec, Vikram, from reputed manufacturers of cement such as ACC, Ultratec, Vikram, Shree Cement, Ambuja, JP Cement, Century Cement and JK Cement Or from any other reputed cement manufacturer having a production capacity not less than one million tonnes per annum as approved by the ADG for that sub region, in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot.

10.2.2. 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. The cement for such testing purpose shall be supplied by the contractor free of charge. In case 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. The cost of tests shall be borne by the contractor/department in the manner indicated below:

- i) By the contractor, if the results show that the cement does not conform to relevant BIS Codes.

By the department, if the results show that the cement conforms to relevant BIS Codes.

- 10.2.3 OPC shall be brought at site in bulk supply of approximately 30 tonnes or as decided by the Engineer-in-Charge.
- 10.2.4 OPC bags shall be stored in separate godowns. Separate godowns for tested cement and fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in C.P.W.D Specifications having weather-proof roofs and walls. The size of the cement godown is indicated in the sketches for guidance. The actual size of godown shall be as per site requirements and nothing extra shall be paid for the same. Each godown shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-Charge of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed proforma and signed daily by the contractor or his authorized agent and Engineer-in-Charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorized representative which shall be duly signed by the authorized representative of the Engineer-in-Charge before issue to the work on day to day basis.
- The capacity of each cement go-down shall be 300 bags of cement or more as decided by the Engineer-in-Charge and shall be constructed by the contractor at site of work and at the site of batching plant for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement go-downs. The contractor shall facilitate the inspection of the cement go-downs by the Engineer-in-Charge at any time.
- 10.2.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in 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 the conditions laid therein.
- 10.2.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 42), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-Charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor. For non-scheduled items, the decision of the Superintending Engineer regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.
- 10.2.7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.
- 10.2.8 In case the contractor brings surplus quantity of cement the same shall be removed from the site after completion of work by the contractor at his own cost after approval of the

Engineer-in-Charge.

- 10.2.8 Cement, which is not used within 90 days from its date of manufacture, shall be retested at approved laboratory. Until the results of such tests are found satisfactory, it shall not be used on the work.

10.3 STEEL REINFORCEMENT: -

- 10.3.1 The contractor shall procure Thermo Mechanical Treated (TMT) Steel Reinforcement bars of Fe 500D from Primary producers such as SAIL, Tata Steel Ltd., RINL, Jindal

Steel and Power Ltd. & JSW Steel Ltd. or any other producer as approved by the CPWD who are using iron ore as the basic raw material / input and having Crude Steel Capacity of 2.00 million tonnes per annum and above.

- a) The grade of the steel shall be Fe 500 D as per BIS 1786-2008.
- b) The TMT bars procured shall conform to manufacture's specifications.
- c) The TMT bars producers shall conform to the specifications as laid by Tempcore, Thermax, Evcon Turbo & Turbo Quench as the case may be.
- d) The specifications of TMT bars procured shall meet the following provisions of IS 1786:

2008 pertaining to Fe500D grade of steel:

<u>Mechanical Properties</u>	
Parameter	Minimum Value
Yield Strength	500 N/ sq.mm.
Tensile Strength, Min	10 percent more than the actual 0.2 percent proof stress/ yield stress but not less than 500 N/ sq.mm.
Elongation Percentage, Min. on gauge length 5.65 sectional area of the test piece	16.0
<u>Chemical Properties</u>	
<u>Chemical Constituents</u>	<u>Maximum % as per BIS 1786: 2008 for Fe 500D grade of steel</u>
Carbon	0.30
Sulphur	0.055
Phosphours	0.055
Sulphur + Phosphorus	0.105

- 10.3.2 The contractor shall have to obtain and furnish test certificates to Engineer –in- Charge in respect of all the supplies brought by him to the site of work.
- 10.3.3 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, as defined under para 10.3.1 (a) above, 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:-
- 10.3.4 The steel reinforcement shall be brought in bulk supply as decided by the Engineer-in-Charge along with manufacturer test certificate for each lot.

- 10.3.5 The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion and nothing extra shall be paid on these accounts. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 10.3.6 Unless OTHERWISE specified elsewhere in the contract document, the testing (nominal mass, tensile strength, bend test, rebend test etc.) shall be done as per frequency of samples not less than as given below:

SIZE OF BAR	FOR CONSIGNMENT BELOW 100 TONNES	FOR CONSIGNMENT OVER 100 TONNES
Under 10 mm dia	One sample for each 25 tonnes or part thereof.	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia	One sample for each 35 tonnes or part thereof.	One sample for each 45 tonnes or part thereof
Over 16 mm dia	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

Tolerances on Nominal Mass

Nominal size in mm	Tolerance on Nominal Mass Percent		
	Batch	Individual sample +	Individual sample for coil.
(a). Upto and including 10	<u>+7</u>	-8	<u>+8</u>
(b). Over 10 upto and Including 16	<u>+5</u>	-6	<u>+6</u>
(c). Over 16	<u>+3</u>	-4	<u>+4</u>

+ For individual sample plus tolerance is not specified.
* For coils batch tolerance is not specified.

- 10.3.7 The contractor shall supply free of charge the steel required for testing including transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- 10.3.8 The Actual issue and consumption of steel on work shall be regulated and proper account maintained as provided in clause 10 of the contract. The theoretical consumption of steel 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 consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.
- 10.3.9 Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.
- 10.3.10 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated 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.

- 10.3.11 Reinforcement including authorized spacer bars and lappings shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
- 10.3.12 The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, T or Steel Bars and T.M.T. bars into Standard Weight.
- 10.3.13 Records of actual Sectional weights shall also be kept dia-wise 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 termed as Derived Actual Weight. However for the stipulated issue of steel reinforcement and including 10mm diameter bars, the actual weight of steel issued shall be modified to take into account the variation between the actual and the standard coefficients and the contractors' accounts will be debited by the cost of modified quantity.
- 10.3.14 a) If the Derived Weight as in sub-para (10.3.14) above is less than the Standard Weight as in Sub-para (10.3.13) above then the Derived Actual Weight shall be taken for payment provided, if it is within the tolerances specified in IS 1786-2008, otherwise whole lot will be rejected.
- b) If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para (10.3.13) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the Standard Weight.
- 11.0 ENGAGING SPECIALIZED AGENCIES FOR WORKS:-
- 11.1 The Contractor shall engage specialized agency unless otherwise approved by any Government Department having adequate technical capability and experience of having executed at least one work of similar items of 90% or more magnitude or two works of similar items of aggregate value minimum 90% or three works of similar items of minimum 30% magnitude individually for executing the following items of the work and/Or any other items of work where specialized firm is required to be engaged as per contract conditions. For determining the required magnitude, the value of the work executed may be suitably enhanced with the prevailing approved cost index.
- i) Anti Termite treatment work.
 - ii) Factory made Wooden Shutters of all types except Flush Doors.
 - iii) Water proofing treatment work of all types.
 - iv) Tubewell installations
 - v) Overhead Tank.
 - vi) Aluminium Work.
- 11.2 The Specialized agency for the work shall be got approved from the Engineer-in-Charge well before actual commencement of the item of work. The contractor shall submit the list of Specialized agencies except for Internal Electrical Installation, proposed to be engaged by him along with necessary performance certificates, within 30 days from the date of issue of acceptance letter to substantiate technical capability and experience of the agency for prior approval of the Engineer-in-Charge.
- 11.3.1 For Internal Electrical Installation work as contained in the Electrical component work, the Electrical Agency to be associated shall be of appropriate class of CPWD. Provisions mentioned under Sr. No. 11.1 above are not applicable for engagement of Electrical Agency. It will be obligatory on the part of main contractor to sign the tender documents for all the components
- 11.3.2 If the main contractor fails to associate agency/agencies for execution of minor

components of work within prescribed time or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of works shall be withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.

11.3.3 Same milestones shall be applicable for all components of work.

11.4 For the specialized item of Polypropylene Pipes the contractor shall engage such vendors as approved by the manufacturer. Provisions mentioned under Sr. No. 11.1 above not applicable for Polypropylene Pipes.

12.0 Deleted

13.0 Defect liability:

13.1 The defect liability period is 365 days from date of issue of completion certificate. The contractor's liability during the defect liability period shall be limited to rectification of defects including replacement as follows which in the opinion of Engineer-in-Charge are not manmade.

