

State Bank of India



Estate Dept.,
State Bank Global IT Centre,
C.B.D. Belapur, Navi Mumbai.

NOTICE INVITING TENDER

For the work of:

“Proposed Structural Repair, Renovation and Retrofitting Works of C-01 & C-02 Buildings at SBI’s Residential Colony Sector-13, Nerul, Navi Mumbai.”

Technical Bid

RFP No. SBI/GITC/Estate/2023-24/1037

Tender Submitted By:

Name of Vendor : _____
Address of Vendor : _____
GSTN No. of Vendor : _____
Date : _____

The Dy. General Manager (F & OA), Estate Dept., State Bank Global IT Centre, 1st Floor, “C” Wing, Sector 11, C.B.D. Belapur, Navi Mumbai – 400614.	Project Management Consultants: M/s. CREATIVE CONSULTANTS Address: 335, 3rd Floor, Kuber Complex, New Link Road, Opp. Laxmi Industrial Estate, Andheri (west), Mumbai - 400 053. Tell: 022 - 49647088 Contact: 9820935856 Email: creativestructure@rediffmail.com info@ccplindia.org
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INDEX

S. No.	Description	Page No.
1.	Index	2
2.	Notice inviting e-tender	3-7
3.	Information & instructions for Bidders for e-Bidding	08-22
4.	Letter of Transmittal and Bid Security Declaration (ANNEXURE)	23-24
5.	General Conditions of Contract	25-53
6.	Articles of Agreement	54-56
7.	Appendix	57-58
8.	Special Conditions of Contract	59-82
9.	Technical Specification	83-86
10.	Methodology for Repairs	87-110
11.	List of Materials	111-114
12.	Theoretical Cement Consumption Statement (BASE CPWD)	115-123
13.	Proformas/ Tables of Various Tests, Materials, Pact, Guarantees	124-135
14.	Mode of Measurements	136-138
15.	Material test List	139-141
16.	Materials Minimum Specifications Requirement	142-146
17.	Workmanship	147-152
18.	Measurement Form & Measurement Sheet	153
19.	Self-Declaration of Contractor	154

A. NOTICE INVITING TENDER

Percentage Rate e-Tenders are invited by M/s Creative Consultants for & on behalf of State Bank of India, for the work of “Proposed Structural Repair, Renovation and Retrofitting Works of C-01 & C-02 Buildings at SBI’s Residential Colony Sector-13, Nerul, Navi Mumbai,”

From the Bank’s Empaneled contractors under appropriate category and who receive NIT from e-Procurement Technologies Pvt. Ltd. are only entitled to quote for this tender.

RFP No. SBI/GITC/Estate/2023-24/1037

1	Name of work	“Proposed Structural Repair, Renovation and Retrofitting Works of C-01 & C-02 Buildings at SBI’s Residential Colony Sector-13, Nerul, Navi Mumbai.”
2	Time allowed for Completion of Work	06 Calendar Months including Monsoon, from the 7th day of the date of award of work.
3	Earnest Money	Rs. 3,38,000/- (Rupees Three Lakhs Thirty Eight Thousand Only) by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned in para 4.6, of Information and Instruction for Bidders. EMD to be deposited on or before the time and last date of submission of the technical bid.
4	Security Deposit (SD)	As per Part B - Point 6 of Information and Instruction to Bidders.
	Additional Security Deposit (ASD)	In case L-1 bidder quotes abnormally low rates (i.e. 7.5% or more, below estimated project cost), the bank may ask such bidder to deposit additional security deposit (ASD) equivalent to difference between 92.5% of estimated cost vis-à-vis L-1 quoted amount for due fulfillment of contract. Such ASD could be in the form of FDR / Bank’s guarantee in the Bank’s name as per format approved by the Bank. On successful completion of work ASD will be returned to the contractor. In case contractor fails to complete the work in time or as per tender specification or leave the job incomplete, the bank will be at liberty to recover the dues from ASD or to forfeit such ASD as the case may be within its sole discretion.
5	Date of availability of tender documents on Service Provider’s website	
	(a) Technical Bid	From 11.09.2023 to 25.09.2023 Available at M/s e-Procurement Technologies Ltd., our Service Provider’s portal https://etender.sbi/

	(b) Price Bid (shall be opened of only of those bidders who qualify as per clause no. 15 of Information & Instructions to Bidders.)	From 11.09.2023 to 25.09.2023 Available at M/s e-Procurement Technologies Ltd., our Service Provider's portal https://etender.sbi/
6	Pre – Bid Meeting (Date, time & Place of Meeting)	On 18.09.2023 at 04.00 PM at the following address: The Dy. General Manager (F & OA), Estate Dept., State Bank Global IT Centre, 1st Floor, "C" Wing, Sector 11, C.B.D. Belapur, Navi Mumbai – 400614.
7	Last date & time for submission of EMD of tender document	Up to 3.00 PM on 25.09.2023 Note: It is sole responsibility of the bidder to ensure submission of their EMD by stipulated date and time at specified SBI Account failing which they will not be allowed to participate in E-Tendering. The proof of the same is to be uploaded at https://etender.sbi/ , mentioning UTR no. / transaction ID.
8	Last date & time for submission of Online Technical Bid & Price Bid	Up to 3.00 PM on 25.09.2023 at Service Provider's portal https://etender.sbi/SBI/
9	Date and Time of opening of Online Technical Bid	3.30 PM on 25.09.2023
10	Date and Time of opening of Online Price Bid	3.30 PM on 25.09.2023 at Service Provider's portal https://etender.sbi/SBI/
11	Defects Liability period	As per Clause No. 1.1.11 (a) of GCC.
12	Liquidated Damages	As per Clause No 8 of GCC.
13	Validity of offer	As per Clause No. Part A- Point 5 of Information and Instruction to Bidders.
14	Value of Interim Certificate	Minimum Rs. 60 Lakhs and Not More than One Bill Per Month. No advance on materials / plant / machinery or mobilization advance shall be paid under any circumstances.
15	Eligible Taxes	A) Income Tax will be deducted at source as per Govt. Guidelines. B) Payment of GST will be made as applicable. The contractor should comply with the following. Contractor should have GST Registration Number. Invoice should specifically/separately disclose the amount of GST levied at applicable rate as per GST provisions/Rules. In case of Correction in the bills after scrutiny, contractor should submit fresh bills for payment. Contractor should timely file his GST return in accordance with GST provisions to enable the bank to claim the credit of GST paid to the contractor.

		The GST Number of State Bank of India are for Maharashtra State – 27AAACS8577K2ZO.
16	Electronic Payment	Electronic payment shall be preferred. All the contractor must furnish details such as: <ol style="list-style-type: none"> 1. Name of their bank 2. Name of their branch 3. Account number 4. Name of the account holder as in the bank account 5. IFSC No of the branch 6. PAN number.
17	Submission of Technical Bid	Contractors shall download the entire Technical Bid to get acquainted with the terms and conditions and shall upload compulsorily the technical bid without fail in the e-tendering portal after putting the digital signature of their authorized signatory on submitted documents/ bid. (Participating through e-tender portal they must have class III digital certificate.) Failing to upload as stated above, the tender will be rejected.
18	Agency for arranging e-tender/online bidding, contact numbers:	You are requested to contact the agency for further guidance for e-tendering.
	Name of Auction Agency	M/s e-Procurement Technologies Limited -Auction Tiger
	Address	B-704, Wall Street - II, Opp. Orient Club, Nr. Gujarat College, Ellis Bridge, Ahmedabad - 380006 Gujarat (India)
	Bidder Support	9904407998, 9510813194, 9510813436, 9879996111, 9265562821 - 079 61200 594 / 598 / 568 /587/538
	Email Address	mp@auctiontiger.net
	Website Address	https://sbi.auctiontiger.net
	Bidder Support:	E-Procurement Technologies Limited, Ahmedabad. <ol style="list-style-type: none"> 1. Komal Dave (9904407998, Komal.d@eptl.in) 2. Salina Motani (079-68136843, salina.motani@eptl.in) 3. Jaymeet Rathod (079-68136829, aymeet.rathod@eptl.in) 4. Kanchan Kumari (079-68136820, kanchan.k@eptl.in) 5. Vinayak Khambe (079-68136835, vinayak.k@eptl.in) 6. Anshul Juneja (079-68136840, anshul.juneja@eptl.in)

		<p>7. Nandan Valera (079-68136843, nandan.v@eptl.in)</p> <p>8. Hemangi Patel (079-68136852, hemangi@eptl.in)</p> <p>9. Nadeem Mansuri (079-68136853, nadeem@eptl.in)</p> <p>10. Deepak Narekar (079-68136863, deepak@eptl.in)</p> <p>11. Sujith Nair (079-68136857, sujith@eptl.in)</p> <p>12. Devang Patel (079-68136859, devang@eptl.in)</p> <p>13. Primary Contact Numbers: - (+91-9081000427, 9904407997)</p> <p>14. Alternate Contact No.: - Mr. Dinesh Pamwani: - 079-68136889, 6354919567, dinesh.p@auctiontiger.net</p> <p>You are requested to contact the agency for further guidance on E tendering.</p>
19	Any additional Information	The rates are inclusive of Required safety precautions, Breaking/Chipping, Removal of debris, materials, labour, wages, fixtures, transportation, installation, wastages, Octroi, levies, all cess, royalties, all taxes (but excluding GST), machinery, temporary works such as scaffolding, covering, cleaning, overheads, profit, statutory expenses, incidental charges and all related expenses to complete the work. GST shall be as applicable on actuals.
20	Required Insurance Policies and Other Covid-19 Protocol for Proposed Repair Work.	To Be Obtained & followed by The Contractor at His Own Cost.
21	Work Warrantee	<p>1) For terrace waterproofing work 10 Years.</p> <p>2) For External Plaster and Painting work 5 Years.</p> <p>Contractor have to give work warranty on Rs. 500/- stamp paper along with notary mentioning that if any type of defect noticed in warranty period on work done area and notified by SBI / Consultants, then immediately contractor have to attend the same free of cost for all above mention work.</p>

22. The contractor has to provide their E-mail id, contact nos. and postal address in the bid documents. Henceforth, all official communication from Bank shall be through E-mail and SMS also. The SBI reserves the right to cancel or postpone or modify the Tender at any stage without assigning any reason.
23. The digitally signed technical bid document, by authorized signatory of contractor, has to be uploaded on specified web portal of e-Procurement Technologies Limited, Ahmedabad. It shall be responsibility of the contractor to arrange and ensure that all pages of Tender Document digitally signed & uploaded.

24. No conditions other than mentioned in the Tender will be considered, and if given bid will be summarily rejected. There should not be any deviation or assumption in terms and conditions as have been stipulated in the tender documents. Prior to the detailed evaluation, the Bank will determine the responsiveness of each Bid to the RFP. For purposes of this clauses, a responsive Bid is one, which conforms to all the terms and conditions of the RFP in toto, without any deviation or assumption.
25. The SBI reserve their rights to accept or reject any or all the Bids/Tenders either in whole or in part without assigning any reason(s) for doing so and no claim / correspondence shall be entertained in this regard.
26. In case the date of opening of tenders is declared as a holiday, the Tender will be opened on the next working day at the same time.
26. Tenders received without EMD shall be summarily rejected and such tenders shall not be allowed for evaluation or to participate in the online price bidding process.
28. For any clarifications regarding E-Tendering procedure, System requirements etc. please contact M/s E-Procurement Technologies Limited, Ahmedabad, whose address is mentioned in the NIT.

Yours Faithfully,

Project Management Consultant

M/s. CREATIVE CONSULTANTS

INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-BIDDING (IIBeB)

PART-A INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-BIDDING:

1. DISCLAIMER:

- 1.1. The information contained in this RFP or information provided subsequently to Bidder(s) whether verbally or in documentary form/email by or on behalf of SBI, is subject to the terms and conditions set out in this RFP.
- 1.2. This RFP is not an offer by State Bank of India, but an invitation to receive responses from the eligible Bidders.
- 1.3. The purpose of this RFP is to provide the Bidder(s) with information to assist preparation of their Bid proposals. This RFP does not claim to contain all the information each Bidder may require. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information contained in this RFP and where necessary obtain independent advices/clarifications. Bank may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP.
- 1.4. The Bank, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form or arising in any way for participation in this bidding process.
- 1.5. The Bank also accepts no liability of any nature whether resulting from negligence or otherwise, howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP.
- 1.6. The Bidder is expected to examine all instructions, forms, terms and specifications in this RFP. Failure to furnish all information required under this RFP or to submit a Bid not substantially responsive to this RFP in all respect will be at the Bidder's risk and may result in rejection of the Bid.
- 1.7. The issue of this RFP does not imply that the Bank is bound to select a Bidder or to award the contract to the Selected Bidder, as the case may be, for the Project and the Bank reserves the right to reject all or any of the Bids or Bidders without assigning any reason whatsoever before issuance of purchase order/LOI and/or its acceptance thereof by the successful Bidder as defined in Award Criteria and Award of Contract in this RFP.