Sl. No.	Description	Defect Liability
(i)	Anti termite treatment	(a) Termites found if any till guarantee period to be rectified through post ATT
(ii)	Concrete	(a) Rectification of structural / superficial / non-structural cracks. (b) Rectification of dampness / seepage in roof slab / junctions & sunken portion. (c) Rectification of cracks in beam, shade, column.
(iii)	Brick work	(a) Rectification of cracks in panel wall / portion. (b) Cracks / settlement of dwarf walls. (c) Rectification of efflorescence.
(iv)	Joinery	(a) Replacement of warped joinery. (b) Cracks in panels, rails / styles etc.
(v)	Builders Hardware	(a) Repairs / Replacement of loosened / pre-mature failure of fittings. (b) Tightening / Replacement of sag in mosquito proofing.
(vi)	Steel & Iron work	(a) Rectification / Replacement of defective part of rolling shutter. (b) Redoing of defective portion in fabrication / welding including painting. (c) Steel windows, grills, gates etc. – defects to be rectified.
(vii)	Roof treatment	(a) Rectification of leakage / seepage of roof slab including covering at junction till guarantee period.
(viii)	Plastering	(a) Rectification of structural / superficial cracks if any. (b) Rectification of protruding / peeling off plaster if any. (c) Rectification of efflorescence
(ix)	Flooring	(a) Rectification of sinking portion of plinth protection including saucer drain. (b) Settlement of foundation & floors.
(x)	Plumbing / Sanitary fittings	(a) Making good of leakage through soil / waste pipe joints. (b) Replacement of looking mirror if found wavy. (c) Rectification of leakage of over head tanks. (d) Leakage / seepage of sunken floor, blockage of taps / pipes, non-functioning of cistern.
(xi)	Finishes	(a) Making good of defective / dissimilar patches of painting to match with remaining surfaces.
(xii)	Internal Water Supply	(a) Repairs / Replacement of defective taps / fittings. (b) Repair to leakage of GI water pipe lines including joints. (c) Removal of blockage of GI pipe lines.
(xiii)	Roads	(a) Repair of sinking portion of road & potholes, if any

(xiv)	Sewage	(a) Rectification of slope / system if found defective during use. (b) Rectification of major blockage in Sewer lines. (c) Cracks & settlement of sewage lines.
(xv)	Drains	(a) Repair to Drains. (b) Settlement of Drains
(xvi)	External Water Supply	(a) Repairs to installations & fittings.
(xvii)	General	(a) All manufacturing defects of structures / fixtures / fittings / equipments other than listed above.

1. Existing cement plaster (if any) where any skirting or cladding work is to be executed shall be dismantled before fixing tile/ granite stone to the wall surface to ensure proper bond with base and planarity.
2. Wherever cladding is to be provided on the existing non plastered surface (if any), adequate hacking, wire brushing clearing etc. after removing existing paint, shall be done by the agency so as to ensure proper bond of cladding to the existing surface.
3. Any internal / external damage caused to the building during execution of work shall be made good by the contractor at his own cost to the satisfaction of Engineer –in-charge.
4. Work includes fixing of door, window frames after demolishing / removing existing frames (if any). In all such cases jambs and existing masonry shall be made good including plastering the jamb. The rate quoted by the contractor shall include all such operations.
5. Contractor shall remove from site the rubbish / malba generated during course of execution of work from time to time before exceeding 2 truck loads (say 12 Cum), failing which the contractor shall be liable to pay Rs. 500/- per day which shall be recovered from the payment due to the contractor.
- 6 (a) Deleted
- 6 (b) Deleted
7. All repair / retrofitting items shall be executed first. Detail sequence of work activities to be executed in quarters shall be finalized and got approved by the Engineer-in-charge before starting the work.
8. Wire gauze shall be bent at right angle in the rebate, double folder and fixed tight without any furling with the help of MS / wooden beading. Space between the beading and rebate, where the wire gauze is bent shall be neatly finished with the putty so that end of the wire gauze is not visible.
9. The works of renovation/Upgradation are to be executed mostly in old colonies/ premises, where space availability for erection of temporary sheds for storage of construction materials is a real constraint. As per site feasibility and availability of storage space, Engineer-in-charge may provide some storage space on as-is-where-is basis to the contractor agency exclusively for storage of construction materials required for this work and for storage of dismantled materials retrieved from this work. However, all responsibilities regarding safety and upkeep of materials stored shall lie on the contractor. This storage space shall be used exclusively for this work and contractor shall be responsible to hand it over back to the Engineer-in-charge before completion of work, in its original condition without causing any damage to it in any shape. The contractor shall also be required to pay storage charges @Rs. 10/- per sqft per month, calculated on per day basis for the area of such storage space actually provided to him. In case, no such space is available for making available to the contractor, the contractor shall make his own arrangement, and no claim shall be entertained, whatsoever in this regard. In respect of any type of dispute, and/or damage to the storage space provided, decision of Engineer-in-charge shall be final and binding on the contractor.
10. Size, design and pattern of the floor tiles & wall tiles shall be got approved by the Engineer-in-charge before execution the items.

PARTICULAR SPECIFICATIONS

1.0 EARTH WORK:-

1.1 Anti Termite Treatment: -

- 1.2.1 The work shall be executed by specialized agency to be approved by the Engineer in Charge.
- 1.2.2 The Chemical shall strictly conform to Specifications & shall be as per BIS covered by ISI marking. Chemical has to be of approved quality out of preferred make. 100% material has to be procured of approved make before start of work. The chemical shall be used only after due testing & if found conforming to the Specifications. Proper account has to be kept for day to day use of Chemical.

2.0 RCC WORK (ORDINARY)

- 2.1 The work shall be done in accordance with CPWD Specifications.
- 2.1.2 Water Cement ratio for Ordinary RCC work shall not be more than 0.5. Contractor shall use concrete mixture of proper design having arrangement for measuring water for mixing of concrete.

2.3 FORM WORK

- 2.3.1 The work shall be done in general as per CPWD Specifications.
- 2.3.2 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, marine-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.
- 2.3.3 Nothing extra shall be paid for the centring and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.
- 2.3.4 Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 metres.
- 2.3.5 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 centring, shuttering and casting for which nothing extra shall be paid to the Contractor.

As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm or as required, lower than general floors shuttering should be adjusted accordingly. Nothing extra is payable on this account.

- 2.3.6 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 are 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.

2.4 REINFORCEMENT:-

- 2.4.1 The reinforcement shall be done as per CPWD/Standard Specifications.
- 2.4.2 The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.
- 2.4.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or approved equivalent) of high early strength and same colour as surrounding concrete, Pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, rate of RCC items is inclusive of cost of such cover blocks.

2.5 PRE-CAST RCC WORK

- 2.5.1 The work shall be done in accordance with CPWD Specifications.
- 2.5.2 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks etc. and forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer-in-charge before taking up the work.
- 2.5.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.
- 2.5.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.
- 2.5.5 The compaction of the concrete shall be done by vibrating, table or external vibrator, as approved by Engineer-in-charge. The rate quoted for the item shall include the element for framework and mechanical vibration.
- 2.5.6 Rate for item includes cost of all materials, labour, and all operations involved. Cost of M.S. frames, lugs including their welding, lifting hooks is also included.

3.0 BRICK WORK:-

- 3.1 The brickwork shall be carried out with good quality well common burnt clay machine moulded modular bricks of class designation 12.5 as per CPWD Specifications.
- 3.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
- 3.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.
- 3.4 M.S. bars provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

4.0 STONE / MARBLE WORK :-

4.1 General: - The execution of stones work shall be in general as per CPWD Specifications.

4.2 SAMPLES FOR STONE WORK:-

Samples of each item of stone work either individually or in combination shall be prepared for approval of Engineer-in-charge before commencement of work.

5.0 WOOD WORK:-

5.1 The wood work in general shall be carried out as per CPWD Specifications.

5.2 The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.

5.3 Glazing for toilets shall be of translucent type.

5.4 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.

5.5 Timber shall be of specified species, good quality and well seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.

5.6 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coaltar.

5.7 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be so accepted as kiln seasoned and/or chemically treated.

5.8 Transparent sheet glass conforming to IS: 2835 – 1977 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 sqm	4.0 mm
(b) For glazing area more than 0.50 sqm	5.5 mm

5.9 Factory made panelled / wire gauge door shutters

5.10 The work shall be executed through specialized agencies to be approved by the Engineer in Charge.

5.11 The shutters should be fabricated in factories & fabrication should conform to CPWD Specifications Para 9.6.6 & IS 1003 Part-I.

5.12 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however be accepted only if these meet the specified test.

- 5.13 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work with in 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.
- 5.14 The shutters should be brought at site without primer / painting.
- 5.15 Inspection of shutters shall be carried out for dimensions & tolerances, size & type general construction & workmanship, finish & glazing at the following frequency:

Lot Size	Sample Size.	Permissible number of defectiveness.
Upto 25	2	0
26 to 50	5	0
51 to 100	8	0
101 to 150	13	1
151 to 300	20	2
301 to 500	32	3
501 to 1000	50	5
1001 & above	80	7

Criteria for conformity

Any sample shutter failing in any one or more of the requirements inspected for as above shall be considered as defective. A lot shall be considered as having satisfied the requirements of the standard if the number of defective shutters in the sample does not exceed the corresponding permissible number of defectiveness given above.

- 5.16 Testing – The shutters shall be tested for species, seasoning & treatment, defects in the timber, panel material, construction & workmanship in the approved Govt. Laboratory at the following frequency:

Lot Size	Sample Size
Upto 50	1
51 to 100	2
101 to 150	3
301 to 500	4
500 to 1000	6
1001 & above in multiple of 1000	10

If shutters are found defective in any one of the criterion, double the shutter shall be tested & if found permissible, can be accepted. If shutter is found defective in more than one criterion, the whole lot shall be rejected.

6.0 STEEL WORK:-

- 6.1 The work shall be carried out as per CPWD Specifications.

- 6.2 Pressed Steel Frame / T Iron Frames: - The work shall be done as per CPWD Specifications. The frames shall be fabricated in approved workshops. The angle and flat iron frames for cupboard shall also be fabricated from the approved workshop.
- 6.3 Steel windows / ventilators: The work shall be done strictly as per CPWD Specifications. Flash butt-welded steel windows / ventilators only shall be provided and shall be procured from the approved manufacturers. The corners should be welded to form a solid fused welded joint conforming to the requirement given below.
- a) Weld shall be made all along the place of meeting the member.
 - b) Weld should be properly grounded.
 - c) Complete cross section of the corner shall form a solid joint with no cavities, free from cracks, under cutting, overlaps, gross porosity and entrapped slag.\

All sub dividing and glazing bars shall be tenoned & riveted into the frames i.e. all centre mullion section F4B and glazing section T2, T6 shall not be directly welded to the frames. For this a slot has to be cut in the frames, the F4B / T2 / T6 section inserted into it & head be hydraulically tenoned & riveted by Tennon Rivetting Machine.