2. COST OF BID DOCUMENT:

The participating Bidders shall bear all the costs (if applicable) associated with or relating to the preparation and submission of their Bids including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstration or presentations which may be required by the Bank or any other costs incurred in connection with or relating to their Bid. The Bank shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder regardless of the conduct or outcome of the bidding process.

3. The Bidder shall also submit PRE-CONTRACT INTEGRITY PACT (if applicable) along with technical Bid as prescribed in Annexure- XVIII duly signed by the Bidder on each page and witnessed by two persons. The Pre-Contract Integrity Pact shall be stamped as applicable in the State where it is executed. Bid submitted without Pre-Contract Integrity Pact, as per the format provided in the RFP, shall not be considered.

4. CLARIFICATION AND AMENDMENTS ON RFP/PRE-BID MEETING:

- 4.1. Bidder requiring any clarification on RFP may notify the Bank in writing strictly as per the format given in **Annexure XIX** at the address/by e-mail within the date/time mentioned in the Notice Inviting Tender (NIT).
- 4.2. A pre-Bid meeting will be held in person or online on the date and time specified in the Notice Inviting Tender (NIT) which may be attended by the authorized representatives of the Bidders interested to respond to this RFP.
- 4.3. The queries received (without identifying source of query) and response of the Bank thereof will be posted on the Bank's website or conveyed to the Bidders.
- 4.4. The Bank reserves the right to amend, rescind or reissue the RFP, at any time prior to the deadline for submission of Bids. The Bank, for any reason, whether, on its own initiative or in response to a clarification requested by a prospective Bidder, may modify the RFP, by amendment which will be made available to the Bidders by way of corrigendum/addendum. The interested parties/Bidders are advised to check the Bank's website regularly till the date of submission of Bid document specified in the Notice Inviting Tender (NIT)/email and ensure that clarifications / amendments issued by the Bank, if any, have been taken into consideration before submitting the Bid. Such amendments/clarifications, if any, issued by the Bank will be binding on the participating Bidders. Bank will not take any responsibility for any such omissions by the Bidder. The Bank, at its own discretion, may extend the deadline for submission of Bids in order to allow prospective Bidders a reasonable time to prepare the Bid, for taking the amendment into account. Nothing in this RFP or any addenda/corrigenda or clarifications issued in connection thereto is intended to relieve Bidders from forming their own opinions and conclusions in respect of the matters addresses in this RFP or any addenda/corrigenda or clarifications issued in connection thereto.
- 4.5. No request for change in commercial/legal terms and conditions, other than what has been mentioned in this RFP or any addenda/corrigenda or clarifications issued in connection thereto, will be entertained and queries in this regard, therefore will not be entertained.
- 4.6. Queries received after the scheduled date and time will not be responded/acted upon.

5. MODIFICATION AND WITHDRAWAL OF BIDS:

- 5.1. The Bidder may modify or withdraw its Bid after the Bid's submission, provided modification, including substitution or withdrawal of the Bids, is received on e-procurement portal, prior to the deadline prescribed for submission of Bids.
- 5.2. No modification in the Bid shall be allowed, after the deadline for submission of Bids.
- 5.3. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified in this RFP. Withdrawal of a Bid during this interval may result in the forfeiture of EMD submitted by the Bidder and other action as per terms of RFP.

6. PERIOD OF BID VALIDITY AND VALIDITY OF PRICE QUOTED IN PRICE BID/ REVERSE AUCTION (RA):

- 6.1. Technical Bid shall remain valid for duration of 180 days from the date of submission of Bid.
- 6.2. Price quoted by the Bidder in Price Bid / Reverse auction shall remain valid for duration of 180 days from the date of submission of Bid
- 6.3. In exceptional circumstances, the Bank may solicit the Bidders' consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder is free to refuse the request. However, in such case, the Bank will not forfeit its EMD. However, any extension of validity of Bids or price will not entitle the Bidder to revise/modify the Bid document.

Once Purchase Order or Letter of Intent is issued by the Bank, the said price will remain fixed for the entire Contract period and shall not be subjected to variation on any account except as explicitly mentioned in this RFP. A Bid submitted with an adjustable price quotation will be treated as non-responsive and will be rejected.

7. BID INTEGRITY:

Willful misrepresentation of any fact within the Bid will lead to the cancellation of the contract without prejudice to other actions that the Bank may take. All the submissions, including any accompanying documents, will become property of the Bank. The Bidders shall be deemed to license, and grant all rights to the Bank, to reproduce the whole or any portion of their Bid document for the purpose of evaluation and to disclose the contents of submission for regulatory and legal requirements.

8. WAIVER OF RIGHTS:

Each Party agrees that any delay or omission on the part of the other Party to exercise any right, power or remedy under this RFP will not automatically operate as a waiver of such right, power or remedy or any other right, power or remedy and no waiver will be effective unless it is in writing and signed by the waiving Party. Further the waiver or the single or partial exercise of any right, power or remedy by either Party hereunder on one occasion will not be construed as a bar to a waiver of any successive or other right, power or remedy on any other occasion.

9. BANK'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS:

The Bank reserves the right to accept or reject any Bid in part or in full or to cancel the bidding process and reject all Bids at any time prior to contract award as specified in Award Criteria and Award of Contract, without incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Bank's action.

10. CODE OF INTEGRITY AND DEBARMENT/BANNING:

- 10.1. The Bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the bidding Process. Notwithstanding anything to the contrary contained herein, the Bank shall reject Bid without being liable in any manner whatsoever to the Bidder if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt/fraudulent/coercive/undesirable or restrictive practices in the bidding Process.
- 10.2. Bidders are obliged under code of integrity to Suo-moto proactively declare any conflicts of interest (pre-existing or as and as soon as these arise at any stage) in RFP process or execution of contract. Failure to do so would amount to violation of this code of integrity.

10.3. Any Bidder needs to declare any previous transgressions of such a code of integrity with any entity in any country during the last three years or of being debarred by any other procuring entity. Failure to do so would amount to violation of this code of integrity.

10.4. For the purposes of this clause, the following terms shall have the meaning hereinafter, respectively assigned to them:

- a) **“Corrupt practice”** means making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution.
- b) **“Fraudulent practice”** means any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a RFP process or to secure a contract or in execution of the contract;
- c) **“Coercive practice”** means harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- d) **“Anti-competitive practice”** means any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of the Competition Act, 2002, between two or more bidders, with or without the knowledge of the Bank, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- e) **“Obstructive practice”** means materially impede the Bank’s or Government agencies investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Bank’s rights of audit or access to information;

11. Debarment/Banning

Empanelment/participation of Bidders and their eligibility to participate in the Bank’s procurements is subject to compliance with code of integrity and performance in contracts as per terms and conditions of contracts. Following grades of debarment from empanelment/participation in the Bank’s procurement process shall be considered against delinquent Vendors/Bidders:

(a) **Holiday Listing (Temporary Debarment - suspension):**

Whenever a Vendor is found lacking in performance, in case of less frequent and less serious misdemeanors, the vendors may be put on a holiday listing (temporary debarment) for a period up to 12 (twelve) months. When a Vendor is on the holiday listing, he is neither invited to bid nor are his bids considered for evaluation during the period of the holiday. The Vendor is, however, not removed from the list of empaneled vendors, if any. Performance issues which may justify holiday listing of the Vendor are:

- Vendors who have not responded to requests for quotation/tenders consecutively three times without furnishing valid reasons, if mandated in the empanelment contract (if applicable);
- Repeated non-performance or performance below specified standards (including after sales services and maintenance services etc.);

- Vendors undergoing process for removal from empanelment/participation in procurement process or banning/debarment may also be put on a holiday listing during such proceedings.

(b) **Debarment from participation including removal from empanelled list**

Debarment of a delinquent Vendor (including their related entities) for a period (one to two years) from the Bank's procurements including removal from empanelment, wherever such Vendor is empaneled, due to severe deficiencies in performance or other serious transgressions. Reasons which may justify debarment and/or removal of the Vendor from the list of empaneled vendors are:

- Without prejudice to the rights of the Bank under Clause 45(i) hereinabove, if a Bidder is found by the Bank to have directly or indirectly or through an agent, engaged or indulged in any corrupt/fraudulent/coercive/undesirable or restrictive practices during the bidding Process, such Bidder shall not be eligible to participate in any EOI/RFP issued by the Bank during a period of 2 (two) years from the date of debarment.
- The Vendor fails to abide by the terms and conditions or to maintain the required technical/operational staff/equipment or there is change in its production/service line affecting its performance adversely, or fails to cooperate or qualify in the review for empanelment;
- If Vendor ceases to exist or ceases to operate in the category of requirements for which it is empaneled;
- Bankruptcy or insolvency on the part of the vendor as declared by a court of law; or
- Banning by Ministry/Department or any other Government agency;
- Other than in situations of force majeure, technically qualified Bidder withdraws from the procurement process or after being declared as successful bidder: (i) withdraws from the process; (ii) fails to enter into a Contract; or (iii) fails to provide performance guarantee or any other document or security required in terms of the RFP documents;
- If the Central Bureau of Investigation/CVC/C&AG or Vigilance Department of the Bank or any other investigating agency recommends such a course in respect of a case under investigation.
- Employs a Government servant or the Bank's Officer within two years of his retirement, who has had business dealings with him in an official capacity before retirement; or
- Any other ground, based on which the Bank considers, that continuation of Contract is not in public interest.
- If there is strong justification for believing that the partners/directors/proprietor/agents of the firm/company have been guilty of violation of the code of integrity or Integrity Pact (wherever applicable), evasion or habitual default in payment of any tax levied by law; etc.

(c) **Banning from Ministry/Country-wide procurements**

For serious transgression of code of integrity, a delinquent Vendor (including their related entities) may be banned/debarred from participation in a procurement process of the Bank including procurement process of any procuring entity of Government of India for a period not exceeding three years commencing from the date of debarment.

PART -B of INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-BIDDING:

1.0. Scope of work

As per Clause No. 1 of NIT.

1.1. Site and its location

“Building No.C-01 & C-02 of SBI Residential Colony located at Sector-13, Nerul, Navi Mumbai”

2.0. Tender documents

2.1. The work has to be carried out strictly according to the conditions stipulated in the tender consisting of the following documents and the most workmen like manner.

- Instructions to Tenderers
- General Conditions of Contract
- Special Conditions of Contract
- Technical Specifications
- Drawings
- Price bid

2.2. The above documents shall be taken as complementary and mutually explanatory of one another but in case of ambiguities or discrepancies, shall take precedence in the order given below:

- a) Price Bid
- b) Technical specifications
- c) Special conditions of contract
- d) General conditions of contract
- e) Instructions to Tenderers

2.3. The tender documents are not transferable.

3.0. Site Visit

3.1. The tenderer must obtain himself on his own responsibility and his own expenses all information and data that may be required for the purpose of filling this tender document and enter into a contract for the satisfactory performance of the work. The tenderer is requested satisfy himself regarding the availability of water, power, transport and communication facilities, the character quality and quantity of the materials, labour, the law and order situation, climatic conditions, local conditions, local authorities' requirement, traffic regulations etc.

3.2. The rates quoted by the Tenderer in the tender will be adequate to complete such work according to the specifications and conditions attached thereto and he has taken into account all conditions and difficulties that may be encountered during its progress and to have quoted labour and material rates, which shall include cost of materials with taxes, octroi, levies, royalties, cess, and other duties, lead, lift, loading and unloading freight for materials, and all other charges including the furnishing of all plant, equipment, tools, scaffolding and other facilities and services necessary or proper for the completion and maintenance of the work, except such as may be otherwise expressly provided in the contract documents for the completion and maintenance of the work to the entire satisfaction of the Structural Consultant/ Bank. The TDS amount on prevailing rate shall be deducted from Contractor's Running Account/ Final bills and paid to the Government. However, GST will be paid extra as actual.