The thickness of projecting type hinges shall not be less than 3.15 mm. For fixing of hinges to outer frame, slot shall be cut, hinges inserted & welded at the back. For non projected type hinges if allowed, the wall thickness shall not be less than 3 mm & total width not less than 40 mm For fixing, the slot shall be cut in the fixed frames, hinge flap inserted & welded from the back.

The fixing lug shall be as per IS 1038 with adjustable slot & fixed to window frames by screws & nuts.

The fixing of unit shall be done as per IS 1081.

- 6.4 M.S. Sheet Door – M.S Sheet shall be in one piece i.e. no joint in M.S. Sheet shall be permitted.

7.0 FLOORING:-

- 7.1 All work in general shall be carried out as per CPWD Specifications.
- 7.2 Whenever flooring is to be done in patterns of tiles and stones, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring. Nothing extra shall be payable on this account.
- 7.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if any, shall be accounted for any extra payment.
- 7.4 Samples of flooring stones (Kota/ Marble/ Granite etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.
- 7.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location.
- 7.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided which shall not be less than 900mm long except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase shall not be less than 1500mm long except to adjust the closing pieces. Nothing extra shall be paid on these accounts

7.7 PVC & Wooden Flooring

The PVC & wooden flooring (if required) shall be procured from the approved manufacturer and work shall be carried out as per approved drawings and direction of Engineer-in-charge.

7.8 Ceramic/ Vitrified Tiles Flooring

The tiles shall be procured from the approved manufacture of the approved shade & colour.

The tile shall be conforming to IS-13755, IS-13753 and IS-15622 for floor and wall tiles respectively.

Size and sample of tiles in respect of each type of quarters shall be approved by Engineer-in-charge for kitchen and toilet prior to execution of work.

Tiles for flooring shall be 300 mm x 300 mm (minimum size) and for dado 300mmx450mm (minimum size) as approved by the Engineer-in-charge.

Test shall be conducted to satisfy the quality of material as per CPWD Specifications

7.9 Glass Mosaic Tile Flooring shall be with approved random colour mix design tiles and work shall be carried out as per direction of Engineer-in-charge.

7.10 The rate of items of flooring is inclusive of providing sunken flooring in bathrooms, kitchen etc. and nothing extra on this account is admissible. The proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard, etc. as per the directions of Engineer-in-charge.

8.0 WATER PROOFING FOR SUNKEN FLOORS:-

8.1 The work shall be got executed from the specialized agency as approved by the Engineer in Charge.

8.2 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.

8.3 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.

8.4 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes

/ spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.

8.5 Deleted

9.0. FINISHING:-

9.1 The work shall be done in accordance with CPWD Specifications.

9.2 All painting material of approved brand and manufacturer shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for at least 30 days of work. The material shall be kept under the joint custody of contractor and

representative of the Engineer-in-charge. The empty containers shall not be removed from the site till the completion of the work without permission of the Engineer-in-charge.

10.0 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE:-

10.1 The contractor shall submit schematic drawing of water supply and sanitary installation showing details of layout, including internal water supply and drainage details, showing the detail of water supply lines including fittings diameter wise and fixtures connecting to soil waste through traps and connection of W.C. to main shaft pipe for drainage including its ventilation system for approval of Engineer-in-Charge.

10.2 For the work of water supply and sanitary installations, the contractor shall engage the approved licensed plumbers and submit the name of proposed plumbing agencies with their credentials for approval of the Engineer-in-Charge.

10.3 The work in general shall be carried out as per CPWD Specifications.

10.4 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc.

wherever required and making good the same for which nothing extra shall be paid.

10.5 The Centrifugally spun cast iron pipe IS: 3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall be paid for on this account.

10.6 The pig lead to be used in the jointing should be as per CPWD specifications.

10.6(a) The Centrifugally spun cast iron pipe IS: 3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall be paid for on this account.

10.6.(b) Nothing extra for providing and fixing CP brass caps/ extension pieces wherever required for CP brass fittings shall be paid beyond the rates payable for corresponding CP brass fittings.

10.7 The pig lead to be used in jointing should be as per C.P.W.D. Specifications.

10.8 Nothing extra for providing & fixing CP Brass caps /extension pieces wherever required for CP Brass fittings shall be paid beyond the rates payable for corresponding CP Brass fittings

10.9.1 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a Guarantee Bond as per Proforma at Page-68. 5% (Five percent) of the cost of these items would be retained as security deposit and the amount so deducted would be released after two years from the date of completion of the entire work under the agreement, if the performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount is produced and deposited with the department.

11.0 Aluminum Work

Aluminum work under SH : “aluminum work” of tender document shall be got executed from specialized agency. The specialized agency for the aluminum work shall be got approved from the Engineer - in - Charge, well before actual commencement of the item of work. Necessary performance certificates in respect of agencies proposed to be engaged shall be submitted within 30 days from the date of issue of acceptance letter to substantiate technical capability and experience of the agency for prior approval of the Chief Engineer.

Specifications for Aluminum Door, Window, Ventilator:

11.1 : Extent and Intent :

The work shall be carried out through an approved specialist contractor who shall furnish all materials, labour, accessories equipment tool & plant, incidental. Required for providing and installing anodized aluminum door, windows, claddings, louvers and other items as called for on the drawings. The drawings and specifications cover the major requirement only. The supplying of additional fastenings, accessory features and mentioned specifically herein but which are necessary to make a complete installation shall be a part of the contract.

11.2 : General :

Aluminum doors, windows etc. shall be of sizes, section detail as shown on the drawings. The details shown on the drawings indicate generally the sizes of the components parts and general standards. These may be varied slightly to suit the standards adopted by the manufacture. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and installation drawings for approval of Engineer-in-Charge and no work shall be performed until the approval of these drawings is obtained.

11.3 : Toilet Drawing :

The contractor shall submit the drawings of doors, windows louvers cladding and other aluminum work, based on architectural drawings to Engineer-in-charge for his approval. The drawings shall show full size sections of door, window etc. thickness of metal (i.e. wall thickness) details of construction, sub frame / rough ground profile anchoring details, hardware as well as connection of windows doors, and other metal work to adjacent work. Samples of all joints and methods of fastening and joining shall be submitted to the Engineer-in-Charge for approval well in advance of commencing the work.

11.4 : Samples :

Samples of doors, windows, louvers etc. shall be fabricated assembled and submitted to the Engineer-in-Charge for his approval. They shall be of sizes, types etc. as decided by Engineer-in-Charge. All samples shall be provided the cost of the contractor.

11.5 : Sections :

Aluminum doors and windows shall be fabricated from extruded section of profiles as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineer-in-Charge. The aluminum extruded section shall conform to IS designation 63400-WP(HV9WP old designation) with chemical composition and technical properties as per IS : 733 and 1285. The permissible dimensional tolerance of the extruded sections shall be such as not to impair the proper and smooth function / operation and appearance of doors and windows.

11.6 : Fabrications :

Doors, window etc. shall be fabricated to sizes as shown at factory and shall be of section, sizes combinations and details as shown in the Architectural drawings, all doors, windows etc. shall have mechanical joints. The joints shall be designed to withstand a wind load of 150 kgs. per sqm. the design shall also ensure that the maximum deflection of any member shall be accurately machined and fitted to form hairline joints prior to assembly. The joint and accessories such as cleats brackets, etc. shall be of such materials as not to cause any bi-metallic action, the design of the joints and accessories shall be such that the accessories are fully concealed. The fabrication of doors, windows etc. shall be done in suitable sections to facilitate easy transportation, handling and installation. Adequate provision shall be made in the door and windows members for anchoring to support and fixing of hardware and other fixture as approved by the Engineer-in-Charge.

11.7 : Anodizing :

All aluminum sections shall be anodized as per IS : 7088 and to required colour as specified in the item as per IS : 1868 grading, after cutting the members to requisite sizes. Anodizing shall be to the

specified grade with minimum average thickness of 15 microns when measured as per IS : 6012. The anodic coating shall be properly sealed by steams or by boiling in deionized water or cold sealing process as per IS : 1868 / IS : 6057. Polythene tape protection shall be applied on the anodized

sections before they are brought to site. All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation. The sample will be tested in the approved laboratory and cost of samples, cost of testing shall be borne by the contractor.

11.7.1 Powder Coating:

The powder used for powder coating shall be polyester powder made by Berger or Jenson& Nicholson or equivalent. The thickness of powder coating shall not be less than 60 micron at any point measured with micrometer.

11.7.2 Protection of Finish :

All aluminum members shall be wrapped with approved self-adhesive non-staining PVC tapes.

11.7.3 Handling and Stacking :

11.7.3.1 Fabricated materials shall be carted in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carried out with utmost care. On receipt of materials at site, they shall be carefully examined to detect any damaged pieces. Arrangements shall be made for expeditious replacement of damaged pieces / parts. Materials found to be acceptable on inspections shall be repacked in crates and stored safely.

11.7.3.2 In the case of composite windows, and doors the different units are to be assembled first. The assembled composite units should be checked for line, level and plumb before final fixing is done. Unit may be serial numbered and identified as how to be assembled in their final location of situation so warrants.