3.3. The successful Tenderer shall make his own arrangements for all materials except as specified in the contract if any.

3.4. The quantities shown if any in the attached schedule are given as a guide and are approximate only and are subject to variation according to the needs of the Employer. The Employer accepts no liability for their accuracy. The Employer does not guarantee work under each item of the schedule.

3.5. The Form of Agreement, Form of Tender, Invitation to Tender, Instruction to Tender, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, Time Schedule and the rates and amounts accepted against the items of the Tender Schedule together with the Tender covering letter, and all correspondence entered into between the Consultant/Bank and the Tenderer prior to the issue of the Letter of Intent and the Letter of Intent awarding the work and acceptance by tenderer shall form the contract.

3.6. The Security Protocol, Systems & Procedures of Security Department of SBI Residential Colony, Sector-13, Nerul, Navi Mumbai has to be meticulously followed & complied with during the currency of contract.

4.0. Earnest Money

4.1. The tenderers are requested to submit the Earnest Money of the amount as per Clause No. 3 of NIT by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned in para 4.6, of Information and Instruction for Bidders

4.2. EMD to be deposited before the last date of submission of the technical bid.

4.3. EMD in any other form other than as specified above will not be accepted. Tender not accompanied by the EMD or Bid Declaration Security Form in accordance with clause 4.1 above shall be rejected.

4.4. No interest will be paid on the EMD.

4.5. EMD of unsuccessful tenderer will be refunded within 30 days of award of Contract.

4.6. EMD of successful tenderer will be retained as a part of security deposit.

4.7. The bid can only be submitted after deposition of EMD amount as per Clause No. 3 of NIT by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned below:

DETAILS OF TENDER FEE AND EMD COLLECTION/REFUND ACCOUNT NUMBER
Account Name Subsidy Inward Remittance Account No. 4897932113433 IFSC SBIN0011343 Branch OAD, GITC, Belapur Mode of Transaction- NEFT only.
Account Name System Suspense Branch Parking A/C Account No. 37608352111 IFSC SBIN0011343 Branch OAD, GITC, Belapur Mode of Transaction- RTGS and intra-bank transfer (SBI to BI only)

EMD to be deposited before the last date of submission of the technical bid and the proof of the same is to be uploaded at <https://etender.sbi/>, mentioning UTR no. / Transaction ID.

5.0. Initial/ Security Deposit

The successful tenderer will have to submit a sum equivalent to 2% of accepted tender value in favour of SBI within a period of 15 days of acceptance of tender. EMD will be returned on receipt of Initial security Deposit.

6.0. Security Deposit / Retention amount:

6.1. Total security deposit shall be 5% of contract value. Out of this 2% of contract value is in the form of Initial Security Deposit (ISD) which includes the EMD. Balance 3% shall be deducted from the running account bill of the work at the rate of 10% of the respective running account bill i.e., deduction from each running bill account will be @10% till Total Security Deposit (TSD) including ISD reaches to 5% of contract value. This Retention

amount shall be released by the SBI in 2 stages, 50% Will be released after issuing of VCC and remaining 50% shall be released after completion of Defect Liability Period i.e. one year from the date of virtual completion of work or one complete monsoon season and after declaration of closure of Project by Consultant and SBI whichever is later and provided no complaint is received or the defects has been rectified by replacing the same satisfactorily.

6.2. Additional Security Deposit

In case L-1 bidder quotes abnormally low rates (i.e. 7.5% or more, below estimated project cost), the bank may ask such bidder to deposit additional security deposit (ASD) equivalent to difference between 92.5% of estimated cost vis-à-vis L-1 quoted amount for due fulfillment of contract. Such ASD could be in the form of FDR / Bank's guarantee in the Bank's name as per format approved by the Bank. On successful completion of work ASD will be returned to the contractor. In case contractor fails to complete the work in time or as per tender specification or leave the job incomplete, the bank will be at liberty to recover the dues from ASD or to forfeit such ASD as the case may be within its sole discretion.

6.3. No interest shall be paid to the amount retained by the Bank as Security Deposit & Additional Security Deposit.

7.0. Signing of contract Documents

The successful tenderer shall be bound to implement the contract by signing an agreement and conditions of contract with the respective Department of SBI within 15 days from the receipt of intimation of acceptance of the tender by the SBI. However, the written acceptance of the tenders by the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered into or not.

8.0. Completion Period

Refer Clause No 27 of GCC.

9.0. Refer Clause No. Part A- Point 5 of Information and Instruction to Bidders

10.0. **Liquidated Damages:** Please refer Clause No 8 of GCC.

11.0. Rate and prices:

11.1. In case of Percentage rate tender

11.1.1 Vendor to quote their offer in terms of „specific percentage numerical value“ (only up to two decimal places) above (+)/below (-)/at par with the total estimated cost published for the project.

11.1.2 After taking into account, the Percentage Rebate/addition offered by all the bidders over the estimated cost, “Net Tender Value” of each bidder shall be evaluated (Mostly by online system itself) and the bidder offering Lowest Tender amount for project shall be decided as “Successful Bidder”.

11.1.3 The “Percentage offer” shall be uniformly applicable to each and every item including all sections/sub sections/subheads of the Tender.

11.1.4 In case, the lowest Tendered Amount (i.e. Estimated cost +/- Percentage (%) Bid quoted) of two or more contractors is same, such lowest contractors will again be asked to submit sealed/online “Revised +/- Percentage (%) offers” on the original Estimated cost of the Tender including all sub sections/sub heads as the case may be, but the revised percentage quoted shall, in no case, be higher than the percentage quoted during their initial offer of the project. The lowest tender shall be decided on the basis of revised offers.

11.1.5 The process of online re-bidding amongst two or more contractors offering same rates shall continue till L-1 bidder is discovered.

11.1.6 In case, any of such contractor(s) (quoted same tender amount during initial bidding or subsequent re-bidding) refuses to submit revised offer, it shall be treated as “withdrawal of tender” by the contractor before acceptance. The earnest money of such contractors shall be forfeited.

11.1.7 In case all the lowest contractors those have quoted same amount, refuse to participate in online revised bidding process for the project, the EMD of such contractors shall be forfeited and the tender shall be re-invited afresh for the project. The contractor(s), whose earnest money

is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.

11.1.8 No condition/ stipulation in Cover-II other than unconditional general rebate shall be Cover-II (Price Bid) will be opened only of those bidders who are successful in Technical Bid (Cover- I) after through scrutiny. The contractor/ vendor can view the Tender opening details through their respective log in Ids on the above-mentioned e-tender portal (Website).

12.0. Pre-bid conference shall be held as per Clause 6 of the NIT. Bidders should send all queries by email dgmit.fnoa@sbi.co.in before pre-bid conference, latest by 11.00 Hrs. up to the previous date of the Pre-Bid conference date. Because of pre-bid conference, certain modifications may be issued to all eligible bidders by the Consultant /SBI by e-mail, if felt necessary by them. If further pre-bid conferences are required for complete and effective interactions, the date and time of same will be communicated at the end of 1st pre-bid meeting or later. All modifications / addendums/ corrigendum issued regarding this bidding process, shall be uploaded on website only and shall not be published in any Newspaper.

13.0. The bid submitted shall become invalid if:

13.1. The bidder does not deposit EMD and Pre contract integrity pact (if applicable) with SBI office on given address

13.2. The bidder does not upload all the documents as listed in "List of Documents to be scanned & uploaded and as well as in hard copy within the period of bid submission".

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

Sr. No.	Documents to be Uploaded Online at M/s e-Procurement Technologies Ltd., our Service Provider' portal https://etender.sbi/	Documents to be submitted in Hard Copy on address as per Clause no. 8 of NIT. (**Refer Note Below)
1	Technical Bid as per Clause No. 18 (1) of NIT.	Nil
2	Corrigendum, if any	Nil
3	Scan copy of duly executed original Declaration form (on the Last page of Technical bid)	Nil
4	Scan copy of Proof of remittance of EMD	Nil
5	Scan copy of Duly executed original LETTER OF TRANSMITTAL	Nil

**** Note:** - Bidder shall submit the original copy of duly executed Documented as mentioned above and seal it in an envelope and mark the envelope as "Technical Bid". The said envelope shall clearly bear the name of the RFP and name and address of the Bidder. In addition, the last date for bid submission should be indicated on the right and corner of the envelope. The hard copies as mentioned above should be submitted within the bid submission date and time for the RFP at the address mentioned in Sr. No 8 of Notice Inviting Tender, failing which Bid will be treated as non-responsive.

14.1. Bidders may please note:

- a) The Bidder should quote for the entire package on a single responsibility basis for the services required under this RFP.
- b) Care should be taken that the Technical Bid shall not contain any price information. Such proposal, if received, will be rejected.
- c) The Bid document shall be complete in accordance with various clauses of the RFP document or any addenda/corrigenda or clarifications issued in connection thereto, duly signed by the authorized representative of the Bidder. Board resolution authorizing representative to Bid and make commitments on behalf of the Bidder is to be attached.
- d) It is mandatory for all the Bidders to have class-III Digital Signature Certificate (DSC) (in the name of person who will sign the Bid) from any of the licensed certifying agency to participate in this RFP. DSC should be in the name of the authorized signatory. It should be in corporate capacity (that is in Bidder capacity).
- e) Bids are liable to be rejected if only one Bid (i.e. either Technical Bid or Indicative Price Bid) is received.
- f) If deemed necessary, the Bank may seek clarifications on any aspect from the Bidder. However, that would not entitle the Bidder to change or cause any change in the substances of the Bid already submitted or the price quoted.
- g) The Bidder may also be asked to give presentation at no extra cost to the Bank for the purpose of clarification of the Bid.
- h) The Bidder must provide specific and factual replies to the points raised in the RFP.
- i) The Bid shall be typed or written and shall be digitally signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract.
- j) All the enclosures (Bid submission) shall be serially numbered.
- k) Bidder(s) should prepare and submit their online Bids well in advance before the prescribed date and time to avoid any delay or problem during the bid submission process. The Bank shall not be held responsible for any sort of delay or the difficulties faced by the Bidder(s) during the submission of online Bids.
- l) Bidder(s) should ensure that the Bid documents submitted should be free from virus and if the documents could not be opened, due to virus or otherwise, during Bid opening, the Bid is liable to be rejected.
- m) The Bank reserves the right to reject Bids not conforming to above.

14.2. Evaluation of Technical Bids:

- a) The bidders who submit above documents without any conditions shall be treated as technically qualified bidders.
- b) Price Bid shall be opened of only of those bidders who qualify as per clause no. 15 of Information & Instructions to Bidders

15.0. Award criteria and Award of contract:

The indicative price bids of technically qualified vendors will be opened. There after Price Bid will be opened. The L1 bidder based on lowest Price Bid will be finalized.

SAMPLE BUSINESS RULE DOCUMENT

ONLINE E-TENDERING FOR PROPOSED WORK AS PER CLAUSE NO. 1 OF NIT.

(A). Business rules for E-tendering:

- 1) Only empanelled contractors with SBI under appropriate category who are invited by the project Consultant/SBI shall only be eligible to participate.
- 2) SBI will engage the services of an E-tendering service provider who will provide necessary training and assistance before commencement of online bidding on Internet.
- 3) In case of e-tendering, SBI will inform the vendor in writing, the details of service provider to enable them to contact and get trained.
- 4) Business rules like event date, closing and opening time etc. also will be communicated through service provider for compliance.
- 5) Contractors have to send by email, the compliance form in the prescribed format (provided by service provider), before start of E-tendering. Without this the vendor will not be eligible to participate in the event.
- 6) The Contractors will be required to submit the various documents in sealed Envelope to the office of SBI at the address mentioned hereinbefore by the stipulated date i.e. (1) Hard Copy of Technical Bid duly signed and stamped on each page (2) Account Name: SBI Subsidy Inward Remittance Account No.: 4897932113433 IFSC: SBIN0011343 Branch OAD, GITC, Belapur of specified amount of EMD. Contractors not submitting any one or more documents shall not be eligible to participate in the on-line price bidding.
- 7) E-tendering will be conducted on schedule date & time.
- 8) The e-tendering will be treated as closed only when the bidding process gets closed in all respects for the item listed in the tender.