11.7.3.3 Where aluminum comes into contact with masonry brick work / concrete / plaster or dissimilar metals, it shall be coated with approved insulation lacquer paint or plastic tape to ensure that electro chemical corrosion is avoided. Insulation materials shall be trimmed off to clear flush line on completion.

11.7.3.4 Silicon Sealant :

The peripheral gaps between plastered faces / RCC and aluminum sections shall be sealed both from inside and outside to make the windows watertight. Gaps up to 10mm between the peripheral aluminum member and masonry / RCC / Stone shall be sealed by inserting. Backer Rod manufactured by HT TROPLAST or Supreme Industries and by application of weather silicon / sealant of DOW corning / GE silicon make.

11.7.3.5 The contractor shall be responsible for assembling composite, bedding set straight plumb, level and for their satisfactory operation after fixing is complete.

11.8 : Installation :

11.8.1 Just prior to installation the doors, windows etc. shall be uncrated and stacked on edge on level bearers and supported evenly. The frame shall be fixed into position true to line and level using adequate number of expansion machine bolts, anchor fasteners of approved size and manufacture and in an approved manner. The holes in concrete / masonry members for housing anchor bolts shall be drilled with an electrical drill.

11.8.2 The doors windows assembled as shown on drawings shall be placed in correct final position in this opening and marks made on concrete members at jambs, sills and heads against the holes provided in frames for anchoring. The frame shall then be removed then the opening and laid aside. Neat holes with parattle sides of appropriate size shall then be drilled in the

concrete members with an electric drill at the marking to house the expansion bolts. The expansion bolts shall then be inserted in the holes, struck with a light hammer till the nut is forced into the anchor shall. The frame shall then be placed in final position. In the opening and anchored to the support through cadmium plated machine screws of required sized threaded to expansion bolts. The frame shall be set in the opening by using wooden wedges at supports and be plumbed in position. the wedges shall invariably be placed at meeting points of glazing bars and frames.

11.8.3 Neoprene Gaskets :

The E.P.D.M. gasket of suitable profile as manufactured by HANU INDUSTRIES, ANNAND LESCUYER or equivalent make shall be provided at all required positions to make the glazing airtight. The contractor shall provide and install Neoprene Gaskets of approved size and profile at all locations as shown and as called for to render the doors windows etc. absolutely air tight and weather tight. The contractor shall submit samples of the gaskets for approval and procure after approval only.

11.8.4 Fittings :

The contractor shall cut the floor properly with stone cutting machine to exact size and shape. The spindle of suitable length to accommodate the floor finish shall be used. The contractor shall give the guarantee duly supported by the company for proper functioning of floor springs at least for 10 years. Hinges, stays handles, tower bolts, locks and other fittings shall be of quality and manufacturer as approved by the Engineer – in – Charge.

11.9 : Manufacture's Attendances :

The manufacture immediately proper to the commencement of glazing shall adjust and set all windows and doors and accept responsibility for the satisfactory working of the opening frames.

11.10: Details of Test :

11.10.1 The various tests on aluminum sections shall be conducted in accordance with the relevant IS codes.

11.10.2 The minimum number of each unit of doors / windows shall be selected at random by Engineer-in-Charge as such that all the aluminum section shall be got tested.

S. No.	Details	No. of Tests
1.	Doors, Windows & Ventilators	5% of Nos. manufactured.

11.10.3 The sample of major member of each unit of doors / windows shall be selected at random by Engineer-in-Charge as such that all the aluminum section shall be got tested.

11.10.4 The cost of sample, carriage of the samples shall be borne by the contractor. Testing charges shall be born by department, but if samples fails in testing, complete cost of testing charges shall be born by the contractor.

11.11 : Acceptance Criterion :

The aluminum sections shall conform to the provisions of the relevant items. For payment purpose only actual weight of sections shall be taken into account. If however, the sectional weight of any aluminum section is higher than the permissible variation then the weight payable shall be restricted to the weight of the section including permissible variation.

11.12 : Measurement :

Payment by weight shall be made for aluminum sections including beading only and all fixing angles cleats fittings and fixtures such as handles and hinges etc., shall not be included in the weight to be paid.

11.13 : Rates :

The rates of the items shall include the cost of all materials, labors and inputs required in all the above operations.

12.0 SPECIFICATIONS FOR SOLID POLY VINYL CHLORIDE (PVC) DOOR SHUTTERS:

12.1.0 SCOPE:

12.1.1 This specification lays down requirement regarding types, sizes, material, construction, workmanship, finish, performance evaluation, sampling and testing of solid Poly Vinyl Chloride (PVC) Panelled door shutters for use in residential buildings, non-residential buildings such as offices, schools, hospitals, etc.

12.1.2 This specification does not cover large size door shutters for industrial and special buildings such as workshop, garages, godowns etc.

12.1.3 PVC door shutters shall be used in internal locations only.

12.2.0 REFERENCES:

12.2.1 The Indian Standards and other Standards are necessary adjuncts to this standard. The products bearing BIS certification i.e. ISI Mark with code number shall have precedence over those not bearing ISI Mark.

12.3.0 TERMINOLOGY:

12.3.1 For the purpose of this specification, the definitions given below in addition to those given in IS 707-1976 shall apply:

12.3.1.1

- (i) Blistering: Air or solvent entrapped during moulding.
- (ii) Colour blots: Colour blots occurring on account of uneven distribution of pigment.
- (iii) Crazing: Fine hair cracks on the surface.
- (iv) Defective Impregnation: Imperfect impregnation of PVC resin with other additives.
- (v) Colour Fading: Fading of colour on exposure to sunlight.
- (vi) Impurities: Presence of matter other than those specified.
- (vii) Pin holes: Pores of size less than 1mm appearing on the surface.
- (viii) Small Pores: Pores of size more than 1mm but less than 2mm appearing on the surface.
- (ix) Wrinkling: A slight ridge or furrow on surface.

- (x) Aggregate Defects: Presence of defects such as pin holes, impurities and traces of mending 5 or more in aggregate for defects at localized place.

12.4.0 HANDLING:

12.4.1 Handling and direction of closing of shutters shall be designated in accordance with IS:

4043:1969.

12.5.0 MATERIAL:

12.5.1 Poly Vinyl Chloride Resin (suspension grade) is the basic raw material of PVC compound. PVC resin is mixed with chemicals like calcium searate, hydrocarbon Wax, Titanium dioxide, calcium carbonate Acrylic base etc. Further additives like UV stabilizers, impact modifiers, pigments, epoxy plasticizer, lubricants, acrylic processing aid etc. are also added. The purpose of adding the chemicals and additives is to impart strength, surface finish, colour and resistance to fading by light rays. These chemicals are mixed in the desired proportion and shall be used in the formulation of PVC material and for free and smooth extrusion of PVC cellular sheets.

12.6.0 PROCESS:

12.6.1 MIXING: The PVC material so formulated with the addition of chemicals, fillers & additives shall be mixed dry powder form in a high speed hot mixer at a temperature of 110⁰ C to 125⁰ C. The heated dry blend is then to be cooled at room temperature. However, the temperature has to be determined keeping in view the climatic conditions and the process requirements.

12.6.2 EXTRUSION: The cooled dry blend is off loaded into the hopper of the extruder, and then is fed to the screw & barrel of the extruder, where it is melted and kneaded at varying temperatures upto 205⁰ C by rotating screws. The thick paste of PVC material is then passed through a hot die to make the sheet of required thickness.

12.6.3 POLISHING: The basic shape of the sheet so acquired is then polished with the help of a three-roll calendar. At the same time the sheet is cooled by circulating water in the rolls of the calendar and thereafter on a roller table by atmospheric air.

12.6.4 CUTTING: The final finished product coming out of the haul-off is cut as per the required size.+

12.7.0 RANGE OF PVC PANELLED DOOR SHUTTERS:

12.7.1 For the purpose of this specification, solid panelled door shutter of thickness 30/32mm has been considered to meet the requirements of various users. The different components required for the door shutters are given in table No. 1 in annexure.

12.8.0 CONSTRUCTION/FABRICATION:

12.8.1 GENERAL:

12.8.1.1 The door shutters shall be manufactured under controlled conditions in factories having adequate facilities for working with PVC cellular sheet including moulding, cutting and jointing, fabrication etc.

12.8.1.2 While manufacturing door shutters, only components indicated in Table No. 1 shall be used for the shutter.

12.8.1.3 PVC door shutter shall be made out of the extruded PVC cellular sheets for styles, top rail, middle and bottom rail and panelling as given in Table No. 1

12.8.1.4 All the members of the door shutter shall be straight, smooth and well planned at right angles to each other. Any warp or bow shall not be more than 1.50mm.

12.8.2 FABRICATION OF SHUTTER:

- 12.8.2.1 Steel frame: Mild Steel square tube of specified size shall be cut to required size and welded at the corners to form steel door frames. It should be painted with red oxide anticorrosive paint.
- 12.8.2.2 PVC Styles: Styles made of PVC Cellular sheet shall be cut to required length and width, which shall be then “V” grooved in parallel to the required thickness of the doors. The “V” grooves are heated by hot air under controlled temperature and moulded to form “C” sections.
- 12.8.2.3 PVC Rails: Top Rail, Bottom Rail and Lock Rail are made of PVC Cellular sheets by cutting the sheets to the required size.
- 12.8.2.4 PVC Panel: Panel made of PVC cellular sheet of 5mm thickness shall be cut to required size in length and width.
- 12.8.2.5 The PVC Panel shall be inserted in between the MS Frame, then the PVC Styles and Rails shall be bonded on the length and width sides of frames. The gap between the Panel and the “C” section of styles and rails shall be filled up with PVC beading and bonded. Lock rail at the centre shall be bonded on the either sides of PVC. The gap between the top and bottom surface is filled by PVC sheet strips called gap inserts to completely seal the door.