(B). Terms & conditions of E-tendering: SBI shall finalize the Tender through e-tendering mode for which M/s E-Procurement Technologies Ltd. has been engaged by SBI an authorized service provider. Please go through the guidelines given below and submit your acceptance to the same along with your Commercial Bid.

- 1) E-tendering shall be conducted by SBI through M/s E-procurement Technologies Ltd., on pre-specified date. While the Contractors shall be quoting from their own offices/ place of their choice, Internet connectivity and other paraphernalia requirements shall have to be ensured by Contractors themselves. In the event of failure of their Internet connectivity, (due to any reason whatsoever it may be) it is the bidders' responsibility. In order to ward-off such contingent situation bidders are requested to make all the necessary arrangements/ alternatives such as back-up power supply whatever required so that they are able to circumvent such situation and still be able to participate in the E-tendering successfully. Failure of power at the premises of Contractors during the E-tendering cannot be the cause for not participating in the E-tendering. On account of this the time for the E-tendering cannot be extended and SBI is not responsible for such eventualities.
- 2) M/s E-Procurement Technologies Ltd, shall arrange to train your nominated person(s), without any cost to you. They shall also explain you all the Rules related to the E-tendering. You are required to give your compliance on it before start of bid process.
- 3) **BIDDING CURRENCY AND UNIT OF MEASUREMENT:** Bidding will be conducted in Indian currency & Unit of Measurement will be displayed in Online E-tendering.
- 4) **BID PRICE:** The Bidder has to quote the rate as per the Tender Document provided by SBI their appointed Structural Consultants.

- 5) VALIDITY OF BIDS: The Bid price shall be firm for a period specified in the tender document and shall not be subjected to any change whatsoever.
- 6) Procedure of E-tendering: i. Online E-tendering:
 - a) The NIT & Technical bid available on the Bank's website during the period specified in the NIT.
 - b) Online e-tendering is open to the empanelled bidders who receive NIT from the Structural Consultant and qualified for participating in the price bidding as provisions mentioned hereinabove through SBI approved Service Provider.
 - c) The Price-Bid shall be made available online by the Service Provider wherein the contractors will be required to fill-in their Item-wise rates for each item.
 - d) The Contractors are advised not to wait till the last minute to submit their online item-wise quote in the price bid to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.
 - e) It is mandatory to all the bidders participating in the price bid to quote their rates for each and every item.
 - f) In case, contractor fails to quote their rates for any one or more tender items, their tender shall be treated as "Incomplete Tender" and shall be liable for rejection.
- 7) LOG IN NAME & PASSWORD: Each Bidder is assigned a Unique User Name & Password by M/s E-Procurement Technologies Ltd. The Bidders are requested to change the Password after the receipt of initial Password from M/s E-Procurement Technologies Ltd. All bids made from the Login ID given to the bidder will be deemed to have been made by the bidder.
- 8) BIDS PLACED BY BIDDER: Bids will be taken as an offer to execute the work as specified. Bids once made, cannot be cancelled / withdrawn and the Bidder shall be bound to execute the work at the quoted bid price. In case the L-1 Bidder backs out or fail to complete the work as per the rates quoted, SBI shall at liberty to take action as deemed necessary including de-panelling such contractors and forfeiting their EMD.
- 9) At the end of the E-tendering, SBI will decide upon the winner. SBI decision on award of Contract shall be final and binding on all the Bidders.
- 10) SBI shall be at liberty to cancel the E-tendering process / tender at any time, before ordering, without assigning any reason.
- 11) SBI shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause.
- 12) Other terms and conditions shall be as per your techno-commercial offers and other correspondences till date.
- 13) OTHER TERMS & CONDITIONS:
 - The Bidder shall not involve himself or any of his representatives in Price manipulation of any kind directly or indirectly by communicating with other suppliers / bidders.
 - The Bidder shall not divulge either his Bids or any other exclusive details of SBI to any other party.
 - SBI decision on award of Contract shall be final and binding on all the Bidders.
 - SBI reserve their rights to extend, reschedule or cancel any E-tendering within its sole discretion.
 - SBI or its authorized service provider M/s E-Procurement Technologies Ltd shall not have any liability to Bidders for any interruption or delay in access to the site irrespective of the cause.

- SBI or its authorized service provider M/s E-Procurement Technologies Ltd is not responsible for any damages, including damages that result from, but are not limited to negligence.
- SBI or its authorized service M/s E-Procurement Technologies Ltd will not be held responsible for consequential damages, including but not
- Limited to systems problems, inability to use the system, loss of electronic information etc.

N.B.:

All the Bidders are required to submit the Process Compliance Statement duly signed to M/s E-Procurement Technologies Ltd.

All the bidders are requested to ensure that they have a valid digital signature certificate well in advance to participate in the online event.

PROCESS COMPLIANCE STATEMENT (ANNEXURE II)

(The bidders are required to print this on their company's letter head and sign, stamp before emailing)

To,
E-Procurement Technologies Ltd.
(Auction Tiger)
A-201 / 208, Wall Street - II,
Opp. Orient Club, Nr. Gujarat
College, Ahmedabad - 380006.
Gujarat State, India

AGREEMENT TO THE PROCESS RELATED TERMS AND CONDITIONS FOR THE ONLINE E-TENDERING FOR PROPOSED STRUCTURAL REPAIR, RENOVATION AND RETROFITTING WORKS OF C-01 & C-02 BUILDINGS AT SBI'S RESIDENTIAL COLONY SECTOR-13, NERUL, NAVI MUMBAI.

Dear Sir,

This has reference to the Terms & Conditions for the E-tendering mentioned in the Tender document, this letter is to confirm that:

1. The undersigned is authorized representative of the company.
2. We have studied the Commercial Terms and the Business rules governing the E-tendering as mentioned in RFP of SBI as well as this document and confirm our agreement to them.
3. We also confirm that we have taken the training on the E-tendering tool and have understood the functionality of the same thoroughly.
4. We confirm that SBI and **E-tendering Technologies Ltd.** , shall not be liable & responsible in any manner whatsoever for my/our failure to access & bid on the e-E-tendering platform due to loss of internet connectivity, electricity failure, virus attack, problems with the PC, any other unforeseen circumstances etc. before or during the E-tendering event.
5. We confirm that we have a valid digital signature certificate issued by a valid Certifying Authority.
6. We, hereby confirm that we will honour the Bids placed by us during the E-tendering process.

With regards, Date:

Signature with company seal Name :

Company / Organization :

Designation within Company / Organization :

Address of Company / Organization :

Scan it and send to this Document on :

(A) Contact Information

<p>E-Procurement Technologies Ltd.</p>	<p>State Bank of India</p>	<p>Structural Consultant</p>
<p>B-704, Wall Street - II, Opp. Orient Club, Nr. Gujarat College, Ahmedabad- 380 006. Gujarat State, India</p> <p>Tel.: +91 79 61200 579 580 567 569 566</p> <p>Name: Komal Dave E-mail: komal.d@eptl.in Contact No :9904407998 9510813194</p>	<p>The Assistant General Manager (Estate), State Bank of India, Navi Mumbai. Officer Name: Mr. Upendra Nath Marandi Department: Estate Contact No 022-27537411</p> <p>The Assistant General Manager (Civil), State Bank of India, Navi Mumbai. Officer Name: Mr. Zakir Shah Department: Estate Contact No 022-27537412</p> <p>The Assistant Manager (Civil) State Bank of India, Navi Mumbai. Officer Name: Mr. Sanjeev Kumar Saini Department: Estate Contact No 022-27537428</p>	<p>M/s. CREATIVE CONSULTANTS</p> <p>Name: Shri. Vivek Singh. 335, 3rd Floor, Kuber Complex, New Link Road, Opp. Laxmi Industrial Estate, Andheri (west), Mumbai - 400 053. Tell: 022 - 49647088 Contact: 9619620379 / 9820935856</p>

1. LETTER OF TRANSMITTAL (Annexure-V)

(The bidders are required to print this on their company's letter head and sign, stamp before emailing)

To,
The Dy. General Manager (F & OA),
Estate Dept. State Bank Global IT Centre,
1st Floor, "C" Wing, Sector 11, C.B.D. Belapur,
Navi Mumbai – 400614.

Dear Sir,

Having examined the drawings, specification, design and schedule of quantities relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the tender, I/We hereby offer to execute the works specified in the said memorandum at the rates mentioned in the attached Schedule of Quantities and in accordance in all respects with the specifications, design, drawings and instructions in writing referred to in conditions of tender, the Articles of Agreement, Special Conditions, Schedule of Quantities and Conditions of Contract and with such materials as are provided for by, and in all other respects in accordance with such conditions so far as they may be applicable.

MEMORANDUM

(a)	Description of work	<i>“Proposed Structural Repair, Renovation and Retrofitting Works of C-01 & C-02 Buildings at SBI’s Residential Colony Sector-13, Nerul, Navi Mumbai.</i>
(b)	Earnest Money	of amount as per Clause No. 3 of NIT by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned in para 4.6 of Information and Instruction for Bidders
(c)	Time allowed for completion of the Works from fifteenth day after the date of written Order or date of handing over of the site (Whichever is later) to commence the work	As per Clause No 27 of GCC.

- Should this tender be accepted, I/we hereby agree to abide by and fulfill the terms and provisions of the said conditions of contract annexed hereto so far as may be applicable or in default thereof to forfeit and pay to SBI, the amount mentioned in the said contract.
- I / We have deposited a sum of the amount as per Clause No. 3 of the total tender amount as Earnest Money with the SBI which amount is not to bear any interest. Should I / We fail to execute the Contract when called upon to do so I / We do hereby agree that this sum shall be forfeited by me/us to State Bank of India.
- I/ We understand that as per terms of this tender, the SBI may consider accepting our tender in part or whole or may entrust the various work proposed in phases. We, therefore, undertake that we shall not raise any claim/ compensation in the eventuality of Bank deciding to drop any of the work from the scope of work of this tender at any stage during the contract period. Further, we also undertake to execute the work entrusted to us in phases on our approved rates and within stipulated time limit without any extra claim for price escalation unless

otherwise separately mentioned as also provided for in the clauses of "Instructions to Tenderers" of this tender.

4. I/ We, hereby, also undertake that, we will not raise any claim for any escalation in the prices of any of the material during the contract/execution/completion period including authorized extended contract period, if any.

5. Our Bankers are:

- i)
- ii)

The names of partners of our firm are:

- i)
- ii)

Name of the partner of the firm Authorized to sign

Or

(Name of person having Power of Attorney to sign the Contract.
(Certified true copy of the Power of Attorney should be attached)

Yours faithfully,

Signature of Contractors.

Signature and addresses of Witnesses

i)

ii)

GENERAL CONDITIONS OF CONTRACT (GCC)

1.0 Définitions :-

“Contract” means the documents forming the tender and the acceptance thereof and the formal agreement executed between State Bank of India (client) and the contractor, together with the documents referred there in including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Structural Consultants/ Bank and all these documents taken together shall be deemed to form one contract and shall be complementary to one another.

1.1 In the contract the following expressions shall, unless the context otherwise requires, have the meaning hereby respectively assigned to them.

a) ‘RFP’ means the documents forming the tender i.e. the Technical bid document, Price bid document, along with its corrigendum and clarification and the acceptance thereof and together with the documents referred there in including these conditions, the specifications, designs, drawings, Pre-Qualifications – Expression of Interest, any correspondence from RFP till work order, etc. Complete.

b) ‘Bid’ means the written reply or submission of response to this RFP.

1.1.1 ‘SBI’ shall mean State Bank of India (client) a body Corporate created under State Bank of India Act 1955, having its Corporate Centre at State Bank Bhavan, Madame Cama Road, Mumbai 400 021 and it’s office at F&OA Department, Estate Dept. SBI GITC, Sector 11 at Navi Mumbai 400706 and includes the client’s representatives, successors and assigns.

1.1.2 ‘Architects/Consultants’ shall means M/s Creative Consultants, Andheri (West), Mumbai who are the Project Structural Consultant and Project Management Consultants, hereinafter abbreviated as Consultant and their personnel’s like Engineers, Associates, Site Engineers, Project Engineers, Consulting Engineers, PMC Personnel etc. appointed by the SBI at site as their representative for day-to-day supervision of work and to give instructions to the contractors.