12.8.3 FIXING OF THE SHUTTER:

- 12.8.3.1 The PVC door shutter as fabricated above should be fixed to the door frame of M.S. T-iron long counter sunk fully threaded parallel shank steel screws. In case the PVC shutter is to be fixed to wooden frame/PVC frame, the screws to be used in the butt hinge shall be No. 10-40mm counter sunk fully threaded parallel shank steel screws. For fixing butt hinges to PVC shutter, use No. 10-40mm long counter sunk fully threaded parallel shank steel screws. All the screws should be screwed in by screwdriver and in no case these shall be hammered.
- 12.8.3.2 Each door shutter shall be fixed to the frame with 4 hinges of required size unless otherwise specified by the purchaser. The top and bottom hinges shall be fixed at location 200mm below top and 200mm above bottom of shutter. The remaining two hinges shall be places at one-third distance between top and bottom hinges.
- 12.8.3.3 For cup board shutters, side hung of height upto 1.20metre, each leaf shall be hung on piano hinges and for shutter of height more than 1.2 metre, each leaf shall be hung on three M.S. butt hinges of required size at quarter points. On shutter side the screws to be used in butt hinges shall be No. 10x25mm long counter sunk fully threaded parallel shank steel screws. On door frame side screws to be used in the butt hinges shall be No. 10-12mm counter sunk fully threaded parallel shank steel screws in case T-iron frame is used. And in case of wooden door frames, screws shall be No. 10-25mm long counter sunk fully threaded parallel shank steel screws.
- 12.8.3.4 All screws shall be counter sunk fully threaded parallel shank steel screws only, unless otherwise specified. All the screws shall be screwed in with screw driver only and in no circumstances screws shall be hammered in.

12.8.4 FITTINGS AND ACCESSORIES:

- 12.8.4.1 Door stoppers aluminum/brass: These shall be fixed to the door shutter as required by the purchaser as per size and shape approved by him. Cleats and blocks of wood should not be used in any circumstances.

Fittings other than hinges like pull bolt lock, mortice lock, latch floor door stoppers etc. confirming to CPWD specification 2019 Vol. I & II shall be provided as per the schedule of fitting decided by the purchaser.

- 12.8.4.2 Mortice lock or latches: Shutter shall be kiosks prepared for taking mortice locks or latches as may be ordered. Kiosks preparing the door with morticed holes for lock fixing shall be done when desired by the purchaser.

12.9.0 DIMENSIONS, SIZES AND TOLERANCES:

TABLE 1 : - Tentative Dimension of door Shutters

S.No	Type of Shutter	Sizes (mm)	Thick ness	PVC Sheet Section Used							
				Styles		Beadin g		Rails		Panel Thick Ness	M.S. Sq. Tube
				T	W	T	W	T	W		
1.	Panel door shutter DS1(A)	730W – 2060 H	30mm	5	50	5	25	5	t=75 l=75 b=75	5	19x19
2.	Panel door shutter DS2(A)	830W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 b=100	5	19x19
3.	Panel door shutter DS3(A)	930W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 b=100	5	19x19
4.	Panel door shutter DS1(B)	700W – 2045 H	30mm	5	50	5	25	5	t=75 l=75 b=75	5	19x19
5.	Panel door shutter DS2(B)	800W – 2045 H	30mm	5	75	5	50	5	t=100 l=100 b=100	5	20x20
6.	Panel door shutter DS3(B)	900W – 2045 H	30mm	5	75	5	50	5	t=100 l=100 b=100	5	19x19

Note:

T = Thickness t = top rail
W = Width l = lock rail
 b = bottom rail

- 12.10.2 PVC foam sheet shall not exceed the tolerances given below:

Sheet thickness (mm)	Tolerance (mm)
1	+ 0.15
2	+ 0.20
3	+ 0.25
4	+ 0.30
5	+ 0.35

6	+ 0.40
8	+ 0.50
10	+ 0.60
13	+ 0.75
19	+ 1.05

Note: - Generally the PVC sheet used for the panel door shutter is of 5 mm thickness.

Tolerance

- (i) On weight of PVC section + 10 percent.
- (ii) On weight of galvanized M.S. square tubes, M.S. rods + 5 percent (M.S. square/rectangular tubes to conform IS: 4923-1986).
- (iii) On width and height of shutter + 3mm.
- (iv) The tolerance in the thickness of door shutter shall be + 1mm. The thickness of door shutter shall be uniform through out with a permissible variation of not more than 0.8mm when measured between any two points.

Sizes and Types of Door Shutters

Sizes and types of door shutters shall generally conform to the modular sizes specified in Table-

2.

TABLE-2 Tentative DIMENSION OF DOOR SHUTTERS

S. No.	Designation	Size: A		Size: B	Height (mm)
		Width (mm)	Height (mm)	Width (mm)	
1	DS 1	730	2060	700	2045
2	DS 2	830	2060	800	2045
3	DS 3	930	2060	900	2045

Note 1 D = Door, S = Single Shutter

Note 2 The designation indicates the size of door opening, the first number referring to width in modules of 10cm and the last number the height in modules of 10cm above finished floor level.

Note 3 Standard sizes of pressed steel and T-iron door frames are covered in CPWD Specification 2019 Vol. I & II.

Note 4 Manufactures may supply non-modular size by mutual agreement, if so specifically ordered by the purchaser.

Note 5(i) Shutters used with frames of T-iron or pressed steel conforming to CPWD Specifications 2019 Vol. I & II.

12.10.3 Shutters used with frames of timber or precast reinforced concrete conforming to IS: 4021-1983 and IS: 6523-1983 respectively shall be of size B.

Sizes of the Cup Board shutters shall be as required by the purchaser.

12.11 WORKMANSHIP AND FINISH

12.11.1 The surface of the shutters shall be free from any visible defects such as small pores, crazing, blistering, wrinkling, impurities, defective impregnation and colour blots.

12.11.2 Panels of the door shutters shall be flat and shall have smooth and level surface.

- 12.11.3 All the four edge of the door shutter shall be square. The shutter shall be free from Twist or Wrap in its plane.
- 12.11.4 The colour of the door shall be as mutually agreed between the purchaser and the manufacturer, which would be selected by the purchaser from the available range of colours being manufactured before placing order.
- 12.11.5 Scattered pin holes duly repaired and finished by applying resin and not noticeable shall be accepted.
- 12.11.6.1 No painting, primer is to be applied on the PVC door shutter.

12.12 TEST

12.12.1 TEST ON SHUTTERS

- 12.12.1.1 The tests as per Table – 3 shall be carried out by the manufacturer on door shutters. The method of carrying out the tests shall be as per IS: 4020-1994. Acceptability criteria shall be as mentioned against each test.

TABLE NO. 3 TEST ON DOOR SHUTTER

S.No.	Test	Acceptable criteria
1.	Dimensions and defects of squareness Test	As per IS: 4020-1994
2.	General Flatness Test	--do--
3.	Local Planeness Test*	--do--
4.	Impact Indentation Test	--do--
5.	Edge loading Test	--do--
6.	Buckling Test	--do--
7.	Misuse Test	--do--
8.	Slamming Test	--do--
9.	Shock Resistance Test	--do--
10.	Screw Holding Power Test	--do--

- * Local planeness test shall be carried out on the rails, styles and panels separately.

12.12.2 Test on Material

- 12.12.2.1 Test as per Table – 4 shall be conducted on PVC sheet cut from the door shutter. The method of carrying out the test shall be as per reference code mentioned against each test. Acceptance Criteria shall be as given against each test.

TABLE – 4 TEST ON PVC MATERIALS

S.No.	Test	Test Method as per	Acceptable Value
1.	Density (at 27° C)	DIN 53479	Not less than 0.50 gm/cc
2.	Tensile strength at yield	DIN 53455	10 Mpa
3.	Elongation at Break	DIN 53455	Not less than 30%
4.	Impact Strength (IZOD) (Charpy unnotched)	DIN 53453	Not less than 15 kg/m ³
5.	Hardness	DIN 53456	Not less than 25 N/mm ²
6.	Compressive strength at 10% strain	ASTMD – 695	Not less than 8.83 kg/ cm ²

7.	Flexural stress	DIN 53452	Not less than 20 Mpa
8.	Thermal Conductivity	DIN 52612	0.059 W/mk
9.	Water absorption after 96 hrs.	DIN 53495	Below 1 %
10.	Fire Rating	BS 476	BI

12.13 LIST OF REFERRED INDIAN & OTHER STANDARDS

IS No.	TITLE
IS: 707-1976	Glossary of terms applicable to timber technology and utilization.
IS: 4020-1994	Door shutters – Methods of tests
IS:4043-1969	Recommendations for symbolic designation of direction closing and faces of doors, windows and shutters
IS: 10428-1983	Glossary of terms applicable to doors.
ISI	Specifications for testing of PVC materials
	3360 (Pt-3/Sec.1) Density
	3360 (Pt-5/Sec.3) Tensile Strength
	3360 (Pt-5/Sec.3) Elongation at break
	3360 (Pt-5/Sec.4) Impact Strength
	3360 (Pt-5/Sec.12) Hardness
	3360 (Pt-5/Sec.8) Compressive Strength
	3360 (Pt-5/Sec.7) Flexural Strength
	3360 (Pt-8/Sec.1) Water Absorption Fire Retardancy

12.14 SAMPLING AND CRITERIA FOR CONFORMITY

12.14.1 Lot in any consignment, all shutters of the same grade and type and manufactured under similar conditions of production shall be grouped together to form a lot.