1.1.3 ‘The Contractor’ / ‘Service Provider’ shall mean the individual or firm or company whether incorporate not, undertaking the works and shall include legal personal representative of individual or the composing the firm or company and the permitted assignees of individual or firms of company.

The expression ‘works or ‘work’ shall mean the permanent or temporary work description in the “Scope of work” and / or to be executed in accordance with the contract includes materials, apparatus, equipment, temporary supports, fittings and things of kinds to be provided, the obligations of the contractor hereunder and work to be done by the contractor under the contract.

1.1.4 ‘Drawing’ shall mean the drawings prepared by the Architect/Consultants and issued by the Engineer and referred to in the specifications and any modifications of such drawings as may be issued by the Engineer from time to time.

1.1.5 Spécifications’ shall mean the specifications referred to in the tender and Modifications thereof as may time to time be furnished or approved by the Consultant.

1.1.6 “Month” means calendar month and “Week” means seven consecutive Days.

1.1.7 “Contract Value” shall mean value of the entire work as stipulated in the letter of acceptance of tender subject such additions there to or deductions there from as may be made under the provide herein after contained.

1.1.8 (A) “Week” means seven consecutive days.

(B) “Day” means a calendar day beginning and ending at 00 Hrs. and 24 Hrs. respectively.

1.1.9 “SBI’s Engineer” shall mean The Civil / Electrical Engineer in - charge of the Project, as nominated by the Dy. General Manager (F & AO), Estate Department, GITC, State Bank of India, CBD Belapur, Navi Mumbai.

1.1.10 The following shall constitute the Joint Project Committee (herein under referred to as JPC) for assessing and reviewing the progress of the work on the Project and to issue instructions or

directions from time to time for being Observed and followed by the Structural Consultant's Site Engineer /STRUCTURAL CONSULTANT and other Consultants / contractors engaged in the execution of the project.

- i)* Dy. Gen. Manager (F & OA),
- ii)* Assistant General Manager, Estate Department of SBI
- iii)* SBI Engineer (Civil and Electrical) in-charge of the Project, as may be nominated by the Estate Department, State Bank of India, Navi Mumbai.
- iv)* Concerned partner / proprietor of the Structural Consultants and their team Member.

1.1.11 **“Complete Project Closure Report”** by SBI and Project Management Consultant means following conditions are satisfied and all works related to it are complete & reports closed after due repairs, replacements, trials, test, etc.

The project shall be considered complete & closed only when:

- a) Defect Liability Period (DLP) for all items of work is over: DLP is for 12 months from the date of virtual completion (as per para 23 of GCC) of work or one complete monsoon season, whichever is later, and**
- b) Acceptance & closure of all queries & works after due rectification/replacements/ tests as referred by Chief Technical Examiner, CVC and**
- c) Acceptance and closure of all arbitration, court cases, etc. Related to the said project, as decided by the Bank ... whichever is later.**

1.2 Total Security Deposit

Total Security deposit comprise of
Earnest Money Deposit
Initial security deposit
Retention Money
Additional Security Deposit

a) Earnest Money Deposit -

The tenderer shall furnish EMD of the amount as per Clause No. 3 of **NIT** by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned in para 4.6, of Information and Instruction for Bidders. No tender shall be considered unless the EMD is so deposited in the required form. No interest shall be paid on this EMD. The EMD of the unsuccessful tenderer shall be refunded soon after the decision to award the contract is taken without interest. The EMD shall stand absolutely forfeited if the tenderer revokes his tender at any time the period when he is required to keep his tender open acceptance by the SBI or after it is accepted by the SBI the contractor fails to enter into a formal agreement or fails to pay the initial security deposit as stipulated or fails to commence the work within the stipulated time or if a Bidder makes any statement or encloses any form which turns out to be false / incorrect at any time prior to signing of Contract; or if a technically qualified Bidder do not participate in the auction by not logging in, in the reverse auction tool. EMD of successful tenderer shall also be refunded on receipt of ISD.

b) Initial Security Deposit (ISD)

The amount of ISD shall be 2% of accepted value of tender in the form of DD/drawn on any scheduled Bank and shall be deposited within 15 days from the date of acceptance of tender.

No interest shall be paid to the amount retained by the Bank as Security Deposit.

c) Retention Money: -

As per Part B - Point 6 of Information and Instruction to Bidders. Besides the ISD as deposited by the contractor in the above said manner the retention money shall be deducted from the running account bill at the rate of 10% of the gross value of work done by the contractor and claimed in each bill provided the total security deposit i.e. the ISD plus Retention Money shall

both together not exceed 5% of the contract value. 50% of the total security deposit shall be refunded to the contractor without any interest on issue of Virtual Completion certificate by the Architect/consultant. The balance 50% of the total security deposit shall be refunded to the contractors without interest within fifteen days after the end of defects liability period provided the contractor has satisfactorily attended to all defects in accordance with the conditions of contract including site clearance.

- d) Additional Security Deposit:** - Additional Security deposit (ASD)/Additional performance Guarantee (APG) shall be applicable if the bid price is below 7.5 % of the estimated cost put to tender. The amount of such ASD/ APG shall be the difference between 92.5 % of estimated cost put to tender and the quoted price.

2.0 Language

The language in which the contract documents shall be drawn shall be in English.

3.0 Errors, omissions and discrepancies

In case of errors, omissions and/ or disagreement between written and scaled dimensions on the drawings or between the drawings and specifications etc., the following order shall apply.

- i) Between scaled and written dimension (or description) on a drawing, the latter shall be adopted.
- ii) Between the written or shown description or dimensions in the drawings and the corresponding one in the specification the former shall be taken as correct.
- iii) Between written description of the item in the specifications and descriptions in bills of quantities of the same item, the former shall be adopted:
- iv) In case of difference between rates written in figures and words, the rate in words shall prevail.
- v) Between the duplicate / subsequent copies of the tender, the original tender shall be taken as correct.

4.0 Scope of Work:

- 5.0** The contractor shall carry out, complete and maintain the said work in every respect strictly in accordance with this contract and with the directions of and to the satisfaction of the Bank to be communicated through the architect/consultant. The architect/consultant at the directions of the Bank from time to time issue further drawings and/or written instructions, details directions and explanations which are hereafter collectively referred to as Architect's/Consultant's instructions in regard to : the variation or modification of the design, quality or quantity of work or the addition or omission or substitution of any work, any discrepancy in the drawings or between the BOQ and/or drawings and/or specifications, the removal from the site of any material brought thereon by the contractor and the substitution of any other materials thereof, the demolition, removal and/or re-execution of any work executed by him, the dismissal from the work of any person employed/engaged thereupon.

6.0 Letter of Acceptance:

- i) Within the validity period of the tender the SBI shall issue a letter of acceptance directly or through the Structural Consultant by registered post or otherwise depositing at the of the contractor as given in the tender to enter into a Contract for the execution of the work as per the terms of the tender. The letter of acceptance shall constitute a binding contract between the SBI and the contractor.

ii) Contract Agreement:

On receipt of intimation of the acceptance of tender from the SBI/ Structural Consultant, the successful tenderer shall be bound to implement the contract and within fifteen days there of shall sign an agreement in a non-judicial stamp paper of appropriate value. All expenses, stamp duty and other charges/ expenses in connection with the execution of the Agreement as a result of this RFP process shall be borne by successful Bidder. The Agreement/ Contract would be stamped as per Maharashtra Stamp Act, 1958 and any amendment thereto.

7.0 Ownership of drawings:

All drawings, specifications and copies thereof furnished by the SBI through its Structural Consultant / consultants are the properties of the SBI. They are not to be used on other work.

8.0 Detailed drawings and instructions:

The SBI through its Structural Consultants shall furnish with reasonable proper additional instructions by means of drawings or otherwise necessary for the execution of the work. All such drawings and instructions shall be consistent with contract documents, true developments thereof and reasonably inferable there.

The work shall be executed in conformity therewith and the contractor prepare a detailed program schedule indicating therein the date of start and completion of various activities on receipt of the work order and submit the same to the SBI through the Structural Consultant/consultant

8.1 Copies of agreement

Two copies of agreement duly signed by both the parties with the drawings.

9.0 Liquidated damages:

If the contractor fails to maintain the required progress in terms of clause 28/29 of GCC or to complete the work and clear the site including vacating their office on or before the contracted or extended date or completion, without justification in support of the cause of delay, he may be called upon without prejudice to any other right of remedy available under the law to the SBI on account of such breach to pay a liquidated damage at the rate of 0.50% of the Contract Value for delay of per week or part thereof which subject to a maximum of 5% of the Contract Value.

10.0 Materials, Appliances and Employees

Unless or otherwise specified the contractor shall provide and pay for all materials, labour, water, power, tools, equipment transportation and any other facilities that are required for the satisfactory execution and completion of the work. Unless or otherwise specified all materials shall be new and both workmanship and materials shall be best quality. The contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him. Workman whose work or behavior is found to be unsatisfactory by the SBI /structural consultant he shall be removed from the site immediately.

11.0 Permits, Laws and Regulations:

Permits and licenses required for the execution of the work shall be obtained by the contractor at his own expenses. The contractor shall give notices and comply with the regulations, laws, and ordinances rules, applicable to the contract. If the contractor observes any discrepancy between the drawings and specifications, he shall promptly notify the SBI in writing under intimation of the STRUCTURAL CONSULTANT . If the contractor performs any act, which is against the law, rules and regulations he shall meet all the costs arising there from and shall indemnify the SBI any legal actions arising there from.

12.0 Setting out Work:

The contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions, and alignment of all parts thereof and get it approved by the Consultant before proceeding with the work. If at any time any error in this respect shall appear during the progress of the works, irrespective of the fact that the layout had been approved by, the Structural Consultant the contractor shall be responsible for the same ad shall his own expenses rectify such error, if so, required to satisfaction of the SBI

13.0 Protection of works and property:

The contractor shall continuously maintain adequate protection of all his work from damage to all SBI's adjacent properties and shall protect the SBI's properties from injury or loss arising in connection with contract. He shall make good any such damage, injury, loss, Contractor shall indemnify this to SBI in format finalized by the SBI at no extra cost.

He shall take adequate care and steps for protection of the adjacent properties. The contractor shall take all precautions for safety and protections of his employees on the works and shall comply with all applicable provisions of Govt. and local bodies' safety laws and building codes to

prevent accidents, or injuries to persons or property on about or adjacent to his place of work. The contractor shall take insurance covers as per clause 24.0 at his own cost. The policy may be taken in joint names of the contractor and the SBI and the original policy may be lodged with the SBI

14.0 Inspection of work:

The SBI / Consultants or their representatives shall at all reasonable times have free access to the work site and / or to the workshop, factories, or other places where materials are lying or from where they are obtained and the contractor shall give every facility to the SBI/ Consultants and their representatives necessary for inspection and examination and test of the materials and workmanship. No person unless authorized by the SBI/ Consultants except the representative of public authorities shall be allowed on the work at any time. The proposed work either during its construction stage or its completion can also be inspected by the Chief Technical Examiner's Organization a wing of Central Vigilance commission.

15.0 Assignment and subletting

The whole of work included in the contract shall be executed the contractor and he shall not directly entrust and engage or indirectly transfer, assign or under let the contract or any part or share there of or interest therein without the written consent of the SBI through the Structural Consultant and no undertaking shall relieve the contractor from the responsibility of the contractor from active & superintendence of the work during its progress.

16.0 Quality of materials, workmanship & Test

All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Structural Consultant/consultant instructions and shall be subject from time to time to such tests as the Consultants may direct at the place of manufacture or fabrication or on the site or an approved testing laboratory. The contractor shall provide such assistance, instruments, machinery, labor, and materials as are normally required for examining measuring sampling and testing any material or part of work before incorporation in the work for testing as may be selected and required by the Structural Consultant/consultant.

i) Samples

All samples of adequate numbers, size, shades & pattern as per specifications shall be supplied by the contractor without any extra charges. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at the site detailed literature / test certificate of the same shall be provided to the satisfaction of the Structural Consultant/consultant. Before submitting the sample / literature the contractor shall satisfy himself that the material / equipment for which he is submitting the sample / literature meet with the requirement of tender specification. Only when the samples are approved in writing by the Consultant the contractor shall proceed with the procurement and installation of the material / equipment. The approved samples shall be the signed by the Consultant for identification and shall be kept on record at site office until the completion of the work for inspection / comparison at any time. The Structural Consultant/Consultant shall take reasonable time to approve the sample. Any delay that might occur in approving the samples for reasons of its not meeting the specifications or other discrepancies inadequacy in furnishing samples of best qualities from various manufacturers and such other aspects causing delay on the approval of the materials / equipment etc. shall be to the account of the contractor.

ii) Cost of tests

The cost of making any test shall be borne by the contractor if such test is intended by or provided for in the specification or BOQ.

iii) Cost of tests not provided for

If any test is ordered by the Consultant which is either If so intended by or provided for or (in the cases above mentioned) is not so particularized, or though so intended or provided for but ordered by the Consultant to be carried out by an independent person at any place other than the site or the

place of manufacture or fabrication of the materials tested or any Government / approved laboratory, then the cost of such test shall be borne by the contractor.

17.0 Obtaining information related to execution of work

No claim by the contractor for additional payment shall be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the work nor any misunderstanding or the obtaining incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfillment of contract.

18.0 Contractor's Superintendence

The contractor shall give necessary personal superintendence during the execution the works and as long, thereafter, as the Consultant may consider necessary until the expiry of the defect liability period, stated here to.

19.0 Quantities

The bill of quantities (BOQ) unless or otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard Method of Measurements and quantities. The rate quoted shall remain valid for variation of quantity against individual item. The entire amount paid under Clause 19, 20 hereof as well as amounts of prime cost and provision sums, if any, shall be excluded.

20.0 Works to be measured

The Structural Consultant may from time to time intimate to the contractor that he requires the work to be measured and the contractor shall forthwith attend or send a representative to assist the Structural Consultant in taking such measurements and calculation and to furnish all particulars or to give all assistance required by any of them. Such measurements shall be taken in accordance with the Mode of measurements detail in the specifications. The representative of the Consultant shall take measurements with the contractor's representative and the measurements shall be entered in the measurement book. The contractor or his authorized representative shall sign all the pages of the measurement book in which the measurements have been recorded in token of his acceptance. All the corrections shall be duly attested by both representatives. No over writings shall be made in the Measurement Book (M.B.) Should the contractor not attend or neglect or omit to depute his representative to take measurements, the measurements recorded by the representative of the Consultant shall be final. All authorized extra work, omissions and all variations made shall be included such measurement.

In case there will not clarity of mode of measurements then IS 27:1987, IS 1200 with all up to date releases /versions to be followed to finalize the measurements.

21.0 Variations

No alteration, omission or variation ordered in writing by the Consultant vitiates the contract. In case the SBI / Consultant thinks proper at any during the progress of works to make any alteration in, or additions to or omission from the works or any. alteration in the kind or quality of the materials to be used therein, the Consultant shall give notice thereof in writing to the contractor shall confirm in writing within seven days of giving such oral instructions the contract shall alter to, add to, or omit from as the case may be in accordance with such but the contractor shall not do any work extra to or make any alterations or additions to or omissions from the works or any deviation from any of the provisions of the contract, stipulations, specifications or contract drawings without previous consent in writing of the Consultant and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Consultant and the same shall be added to or deducted from the contract value, as the case may be.

22.0 Valuation of Variations

No claim for an extra shall be allowed unless it shall have been executed under the authority of the Consultant with the concurrence of the SBI as herein mentioned. Any such extra is herein referred to as authorized extra and shall be made in accordance with the following provisions.

- a) (i) The net rates or prices in the contract shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced herein.
- (ii) Rates for all items, wherever possible should be derived out of the rates given in the priced BOQ.

- b) The net prices of the original tender shall determine the value of the items omitted, provided if omissions do not vary the conditions under which any remaining items of Works are carried out, otherwise the prices for the same shall be valued under sub-Clause 'c' hereunder.
- c) Where the extra works are not of similar character and/or executed under similar conditions as aforesaid or where the omissions vary the conditions under which any remaining items or works are carried out, then the contractor shall within 7 days of the receipt of the letter of acceptance inform the Consultant of the rate which he intends to charge for such items of work, duly supported by analysis of the rate or rates claimed and the Consultant shall fix such rate or prices as in the circumstances in his opinion are reasonable and proper, based on the market rate.
- d) Where extra work cannot be properly measured or valued the contractor shall be allowed day work prices at the net rates stated in the tender, of the BOQ or, if not, so stated then in accordance with the local day work rates and wages for the district; provided that in either case, vouchers specifying the daily time (and if required by the Structural Consultant/Consultant) the workman's name and materials employed be delivered for verification to the Structural Consultant /consultant at or before the end of the week following that in which the work has been executed.
- e) It is further clarified that for all such authorized extra items where rates cannot be derived from the tender, the Contractor shall submit rates duly supported by rate analysis worked on the 'market rate basis for material, labour hire / running charges of equipment and wastage etc. plus 15% towards establishment charges, contractor's overheads, and profit. Such items shall, not be eligible for escalation.

23.0 Final measurement

The measurement and valuation in respect of the contract shall be completed within Six months of the virtual completion of the work, provided all the related documents, test reports, compliance, documentation, as built drawings etc. are submitted by the contractor.

24.0 Virtual Completion Certificate (VCC)

On successful completion of entire works covered by the contract to the full satisfaction of the Consultant /SBI, the contractor shall ensure that the following works have been completed the satisfaction of the Consultant /SBI:

- a) Clear the site of all scaffolding, wiring, pipes, surplus materials, contractor's labour equipment and machinery.
- b) Demolish, dismantle and remove the contractor's site office, temporary works, structure including labour sheds/camps and constructions and other items and things whatsoever brought upon or erected at the site or any land allotted to the contractor by the SBI not incorporated in the permanent works.
- c) Remove all rubbish, debris etc. from the site and the land allotted to the contractor by the Consultant /SBI and shall clear, level and dress, compact the site as required by the Consultant /SBI
- d) Shall put the SBI in undisputed custody and possession of the site and all land allot by the SBI
- e) Shall hand over the work in a peaceful manner to the Consultant /SBI.
- f) All defects / imperfections have been attended and rectified as pointed out by the Consultants to the full satisfaction of SBI

Upon the satisfactory fulfilment by the contractor as stated above, the contractor shall be entitled to apply to the Architect/Consultant for the certificate. If the Architect/Consultant is satisfied of the completion of the work, relative to which the completion certificate has been sought, the Architect/Consultant shall within fourteen (14) days of the receipt of the application for virtual completion certificate, issue a VCC in respect of the work for which the VCC has been applied.

This issuance of a VCC shall be without prejudice to the SBI's rights and contractor's liabilities under the contract including the contractor's liability for defects liability period nor shall the issuance of VCC in respect of the works or work at any site be construed as a

waiver of any right or claim of the SBI against the contractor in respect of works or work at the site and in respect of which the VCC has been issued.

25.0 Work by other agencies

The SBI / Consultant reserves the rights to use premises and any portion the site for execution of any work not included in the scope of this contract which it may desire to have carried out by other persons simultaneously and the contractor shall not only allow but also extend reasonable facilities for the execution of such work. The contractor however shall not be required to provide any plant or material for the execution of such work except by special arrangement with the SBI. Such work shall be carried out in such manner as not to impede the progress of the works included in the contract.

26.0 Insurance of works

26.1 Without limiting his obligations and responsibilities under the contract the contractor shall insure in the joint names of the SBI and the contractor against all loss of damages from whatever cause arising other than the excepted risks, for which he is responsible under the terms of contract and in such a manner that the SBI and contractor are covered for the contract period stipulated including vide clause 28 of GCC and are also covered during the period of maintenance for loss or damage arising from a cause, occurring prior to the commencement of the period of maintenance and for any loss or damage occasioned by the contractor in the course of any operations carried out by him for the purpose of complying with his obligations under clause.

- a) The Works for the time being executed to the estimated current Contract value thereof, or such additional sum as may be specified together with the materials for incorporation in the works at their replacement value.
- b) The constructional plant and other things brought on to the site by the contractor to the replacement value of such constructional plant and other things.
- c) Such insurance shall be effected with an insurer and in terms approved by the SBI which approval shall not be unreasonably withheld and the contractor shall whenever require produce to the Consultant the policy if insurance and the receipts for payment of the current premiums.

26.2 Damage to persons and property

The contractor shall, except if and so far as the contract provides otherwise indemnify the SBI against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and Maintenance of the works and against all claim's proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation of damages for or with respect to:

- a) The permanent use or occupation of land by or any part thereof.
- b) The right of SBI to execute the works or any part thereof on, over, under, in or through any lands.
- c) Injuries or damages to persons or properties which are unavoidable result of the execution or maintenance of the works in accordance with the contract
- d) Injuries or damage to persons or property resulting from any act or neglect of the SBI their agents, employees or other contractors not being employed by the contractor or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the SBI, their employees, or agents or other employees, or agents or other contractors for the damage or injury.

26.3 Contractor to indemnify SBI

The contractor shall indemnify the SBI against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision sub-clause 25.2 of this clause.

26.4 Contractor's superintendence

The contractor shall fully indemnify and keep indemnified the SBI against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claim made under or action brought against SBI in respect of such matters as aforesaid the contractor shall be immediately notified thereof and the

contractor shall be at liberty, at his own expenses to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the SBI if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Consultant in this behalf.

26.5 Third Party Insurance

Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under clause 24.0 of GCC shall insure against his liability for any material or physical damage, loss, or injury which may occur to any property including that of SBI, or to any person, including any employee of the SBI, by or arising out of the execution of the works or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to clause 24.0 thereof.

26.6 Minimum amount of Third-Party Insurance

Such insurance shall be effected with an insurer and in terms approved by the SBI which approval shall not be reasonably withheld and for at least the amount stated below. The contractor shall, whenever required, produce to the STRUCTURAL CONSULTANT the policy or policies of insurance cover and receipts for payment of the current premiums.

26.7 The minimum insurance cover for physical property, injury, and death is Rs.5 Lakh per occurrence with the number of occurrences limited to four. After each occurrence contractor will pay additional premium necessary to make insurance valid for four occurrences always.

26.8 Accident or Injury to workman:

26.8.1 The SBI shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workmen or other person in the employment of the contractor or any sub-contractor, save and except an accident or injury resulting from any act or default of the SBI or their agents, or employees. The contractor shall indemnify and keep indemnified SBI against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

26.8.2 Insurance against accidents etc. to workmen

The contractor shall insure against such liability with an insurer approved by the SBI during the whole of the time that any persons are employed by him on the works and shall, when required, produce to the Consultants such policy of insurance and receipt for payment of the current premium. Provided always that, in respect of any persons employed by any sub-contractor the contractor's obligation to insured as aforesaid under this sub-clause shall be satisfied if the sub-contractor shall have insured against the liability in respect of such persons in such manner that SBI is indemnified under the policy but the contractor shall require such sub-contractor to produce to the Structural Consultant /consultant when such policy of insurance and the receipt for the payment of the current premium.

26.8.3 Remedy on contractor's failure to insure

If the contractor fails to effect and keep in force the insurance referred to above or any other insurance which he may be required to effect under the terms of contract, then and in any such case the SBI may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the SBI as aforesaid from any amount due or which may become due to the contractor, or recover the same as debt from the contractor.

26.8.4 Without prejudice to the others rights of the SBI against contractors. In respect of such default, the employer shall be entitled to deduct from any sums payable to the contractor the amount of any damage's costs, charges, and other expenses paid by the SBI and which are payable by the contractors under this clause. The contractor shall upon settlement by the Insurer of any claim made against the insurer pursuant to a policy taken under this clause, proceed with due diligence to rebuild or repair the works destroyed or damaged. In this event all the monies received from the Insurer in respect of such damage shall be paid to the contractor and the Contractor shall not be entitled to any further payment in respect of the expenditure incurred for rebuilding or repairing of the materials or goods destroyed or damaged.

26.9 Insurance Policies:

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Consultants /SBI proper **Contractor All Risk Insurance Policy** for an amount 1.25 times the contract amount for this work, with Consultants /SBI as the first beneficiary. The insurance shall be obtained in joint names of Consultants /SBI and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Consultants /SBI from any liability during the execution of the work. Further, he shall obtain and submit to the Consultants /SBI, a **third-party insurance policy** for maximum Rs. 10 lakhs for each accident, with the STRUCTURAL CONSULTANT /SBI as the first beneficiary. The insurance shall be obtained in joint names of STRUCTURAL CONSULTANT /SBI and the Contractor (who shall be second beneficiary).