12.14.2 The number of shutters to be selected at random from a lot shall depend upon its size and shall be in accordance with table (given below). Column 2 & 3 pertain to tests for Dimensions and defects of squareness test, general flatness test and local planeness test.

Column 4 & 5 pertain to all other tests as per Para 11.11.1 & 11.11.2.

TABLE – SAMPLE SIZE AND CRITERIA FOR CONFORMITY				
Lot Size	Sample Size	Permissible Sample size	Permissible No. of Defects	No. of Permissible
1	2	3	4	5
26 to 50	5	0	1	0
51 to 100	8	0	1	0
101 to 150	13	1	2	0
151 to 300	20	2	3	0
301 to 500	32	3	5	0
501 to 1000	50	5	10	1
1001 and above	80	7	15	2

Note: For lot size 25 or less, number of samples to be taken for testing shall be as agreed to between the purchaser and the seller/ manufacturer.

12.15 PVC RIGID PANEL DOOR SHUTTER

12.15.1 SPECIFICATIONS: - Providing and fixing of factory made 30mm thick PVC rigid foam PANEL DOOR SHUTTER made from M S tubular frame of 19 gauge of size 19 x 19mm for styles and 15 x 15mm for top and bottom rails and covered with 5mm thick heat moulded PVC 'C' channel having width of 50mm to form styles and PVC sheet of width 75mm to form lock rail, bottom rail and top rail on either side. The inner panel should be inserted with 5mm thick PVC sheet sealed with solvent cement adhesive to the styles and rails with 5mm x 25mm PVC sheet beading on either side.

12.15.2 WIREMESH : - To make wiremesh door instead of panel insert of 5mm PVC sheet, wiremesh of suitable gauge can be inserted & and sealed to the styles and rails using PVC beading.

12.15.3 LOUVERS : -The door shutters can be provided with louvers for the clear opening of 450x300mm at the bottom including one additional horizontal rail of size 50mm x 30mm and two vertical styles of size 50x30mm to accommodate the 5mm thick, 40mm wide PVC sheet louvers (eight Nos.) along with side 25mmx5mm size PVC sheet lapping with slant slots of 5mm width for fixing the louvers in position with PVC cement solvent adhesive and then providing 10mmx5mm size PVC sheet beading on two vertical sides with self tapping sheet metal screws etc. complete.

Note: Width of styles and rails will vary with the size of door; Recommended size of styles and rails is given in the table.

TABLE OF STYLES AND RAILS

Door width	Styles Size	Rails Size
600mm to 750mm	50mm	75mm
750mm to 900mm	75mm	100mm
900mm and above	100mm	125mm

13.0 SPECIFICATION FOR STONE MASONRY

13.1 The stone shall be sound hard free and decay and weathering, they shall be approved quality. Discolored or distorted stone with boulder skin or earthy or porous matter of stones with round surface shall not be used. The face stone shall be procured from the approved quarry and other stone also should be procured from approved quarry.

13.2 The stone shall be hammer dressed on all head joints. Faces shall be accurately squared and all face joints shall be dressed at right angle. The face of the stone shall be dressed and bushing shall not project more than 40mm.

13.3 MORTAR:- The mortar used for joining shall be as specific.

13.4 LAYING:- All stones shall be thoroughly wetted before use. No more than two stones shall be used in the height of course.

13.5 The wall shall be carried up truly in plumb. All courses shall be laid truly horizontal and all join shall be truly vertical. The stones shall break joints at least half the height of the course. No pinning shall be allowed on the face.

13.6 The depth of each course shall not be less than 13cm. and more than 23 cm. No course shall be of greater depth than any course below the height shall not exceed the breadth of stones of the face. No stone shall tail into the walls less than twice their height.

13.7 The masonry shall be carried up regularly. When the masonry of the part has to be delayed, the work shall be raked back at angle not exceeding 45 degree, toothing shall not be allowed.

13.8 BOND STONES:- Bond or through stone running right through walls shall be provided in each course at 152 cm. intervals. If the wall is more than 60 cm laid from face to back. These stones

- (or lines or stones) shall break joints by overlapping at least 15 cm. header or thought stone shall not be less than 45 cm long for walls upto 152 cm thick and at least 50 cm for thicker walls.
- 13.8.1 In case proper size of bond stone are not available bonds cements concrete 1:3:6(1 cement: 3 sand: 6 hard stone ballast 20mm and down gauge) right through the walls may be provided in each course at 5 feet interval with the special permission of the Engineer-in-charge but nothing extra shall be paid for this substitution.
- 13.9 JOINTS:- Stone shall be laid that all joint are full of mortar joints shall not be more than 20mm thick. No punning shall allowed on the face.
- 13.10 Where plastering or pointing is not required to be done, the joints shall be struck flush and finished at the time of laying.
- 13.11 Quoins shall be from stones at least 45 cm. long laid stretcher and alternatively.
- 13.12 INTERIOR FACE:- The work on the interior face shall be precisely the same as on the other face and backing at no stage shall be leveled up with chips. The hearting or backing shall be carried up simultaneously with facing.
- 13.13 HEARTING:- Hearting shall consist of flat bedded stones carefully laid on their proper beds and solidly bedded in mortar chips and spells of stones being wedged in wherever necessary so as to avoid thick beds on joints or mortar, care being taken that no dry work or hollow space shall be left anywhere in masonry. The percentage of stones chips for filling of interstices between the adjacent stones shall not exceed 10% of the quantity of stone masonry.
- 13.14 Suitable sizes of weep holes shall be left in the Retaining wall at suitable places as per direction of Engineer-in-charge and nothing extra shall be paid for the same.
- 13.15 CURING:- Green work shall be protection from the effects of sun, rain etc. by suitable covering. It shall be kept consequently moist of on all the faces for a period of at least 7 days. The top of masonry of the work shall be left flooded at the end of each work.
- 13.16 RETAINING WALLS IN COURSED RUBBLE DRY MASONRY WITH BANDS OF COURSED RUBBLE MASONRY LAID MORTAR
- The specification of retaining wall in hammer dressed masonry will similar to the specification for coursed rubble masonry in cement except for:-
- 13.16.1 Mortar will be used only in bands as per drawing. Rest masonry will be dry. The space in hearting will be thoroughly packed with sprawls.
- 13.16.2 The back space in hearting will be kept vertical unless otherwise ordered and from face given required better.
- 13.16.3 Courses will be laid perpendicular to front face.
- 13.16.4 The stone used for Retaining walls at face shall be procured from the approved quarry. The rates of stone masonry for the items of retaining walls/ brest walls in dry and cement mortar masonry will be for all heights and depths. Nothing extra shall be payable beyond the quoted rates.

LIST OF FIELD TESTS

- i) Particle size and shape.
- ii) Slump test.
- iii) Bulking of sand.
- iv) Silt content of sand.
- v) Temperature measuring with thermometer with brass protected end 0-200° C.

FIELD TESTING EQUIPMENT AND INSTRUMENTS

3. Testing Equipment at Field Laboratories

- ii) Balances
 - a) 7kg to 10 kg. Capacity, Semi-self indicating type-Accuracy 10 gm
 - b) 500 gm. Capacity, Semi-self indicating type Accuracy 1 gm
 - c) Pan Balance – 5 Kg. Capacity, accuracy 10 gm.
- iii) Sieves: as per IS 460-1962.
 - a) I.S. Sieves – 450 mm internal dia of sizes 100 mm, 80 mm, 63 mm, 50mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75 mm complete with lid and pan.
 - b) IS Sieves – 200 mm internal dia(brass frame) consisting of 2.36 mm, 1.18 mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.
- iv) Equipment for slump test – Slump Cone, Steel Plate, tamping rod, steel scale, scoop.
- v) Graduated measuring cylinders 200 ml capacity
- vi) Enamel trays (for efflorescence test for bricks and other tests)
 - a. 300 mm X 250 mm X 40 mm
 - b. Circular plates of 250 mm dia
 - c. 600 mm X 450 mm X 500 mm
 - d. 450 mm X 300 mm X 40 mm.

B. Field Testing Instruments

- i) Steel tapes – 3 m.
- ii) Vernier Calipers.
- iii) Micrometer Screw 25 mm gauge.
- iv) A good quality plumb bob.
- v) Spirit level minimum 30 cms long with 3 bubbles for horizontal vertical.
- vi) Wire gauge (circular type) disc.
- vii) Foot rule.
- viii) Long nylon thread.
- ix) Magnifying glass.
- x) Screw driver 30 cms long.
- xi) Ball pin hammer, 100 gms.
- xii) Plastic bags for taking samples.

C. T&P Required

Sr. no.	Detail of T&P	
1	Concrete mixer with hopper	(Full 1 No. bag)
2	Steel props	-----

3	Steel Shuttering	10 Sqm.
4	Needle Vibrator	1 No.
5	Floor grinding machine	1 No.
6	Welding machine	1 No.
7	Water pump	1 No.
8	Steel scaffolding	40 Sqm.