The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that Insurance Policies are also taken for the workers of his Sub-Contractors / specialized agencies also. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Consultants /SBI. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts. (Refer Annexure XVII).

27.0 Commencement of Works:

The date of commencement of the work will be reckoned as the date, three days from the date of award of contract letter by the SBI/Structural Consultants.

28.0 Time for completion

Time is essence of the contract and shall be strictly observed by the contractor. The entire work shall be completed within a period of **06 Calendar Months including Monsoon (Grade period 15 will be given)** from the date of commencement. If required in the contract or as directed by the Structural Consultant / consultant. The contractor shall complete certain portions of work before completion of the entire work. However, the completion date shall be reckoned as the date by which the whole work is completed as per the terms of the contract.

29.0 Extension of time

If, in the opinion of the Structural Consultant, the work be delayed for reasons beyond the control of the contractor, the Structural Consultant may submit a recommendation to the SBI to grant a fair and reasonable extension of time for completion of work as per the terms of contract. If the contractor needs an extension of time for the completion of work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion as stipulated in the contract, the contractor shall apply to the SBI through the Structural Consultant' Consultant in writing at least 30 Days before the expiry of the scheduled time and while applying for extension of time he shall furnish the reason in detail and his justification if any', for the delays. The Structural Consultant/consultant shall submit their recommendations to the SBI in the prescribed format for granting extension of time. While granting extension of time the contractor shall be informed the period extended time which will qualify for levy of liquidated damages. For the balance period in excess of original stipulated period and duly sanctioned extension of time by the provision of liquidated damages as stated under clause 8.0 shall become applicable. Further the contract shall remain in force even for the period beyond the due date of completion irrespective whether the extension is granted or not.

30.0 Rate of progress

Whole of the materials, plant and labour to be provided by the contractor and the mode, manner and speed of execution and maintenance of the works are to be of a kind and conducted in a manner to the satisfaction of the STRUCTURAL CONSULTANT should the rate of progress of the work or any part thereof be at any time be in the opinion the STRUCTURAL CONSULTANT too Slow to ensure the completion of the whole of the work the prescribed time or extended time for completion the STRUCTURAL CONSULTANT shall thereupon take such steps as considered necessary by the STRUCTURAL CONSULTANT to expedite progress so as to complete the works by the prescribed time or extended time. Such communications from the STRUCTURAL CONSULTANT neither shall relieve the contractor from fulfilling obligations under the contract nor will he be entitled to raise any claims arising out of such directions.

31.0 Work during nights and holidays

Subject to any provision to the contrary contained in the contract no permanent work shall save as herein provided be carried on during the night or on holidays without the permission in writing of the Structural Consultant / consultant, save when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the work in which case the contractor shall immediately advise the Structural Consultant / consultant. However, the provisions of the clause shall not be applicable in the case of any work which becomes essential to carry by rotary or double shifts in order to achieve the progress and quality of the part of the works being technically required / continued with the prior approval of the STRUCTURAL CONSULTANT at no extra cost to the SBI.

All work at night after obtaining approval from competent authorities shall be carried out without unreasonable noise and disturbance.

32.0 No compensation or restrictions of work

If at any time after acceptance of the tender SBI shall decide to abandon or reduce the scope of work for any reason whatsoever and hence not required, the whole or any part of the work to be carried out. The STRUCTURAL CONSULTANT /SBI shall give notice in writing that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the execution of the Work fully but which he did not derive in consequence of the foreclosure of the whole or part of the work.

Provided that the contractor shall be paid the charges on the cartage only of materials actually and bona-fide brought to the site of the work by the contractor and rendered surplus as a result of the abandonment, curtailment of the work or any portion thereof and then taken back by the contractor, provided however that the Consultants shall have in such cases the option of taking over all or any such materials at their purchase price or a local current rate whichever is less.

"In case of such stores having been issued from SBI stores and returned by the contractor to stores, credit shall be given to him at the rates not exceeding those at which were originally issued to the contractor after taking into consideration and deduction for claims on account of any deterioration or damage while in the custody of the contractor and in this respect the decision of Consultants shall be final.

33.0 Suspension of work

- i) The contractor shall, on receipt of the order in writing of the Consultants /SBI whose decision shall be final and binding on the contractor) suspend the progress of works or any part thereof for such time and in such manner as Structural Consultant /consultant may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of following reasons:
 - a) On account any default on the part of the contractor, or
 - b) For proper execution of the works or part thereof for reasons other than the default the contractor, or
 - c) For safety of the works or part thereof. The contractor shall, during such suspension, properly protect and secure the works the extent necessary and carry out the instructions given in that behalf by the Structural Consultant / consultant.
- ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above: The contractor shall be entitled to an extension of time equal to the period of every such suspension. No compensation whatsoever shall be paid on this account.

34.0 Action when the whole security deposit is forfeited

In any case in which under any clause or clauses of this contract, the Contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit the STRUCTURAL CONSULTANT shall have the power to adopt any of the following course as they may deem best suited to the interest of the SBI:

- a) To rescind the contract (of which rescission notice in writing to the contractor by – Consultants shall be conclusive evidence) and in which case the security, deposit of the contractor shall be forfeited and be absolutely at the disposal of SBI
- b) To employ labour paid by the SBI and to supply materials to carry out the work, or part of the work, debiting the contractor with the cost of the labour and materials cost of such labour and materials as worked out by the Structural Consultant/consultant shall final and conclusive against the contractor) and crediting him with the value of the work done, in all respects in the same manner and at the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract certificate of Structural Consultant /consultant as to the value of work done shall be final conclusive against the contractor.
- c) To measure up the work of the contractor, and to take such part thereof as shall unexecuted, out of his hands, and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (The amount of which excess the certificates in writing of the Structural Consultants / consultant shall final and conclusive) shall be borne by original contractor and may be deducted f any money due to him by SBI under the contract or otherwise, or from his security deposit or the proceeds of sale thereof, or sufficient part thereof.

In the event of any of above courses being adopted by the SBI the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any material or entered into any engagements or make any advances on account of, or with a view to the execution of the work or the performance of the contract and in case the contract shall be rescind under the provision aforesaid, the contractor shall not be entitled to recover or to be paid any sum or any work thereto for actually performed under this contract, unless, and until the STRUCTURAL CONSULTANT will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

35.0 SBI's right to terminate the contract

If the contractor being an individual or a firm commit any 'Act of insolvency' or shall be adjusted an insolvent or being an incorporated company shall have an order for compulsory winding up voluntarily or subject to the supervision of Govt. and of the Official Assignee of the liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him to do so, to show to the reasonable satisfaction of the Consultants that he is able to carry out and fulfill the contract, and to dye security therefore if so required by the Consultants or if the contractor (whether an individual firm or incorporated Company) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of the contractor.

Or shall assign or sublet this contract without the consent in writing of the SBI through the Structural Consultant or shall charge or encumber this contract or any payment due to which may become due to the contractor there under:

- a) Has abandoned the contract; or
- b) has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 14 days after receiving from the SBI through the Consultants written notice to proceed, or
- c) has failed to proceed with the works with such diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or has failed to remove the materials from the site or to pull down and replace work within seven days after written notice from the SBI through the Consultants that the said materials were condemned and rejected by the Structural Consultant/consultant under these conditions; or has neglected or failed persistently to observe and perform all or any of the acts matters or things by this contract to be observed and performed by the contractor for seven days after written notice shall have been given to the contractor to observe or perform the same or has to the detriment of good workmanship or in defiance of the SBI or Structural Consultant's / consultant's instructions to the

contrary subject any part of the contract. Then and in any of said cases the SBI and or the Structural Consultant / consultant, may not withstanding any previous waiver, after giving seven days' notice in writing to the contractor, determine the contract, but without thereby affecting the powers of the SBI or the Consultants or the obligation and liabilities of the contractor the whole of which shall continue in force as fully as if the contract had not been determined and as if the works subsequently had been executed by or on behalf of the contractor. And, further the SBI through the Consultants their agents or employees may enter upon and take possession of the work and all plants, took scaffolding, materials, sheds, machineries lying upon the premises or on the adjoining lands or roads use the same by means of their own employees or workmen in carrying on and completing the work or by engaging any other contractors or persons to the work and the contractor shall not in any was interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for complement and finishing or using the materials and plant for the works.

When the works shall be completed or as soon thereafter as convenient the SBI or Consultants shall give a notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within 14 days after receive thereof by him the SBI sell the same by publication, and after due publication, and shall, adjust the amount realized by such auction. The contractor shall have no right to question any of the act of the SBI incidental to the sale of the materials etc.

36.0 Certificate of payment

The contractor shall be entitled for the certificates to be issued by the Consultants within 10 working days from the date of submission provided it is with all required documents, test reports, recording in MB etc. The SBI shall recover the statutory recovering other dues including the retention amount from the certificate of payment.

Provided always that the issue of any certificate by the Consultants during progress of works or completion shall not have effect as certificate of satisfaction relieve the contractor from his liability under clause.

The Consultants shall have power to withhold the certificate if the work or in part thereof is not carried out to their satisfaction.

The Consultants may by any certificate make any corrections required previous certificate.

The SBI shall modify the certificate of payment as issued by the Consultants from time to time while making the payment

The contractor shall submit interim bills only after taking actual measurements and properly recorded in the Measurement Book (M. B.)

The Contractor shall not submit interim bills when the value of work done by him is less than the limit as prescribed in NIT, Clause No. 15.

The final bill may be submitted by contractor within a period of one month from the date of virtual completion and Consultants shall issue the certificate of payment within a period of two months. The SBI shall pay the amount within a period of three months from the date of issue of certificate provided there is no dispute in respect of rates and quantities.

The contractor shall submit the interim bills in the prescribed format with all details.

37.0 Settlement of Disputes and Arbitration

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or the execution or failure to execute the same, whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter :

- i. If the contractor considers that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the Structural Consultant or in

case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract or raise any dispute, the Contractor shall forthwith give notice in writing of his claim, or dispute to the Assistant General Manager (Estate)/ Dy. General Manager (F & OA) and endorse a copy of the same to the Structural Consultant, within 30 days from the date of disallowance thereof or the date of deduction or recovery. The said notice shall give full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the Bank be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the Assistant General Manager (Estate)/ Dy. General Manager (F & OA) in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claim not notified to the Assistant General Manager (Estate)/ Dy. General Manager (F & OA) in writing in the manner and within the time aforesaid.

- ii. The Assistant General Manager (Estate)/Dy. General Manager (F & OA) shall give his decision in writing on the claims notified by the contractor. The contractor may within 30 days of the receipt of the decision of the Assistant General Manager (Estate)/ Dy. General Manager (F & OA) submit his claims to the conciliating authority namely the Circle Development Officer/General Manager (ITSS) for conciliation along with all details and copies of correspondence exchanged between him and the Assistant General Manager (Estate)/ Dy. General Manager (F & OA).
- iii. If the conciliation proceedings are terminated without settlement of the disputes, the contractor shall, within a period of 30 days of termination thereof shall give a notice to the concerned Chief General Manager/ Dy. Managing Director (HR) & Corporate Development Officer of the Bank for appointment of an arbitrator to adjudicate the notified claims failing which the claims of the contractor shall be deemed to have been considered absolutely barred and waived.
- iv. Except where the decision has become final, binding and conclusive in terms of the contract, all disputes or differences arising out of the notified claims of the contractor as aforesaid and all claims of the Bank shall be referred for adjudication through arbitration by the Sole Arbitrator appointed by the Chief General Manager/ Dy. Managing Director (HR) & Corporate Development Officer. It will also be no objection to any such appointment that the Arbitrator so appointed is a Bank Officer and that he had to deal with the matters to which the Contract relates in the course of his duties as Bank Officer. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid by the said Chief General Manager/ Dy. Managing Director (HR) & Corporate Development Officer. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.

It is also a term of this contract that no person other than a person appointed by such Chief General Manager aforesaid should act as arbitrator.