LIST OF ACCETABLE/APPROVED MAKES FOR CIVIL WORKS

S. No	Material	Approved Make
1	(i) 43 Grade Ordinary Portland Cement	ACC, Ultratech, Vikram, Shree Cement, Ambuja, Jaypee Cement, Century Cement, J.K.Cement.
2	(ii) White Cement	Birla White , J. K.White
2	Reinforcement Steel (TMT-Fe500)	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd (RINL), Jindal Steel & Power Ltd. and JSW Steel Ltd.
3	Water Proofing Compounds, Plasticizer, Super Plasticizer, Grouts, Polymers, Polyexpanse,	Weber, Fosroc, Pidilite, CICO, Sika, Huntsman (CibaGeigy), Ferrous Crete
4	Tubular Truss / Structural Steel in Truss	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd (RINL), Jindal Steel & Power Ltd. and JSW Steel Ltd.
5	Poly carbonate Sheet	GE Plastic, LEXAN
6	Decking steel sheet	Ezydeck of TATA / Lloyd Superdeck
7	Admixtures	Fosroc, MBT, Sika, CICO, Asian
8	Particle Board	Kitply, Action TESA, Greenlam, Merino, Century.
9	Laminated Particle Board/ Laminates	Kitply, Action TESA, Greenlam, Century Ply, Merino, Sunmic, Archid ply
10	Flush door shutters/Factory made paneled door shutters	Duro, Kutty, Century, Green, Jayna, Merino
11	Fire Rated Doors	Signum Fire Protection, Kutty Doors, Shakti Metdoor, NAVAIR, ROMAT, Synergy Thrislington, Promat International, Jain Door Pvt. Ltd.
12	False Ceiling System along with supporting grid and metallic tiles	Armstrong, Hunter Douglas, Saint Gobain, Aura(ASIPL)
13	Plywood/Veneer	Green, Century, Merino, Kitply, Duro, Archid ply, Vivgo
14	Melamine Polish	Asian Paints Melamine Gold, Wudfin of Pidilite, Timbertone of ICI Dulux.
15	Floor Spring	HARDWYN, Godrej, Dorma, Dorset
16	Anodised Aluminium Hardware	Kilong, Alualpha, Sigma, Classic, Hardima

(HeavyDuty)

17	Clear/Float/Frosted Glass	Saint Gobain, AIS, Pilkington
18	Stainless Steel Railing, Accessories etc.	JINDAL, Dorma, GEZE
19	Hermitically sealed performance glass & Toughened Glass	Saint Gobain, MODI, ASAHI
20	Fire rated vision Panels	Pilkington, SCHOTT, FERILITE, Saint Gobain.
21	Skylight –Thermoform	Mccooy Architectural System, Vergola, Abucob
22	G.I. Steel doorframe	Kutty Doors, Shakti Metdoor, NAVAIR, ROMAT, Synergy Thrislington.
23	Friction Stay Hinges	Earl-Bihari, Ebco, Rotto, Cotswold, GU, Dorset
24	EPDM Gasket	Hanu, Osaka, Avigiri, Alps, Anand
25	Glass processor for making DGU/Toughning	AIS, Art N Glass (Chandigarh), Kochar Glass Pvt. Ltd. (Bhopal), Kaenal Glass (Bhiwadi), GSE (Noida)
26	Ployster Powder Coating Shades	NEROLAC, BERGER, J&N
27	Silicon based water repellant /Weather Sealant	G.E. Plastics, Dow Corning, BECKER
28	Poly-Sulphide Sealant	Fosroc, Pidilite, Sika
29	Mosaic tiles/ Chequered Tiles	Ultra Tiles, Unitile, NITCO, NTC
30	Ceramic Tiles / Glazed tiles	Morbito, Somany, RAK, Kajaria, Orient bell
31	Vitrified Tiles (Antiskid/Matt/Glazed)	Morbito, Somany, RAK, Kajaria, Orient bell
32	PVC Flooring	Armstrong, Unitex, LG Houses
33	Paver block & Kerb Stone	NITCO, Unitile, NTC, Ultra, Pooja concrete Fabricators.
34	Tile/ Stone Adhesive	Pidilite, Bal Endura, Fosroc, Ferrous Crete, Ultratech
35	Grouting Compound	BalEndura, Pidilite, Fosroc, Ferrous Crete
36	Dash / Anchoring Fasteners	HILTI, Fischer, Bosch, Wurth.
37	Nuts / Bolts & Screws	GKW, Hilti,
38	Wall putty	Birla wall care, JK White
39	Curing compound	Fosroc, Sika, Cico

40	Oil Bound Washable Distemper	AsianPaints(Tractoracrylicdistemper),ICI (Maxilite), Burger
41	Acrylic Distemper	Bison(Berger), Tractor(Asian), Maxilite (ICI)
42	Premium Acrylic Emulsion Paints	ICI(Supersmooth),Nerolac(Beautygold),AsianPaints(Premiumemulsion/professional interioremulSION), Burger
43	Cement Primer	BP White(Berger), Decoprime WT(Asian), White primer (ICI)
44	Steel Primer	ICI, Nerolac, AsianPaints
45	Wood Primer	ICI, Nerolac, AsianPaints (White)
46	Textured Exterior Paint	Asian paints (Apex with honeycomb roller finish) ICI (Weather shield with honeycomb roller finish, Kansai Nerolac(Excel with honeycomb roller finish)
47	Synthetic Enamel Paint	Asian (Apcolite Premium gloss enamel),ICI (Dulux gloss synthetic enamel), Kansai Nerolac (Synthetic enamel)
48	Epoxy Paint	Asian, ICI, Kansai Nerolac,
49	Fire Paint	Akzo Nobel Coatings India Ltd., PROMAT, Jotun, Asian Paints
50	G.I. / M.S. Pipe	Tata, Jindal (Hisar)
51	G.I.Fittings	Unik, AVR,Zoloto, SANT
52	HDPE Pipes	Reliance, JainPipes, ORIPLAST
53	DIPIPES	Electro steel, Jindal, TATADUCTURA
54	DI Fittings	Kartar ,Electro steel
55	CI Fittings	Neel , Kartar ,Sarkar
56	CI Double flanged sluice valve	Kirloskar, Sondhi, Kejriwal, Leader Zoloto
57	Float Valve	L&K, Leader, Zoloto,
58	UPVC pipe and Fittings	Astral, Supreme, Finolex
59	Centrifugally Cast(spun) Iron Pipes & Fittings	NECO, Kapilansh, SKF , BIC
60	Centrifugally Cast (spun)Iron(Class LA) Pipes	Neco, Electro Steel, Kapilansh
61	C.I. Manhole covers, frames & GI	NECO, RAJ Iron Foundary Agra,BIC, SKF

	Gratings	
62	SFRC Manhole covers & gratings	KK, JAIN,PARGATI
63	Gun metal Valves ,globes	Sant, Leader,Zoloto
64	CP Brass Fittings	Jaquar, Kohler, Parryware, Hindware
65	Sanitary Fittings & accessories	Jaquar, Kohler, Parryware, Hindware
66	Water Meter	Prima, Kranti, Leader, Zoloto, Dashmesh
67	Brass stop & Bib Cock	Zoloto,Sant, L&K, Leader,
68	Mirror Glass	Atul, Modi Guard, GoldenFish
69	U-PVC Pipe	Astral, Supreme, Finolex
70	PVC Pipe &Fittings	Supreme, Finolex, Kisan
71	Non Return valve (Check valve) ½” to 1¼”	Zoloto, Sant, Leader
72	Brass Ferrules	Dhawan Sanitary Udyog (PRIMA), Kalsi, Annapurna
73	Insulation for hot water pipes	KAIFLEX , ARMAFLEX,CAREFLEX
74	Insulation for external / exposed hot water pipes	KAIFLEX , ARMAFLEX,CAREFLEX
75	Pipe protection for external water supply pipes	PYPKOTE, ARMAFLEX, AKPOLYKOTE,
76	Toilet Cubicles	Merino Industries Ltd (Titan Series), Green Sturdo, Green Ply Industries Ltd (Green lam Sturdo Classic),Trespa, Dorma
77	Hardware & Door fittings	Dorma, Kich, Ozone, Dorset
78	Door closer	Dorma, Kich, Godrej
79	Stainless Steel Sink (Out of Salem steel)	Neelkanth, Niralli, Jyna
80	European WC	Hindware, Parryware, Kohler, Jaquar
81	Washbasin	Hindware, Parryware,Kohler, Jaquar
82	Urinals	Hindware, Parryware, Jaquar, Kohler
83	CPVC Pipes & Fittings	Finolex, Supreme, Ashirwad, Astra
84	Stone ware pipes	Perfect, Taya

85	Gully Traps	Perfect, Parry
86	RCC Pipes (NP-2)	Lakshmi, Sood & Sood, Jain & Co.
87	Atactic Polypropylene	STP, HTL, Hydro Tech Ltd., Pidilite
88	UPVC Doors & Windows	Fenesta, Aluplast , Prizma Winsol Pvt. Ltd.
89	Extruded Polystyrene Insulation Board	Dowcorning, Supreme, Texas, Analco
90	Heat Resistant Tiles	Swastik, Thermax
91	Gypsum Plaster	Ferrous Crete, Gyproc Saint Gobain, Boral
92	Floor hardener	Ironite, Ferrok, Hardonate
93	Modular Expansion Joint	Herculus, CS, Vexcolt. Devin.
94	PVC Water storage tank	Sintex, Frontline Super, Vectus, Kaveri, Sheetal

Note: - The Engineer In charge reserves the right to add or delete any materials and Brands in the list of approved materials/brands.

INTEGRITY PACT

BETWEEN

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

(NHIDCL) hereinafter referred to as "**The Principal**" (which expression, unless repugnant to the context thereof shall mean and include its legal representatives, heirs and assigns)

AND

.....hereinafter referred to as "**The Bidder/ Contractor**" (which expression, unless repugnant to the context thereof, shall mean and include its legal representatives, heirs and assigns)

Preamble

The Principal intends toward, under laid down organizational procedures, contract(s) for (Name of the contract. **herein after referred to as the 'Project'**). The Principal necessarily requires full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve the goals, the Principal may appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the Integrity Pact by all parties concerned, for all works covered in the Project.

Section1-Commitment so the Principal

- (1) The Principal commit sit self to take all measures necessary to prevent corruption and to observe the following principles:-
 - a. No employee of the Principal, personally or through family members or through any other channel, will in connection with the tender for or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit, which the person is not legally entitled to.
 - b. The Principal will, during the tender process treat all Contractor(s)/Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Contractor (s)/Bidder(s) the same information and will not provide to any Contractor(s)/Bidder(s), confidential/additional information through which the Contractor(s)/Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - c. The Principal will exclude from the process all known prejudiced persons. **The Principal shall** obtain bids from **only** those parties who have been short-listed or pre qualified or through a process of open advertisement/web publishing or any combination thereof.
- (2) If the Principal obtains information on the conduct of any of its employees, Contractor(s) and/or Bidder(s), which is a criminal offence under the IPC/PC Act, or If there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and **subject to its discretion**, can **additionally** initiate disciplinary actions.
- (3) The Principal will enter into agreements with identical conditions with all Contractor(s)/Bidder(s) **for the different Work Packages in the aforesaid Project**
- (4) The Principal will disqualify from the tender process all Contractor(s) /Bidder(s) in the range of Rs50 Crore and above, who donot sign this Pact or violate its provisions.

Section2- Commitments of the Bidder(s)/Contractor(s)

- (1) The Bidder(s)/Contractor(s) commit(s) itself/themselves 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's employees involved in the tender process or the execution of the contract 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 Bidders 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 introduce cartelization in the bidding process.
 - (c) The Bidder(s)/Contractor(s) will not use improperly, for purpose of competition or personal gain, or pass on to others, any information or document provided by the Principal 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 name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is annexed and marked as Annex-"A".
 - (e) The Bidder(s)/Contractor(s) will when submitting 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.
- (2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be a necessary to such offences.

Section 3: Disqualification from tender process and/or exclusion from future contracts.

- (1) If the Bidder(s)/ Contractor(s), before awarding the Projector during execution has committed a transgression by violating Section 2 above or in any other form such as to put his reliability or credibility in question, the Principal, at its sole discretion, is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or terminate the contract, if already awarded, for that reason, without prejudice to any other legal rights or remedies available to the Principal under the relevant clauses of GCC /SCC of the tender/contract.
- (2) If the Contractor(s)/Bidder(s) has committed a transgression through a violation of any of the terms under Section 2 above or in any other form such as to put his reliability or credibility into question, the Principal will also be entitled to exclude such Contractor(s)/Bidder(s) from future tenders/contract award processes. The imposition and duration of the exclusion will be determined by the Principal, keeping in view the verity of the transgression. These verity will be determined by the circumstances of the case, in particular, the number of transgressions and/or the amount of the damage.
- (3) If it is observed after payment off in all bill but before the expiry of validity of Integrity Pact that the contract or has committed a transgression, through a violation of any of the terms under Section 2 above or any other term(s) of this Pact, during the execution of contract, the Principal will be entitled to exclude the contractor from further tender/contract award processes.

- (4) The exclusion will be imposed for a minimum period of six(6) months and a maximum period of three (3)years.
- (5) If the Contractor(s)/Bidder(s) can prove that he has restored/recouped the damage to the Principal caused by him and has installed a suitable corruption prevention system, the Principal may, at its sole discretion, revoke or reduce the exclusion period before the expiry of the period of such exclusion.

Section4: Compensation for Damages

- (1) If the Principal has disqualified the Bidder(s)/Contractor(s) from the tender process prior to the awarding of the Project according to Section 3, the Earnest Money Deposit (BID SECURITY)/ Bid Security furnished, if any, along with the offer, as per terms of the Invitation of Tender, shall also be forfeited. The Bidder(s)/Contractor(s) understands and agrees that this will be in addition to the disqualification and exclusion of the Contractor (s)/Bidder (s)as may be imposed by the Principal, in terms of Section3 above.
- (2) If, at any time after the awarding of the Project, the Principal has terminated the contract according to Section3, or if the Principal is entitled to terminate the contract according to Section3, the Security Deposit/Performance Bank Guarantee furnished by the contractor, if any, as per the terms of the NIT/Contract shall be forfeited without prejudice to any other legal rights and remedies available to the Principal under the relevant clauses of General/Special Conditions of Contract.

The Contractor(s)/Bidder(s) be in addition to the Bidder(s)/Contractor(s), as terms of Section3 above. Understands and agrees that this will disqualification and exclusion of the may be imposed by the Principal.

Section 5: Previous transgression

- (1) The Bidder(s)/Contractor(s) herein declares that it has committed no transgressions in the last 3years with any other Company in any country conforming to the anti corruption approach as m detailed herein or with government/any other Public Sector Enterprise in India that could justify its exclusion from the tender process.
- (2) If at any point of time during the tender process or after the awarding of the Contract, it is found that the Bidder(s)/Contractor(s) has made an incorrect statement on this subject, he can be disqualified from the tender process or if, as the case may be, that the Contract, is already awarded, it will be terminated for such reason and the Bidder(s)/Contractor(s) can be blacklisted in terms of Section 3above.

Section 6: Independent External Monitor/Monitors

- (1) The Principal shall, in case where the Project Value is in excess of Rs50 Crore and above, appoint competent and credible Independent External Monitor(s) with clearance from Central Vigilance Commission. The Monitor shall review independently, the cases referred to it to assess whether and to what extent the parties concerned comply with the obligations under this Integrity Pact.
- (2) Incase of non-compliance of the provisions of the Integrity Pact, the complaint/non-compliance is to be lodged by the aggrieved party with the Nodal Officer only, as shall be appointed by the MD, NHIDCL. The Nodal Officer shall refer the complaint/non-compliance so received by him to the aforesaid Monitor.
- (3) The Monitor will not be subject to any instructions by the representatives of the parties and will perform its functions neutrally and independently. The Monitor shall report to the Managing Director, NHIDCL.
- (4) The Bidder(s)/Contractor(s) accepts that the Monitor shall have the right to access, without restriction, all Project documentation of the Principal including that provided by

the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to its project documentation. The Monitor is under contractual obligation to treat the information and documents of the Bidder (s) /Contractor(s) with confidentiality.

- (5) The Principal will provide to the Monitor, sufficient information about all meetings among the parties related to the Project, provided such meetings could have an impact on the contractual relations between the Principal and the Contractor.
- (6) As soon as the Monitor notes, or believes to note, a violation of this Pact, he will so inform the Principal and request the Principal to discontinue and/or take corrective action, or to take other relevant action (s). The Monitor can in this regard submission - binding recommendations. However, beyond this, the Monitor has no right to them and from the parties that they act in a specific manner and/or refrain from action and/or tolerate action.
- (7) The Monitor will submit a written report to the MD, NHIDCL within 4 to 6 weeks from the date of reference or intimation to it and, should the occasion arise, submit proposals for corrective actions for the violation or the breaches of the provisions of the agreement noticed by the Monitor.
- (8) If the Monitor has reported to the MD, NHIDCL, of a substantiated suspicion of an offence under relevant IPC/PC Act, and the MD, NHIDCL, has not, within the reasonable time taken visible action to proceed against such offence or report edit to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Chief Vigilance Officer, NHIDCL / MD.
- (9) The word 'Monitor' means Independent External Monitor and includes both singular and plural forms.

Section7 Criminal Contractor(s) / charges against violating Bidder(s) /Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder/Contractor or any employee or a representative or an associate of a Bidder/Contractor, which constitutes a criminal offence under the IPC/PC Act, or if the Principal has substantive suspicion in this regard, the Principal will forth within form the same to the Chief Vigilance Officer, NHIDCL/MD.

Section8-Duration of the Integrity Pact

This Pact shall come into force when both parties have legally signed it. The Pact shall expire, in case of the Contractor(s), 3 (three) months after the last payment under the Contract is made and in case of the unsuccessful Bidder(s), 2 (two) months after the contract for the project has been awarded.

If any claims is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by MD of NHIDCL.

The Bidder(s)/Contractor(s), however, understands and agrees that even upon the completion of the Project and/or the last payment under the Contract having been made, if any transgression/violation of the terms of this Pact comes/is brought to the notice of the Principal, it may, subject to its discretion, blacklist and/or exclude such Bidder(s)/Contractor(s) as provided for in Section 3, without prejudice to any other legal right or remedy so available to the Principal.

Section-9. Other provisions

- (1) This Agreement is subject to Indian Law. Place of performance and jurisdiction is the

Registered Office of the Principal, i.e.New Delhi.

- (2) Changes and supplements as well as termination notices need to be made in writing.
- (3) If the Bidder/Contractor is a partnership or a consortium, This Agreement must be signed by all partners or consortium members.
- (4) Should one or several provisions of this Agreement turn out to be invalid, the remainder of this Agreement shall remain valid and binding. In such a case, the parties will strive to come to an Agreement in accordance to their original intentions.
- (5) Wherever he or his as indicated in the above sections ,the same may be read she /she or his/her, as the case may be.

(For & On behalf of the Principal)

(For & On behalf of Bidder/Contractor)

(Office Seal)

(Office Seal)

Place —

Date —

Witness1:

(Name & Address)

Witness2:

(Name & Address)