The conciliation and arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or re- enactment thereof and the rules made there under.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties. However, no fees will be payable to the arbitrator if he is a Bank Officer.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and

counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

38.0 Water Supply

The contractor shall make his own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following condition.

- i) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the Structural Consultant / consultant's.
- ii) The contractor shall make alternative arrangements for the supply of water if the

39.0 Power Supply

SBI shall provide electric power supply at Single Location for entire tenure of the project and all the necessary arrangement for electricity point i.e. cable, switch etc. shall be responsibility of the contractor.

40.0 Treasure Trove etc.

Any treasure trove, coin or object antique which may be found on the site shall be the property of SBI and shall be handed over to the bank immediately.

41.0 Method of Measurement

Unless otherwise mentioned in the schedule of quantities or in mode of measurement, the measurement will be on the net quantities or work produced in accordance with up-to-date rules laid down by the Bureau of Indian Standards. In the event any dispute / disagreement the decision of the STRUCTURAL CONSULTANT /SBI shall be final and binding on the contractor. Precedence to be followed for measurements is mentioned below;

- a) As mentioned in Price Bid
- b) As mentioned in Technical Bid
- c) As Per IS 1200 updated till date
- d) As per SP 27 updated till date
- e) As per sound Engineering Practices or any other relevant standards available

42.0 Maintenance of Registers

The contractor shall maintain the following registers as per the enclosed perform at site of work and should produce the same for inspection of SBI /STRUCTURAL CONSULTANT whenever desired by them. The contractor shall also maintain the records / registers as required by the local authorities / Govt. from time to time.

- I) register for secured advance
- II) Register for hindrance to work
- III) Register for running account bill
- IV) Register for labour

43.0 Force Majeure

43.1 Neither contractor nor SBI shall be considered in default in performance of the obligations if such performance is prevented or delayed by events such as but not war, hostilities revolution, riots, civil commotion, strikes, lockout, conflagrations, epidemics, pandemic, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of or for any other cause beyond the reasonable control of the party affected or prevents or delayed. However, a notice is required to be given within 30 days from the happening of the event with complete details, to the other party to the contract, if it is not possible to serve a notice, within the shortest possible period without delay.

43.2 As soon as the cause of force majeure has been removed the party whose ability perform its obligations has been affected, shall notify the other of such cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.

43.3 From the date of occurrence of a case of force majeure obligations of the party affected shall be suspended during the continuance of any inability so caused. With the caused itself and inability resulting there from having been removed, the agreed time completion of the respective obligations under this agreement shall stand extended a period equal to the period of delay occasioned by such events.

43.4 Should one or both parties be prevented from fulfilling the contractual obligations by state of force majeure lasting to a period of 6 months or more the two parties, shall each other to decide regarding the future execution of this agreement.

44.0 Local laws, Acts Regulations:

The contractor shall strictly adhere to all prevailing labour laws inclusive at contract labour (regulation and abolition act of 1970) and other safety regulations. The contractors should comply with the provision of all labour legislation including the latest requirements of the Acts, laws, any other regulations that are applicable to the execution of the project.

- i) Minimum wages Act 1948 (Amended)
- ii) Payment of wages Act 1936 (Amended)
- iii) Workmen's compensation Act 1923 (Amended)
- iv) Contract labour regulation and abolition act 1970 and central rules 1971 (Amended)
- v) Apprentice act 1961 (amended)
- vi) Industrial employment (standing order) Act 1946 (Amended)
- vii) Personal injuries (Compensation insurance) act 1 963 and any other modifications
- viii) Employees' provident fund and miscellaneous provisions Act 1952 and amendment thereof Shop and establishment act
- ix) Any other act or enactment relating thereto and rules framed there under from time to time.
- x) Prevailing Indian Electricity rules & act.

45.0 Accidents

The contractor shall immediately on occurrence of any accident at or about the site or in connection with the execution of the work report such accident to the Structural Consultant / consultant. The contractor shall also such report immediately to the competent authority whenever such report is required to be lodged by the law and take appropriate actions thereof.

46.0 The contractors shall be bound to comply the following provision in terms of "Restrictions imposed by the Government of India, Ministry of Finance Department of Expenditure under Rule 144 (XI) of General Financial Rules 2017 vide their order no. F. No 6/18/2019/PPD dated 23rd July 2020" as under;

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender ONLY if the bidder is registered with the Competent Authority (registration committee constituted by the Department for Promotion of Industry and Internal Trade).
- II. Bidder' (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial judicial person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or Office controlled by such person, participating in a procurement process.
- III. 'Bidder from a country which shares a land border with India (such a country)' for this purpose means:
 - a. An entity incorporated, established or registered in such a country; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or

g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above IV. The beneficial owner for the purpose of (iii) above will be as under:

1. In case of A Company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more judicial person, has a controlling interest or who exercises control through other means. Explanation
 - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty five percent of shares or capital or profits of the company;
 - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more judicial person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
3. In case of an unincorporated association or body of Individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more judicial person, has ownership of or entitlement to more than fifteen percent of the property or the capital or profits of such association or body of individuals;
4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

IV. An Agent is a person to do any act for another, or to represent another in dealings with third person.

V. The successful bidder shall not be allowed to sub-contract works to any contractor from country which shares a land border with India unless such contractor is registered with the Competent Authority.

VI. All bidders need to submit a declaration-cum-certificate (along with evidence) in this regard as per "Annexure VI". Failure to submit such valid declaration-cum-Certificate will make the bid liable for rejection."

47.0 Extension of time:

The time allowed for carrying out the work as entered in the agreement shall be strictly observed by the contractor and shall be reckoned from the date of commencement of work. The work shall throughout the stipulated period of contract be proceeded with care and due diligence (time being the essence of the contract) on the part of the contractor. To ensure good progress of the work during the execution, the contractor shall be bound in all cases, by the time schedule submitted by him.

- i) If the contractor shall desire an extension of time for completion of work on the grounds that there having been unavoidable hindrances in execution or on any other ground he shall apply in writing in format enclosed at Annexure VII to the Structural Consultant within 30 days of the hindrance on account of which he desires such extension.
- ii) The Site Engineer/APMC shall consider the application with reference to the reasonableness of the grounds cited therein and the recordings in the Hindrance register maintained at site (Proforma enclosed at Annexure VIII). They shall thereafter forward their comments/recommendations to the Structural Consultants. The Structural Consultants shall refer the case to the Estate Department, GITC of the Bank along with their recommendations.
- iii) The Estate Department, GITC on being satisfied about the reasonableness of the request of the contractors, in terms of the relevant contract conditions, may recommend a fair and reasonable extension of time as per Bank Guidelines for granting extension of time.

- iv) Extension of time shall be granted before expiry of the contract period so that the contract is in force at the time of granting extension of time. Even if the contractor fails to apply for extension of time, the Site Engineer/ Consultants and Structural Consultants shall bring the fact to the notice of the Estate Department, GITC.
- v) While granting extension of time, it shall be clearly stipulated that the extension of time is being given without prejudice to the Bank's right to recover liquidated damages under relevant contract clause.
- vi) The letter granting extension of time is to be issued by the Structural Consultants as per Bank's standard format
- vii) If the contractors fail to complete the work within the stipulated period, the extended time as above or if the delay in completion of the work is attributable to the contractor in any way whatsoever, liquidated damages shall be recovered from the contractor's dues as stipulated in the contract. The authority to decide as to whether liquidated damages are to be levied or not is as per Bank guidelines.

48.0 Substandard works and materials:

The contractors are required to execute all works satisfactorily and according to the specifications.

- i) If any material or work is found to be unsound, imperfect, or inferior, from what is specified in the contract, the contractor shall be advised to rectify or re-execute the work or remove the material as the case may be within a reasonable time depending upon the nature of work. If the contractor fails to do so, the work shall be got redone or rectified or the material replaced through any other agency at the contractor's risk and cost as per the provisions of the contract. The form of letter to be given to the contractor in regard to rectification of defective work and removal of substandard material is to be issued as per Bank's Standard Format.
- ii) Under certain exceptional circumstances, when the substandard work done cannot be rectified or redone because of structural or other constraints, the matter shall be reported to the Structural Consultants and Estate Department, GITC and if it is subsequently decided to accept the said work, payment for such work shall be allowed at a reduced rate arrived at keeping in view the nature and extent of deviation from the specifications or drawings.

49.0 DELINQUENCIES

The under noted delinquencies / defaults / misconduct / misdemeanors on the part of tenderer or enlisted contractor will attract disqualification action.

- ❖ Incorrect information about credentials, about his performance, equipment, resources, technical staff etc.
- ❖ Non-submission of the fresh / latest income tax clearance certificate
- ❖ Irregular tendering practice.
- ❖ Submission of tender containing far too many arithmetical errors and freak rates.
- ❖ Revoking a tender without any valid reasons.
- ❖ Tardiness in commencing work
- ❖ Poor organization at site and lack of his personal supervision
- ❖ Ignoring Bank's notices for replacement / rectification of rejected materials, workmanship etc.
- ❖ Violating any of the important conditions of contract i.e. site facilities, insurance, labour laws, ban on subletting etc.
- ❖ Lack of promptitude and co-operation in measurement of work and settlement of final account.
- ❖ Non-submission of vouchers and proof of purchases etc.

- ❖ Tendency towards putting up false and untenable claims.
- ❖ Tendency towards suspension of work for frivolous reasons.
- ❖ Treatment of labour
- ❖ Bad treatment of sub-contractors (piece workers) and unfussiness like dealings with suppliers of material.
- ❖ Lack of co-operation with nominated contractors of Bank
- ❖ Contractors becoming Bankrupt or insolvent.
- ❖ Contractor's conviction by a Court of Law.
- ❖ Failure to satisfactorily rectify defects during Defects Liability Period (DLP) and discovery of latent defects in contractor's work after the expiry of DLP of his contract.

48.1. DISQUALIFICATION ACTION AGAINST (DELINQUENCIES OF) CONTRACTOR

- ❖ The award of the under noted disciplinary action shall be considered.
- ❖ Placing embargo on issue of tenders or temporary suspension from the Bank's approved list.
- ❖ Permanent ban on issue of tenders and removal from the Bank's approved list.

48.2. PROCEDURE

- ❖ Correspondence on this subject shall be initiated (marked confidential) by the concerned Engineer in charge of project who discovered the contractor's misdemeanors / delinquencies etc.
- ❖ The correspondence shall contain facts and proofs and not mere suspicions.
- ❖ No disqualification action shall be taken against a contractor by an officer below rank of DGM or the authority who have accorded approval for empanelment of pre-qualification.
- ❖ Record of disqualification action taken against contractors shall be maintained in a separate file as also in the concerned contractor's dossier.

50.0 SAFETY CODE:

Safety code to be followed as per para 81 of GCC -

51.0 Observance of Contract Labour Act 1970

Various provisions of the Contract labour Act 1970 and the rules made there under cast certain obligations on the Bank in respect of Bank's Projects under construction at various centers. Under the Act, the AGM/DGM of Estate Department, GITC would be considered as the "Principal Employer", even though the laborers are employed by the building contractor. The Act applies to every establishment in which twenty or more workmen are employed or were employed on any day of the preceding 12 months as contract labour. A workman shall be deemed to be employed as contract labour in connection with the work of an establishment when she/he is hired in connection with such work through a contractor with or without the knowledge of the principal employer.

However, in the cases of package deal agreements, it would not apply until the builder/vendor is deemed to be a contractor after execution of Deed of Conveyance, if so provided in the agreement. The Act also does not apply to the work of gardening, maintenance of residential colonies and services therein. Such arrangements need not be included in the records to be maintained under the Act and rules made thereunder. During the construction of a project the "Principal Employer" shall comply with certain provisions of the Act in so far as they are applicable to the particular case. These provisions relate to-

50.1. Registration of Establishment (Section 7).

The principal employer shall make an application to the registering officer in the prescribed manner for registration of establishment. The application for registration shall be made in triplicate in Form No.1 (Ref. Annexure XII) to the registering officer of the area in which the establishment sought to be registered is located. The application shall be accompanied by the Treasury receipt showing payment of fees for the registration of the establishment. The

application shall be either personally delivered to the registering officer or sent to him by registered post. The employer can not employ the contract labour in his establishment unless he registers under Section 7 of the Act.

50.2. Maintenance of registers and other records (Section 29).

The following registers and records are required to be maintained by the Principal Employer:

- a) Register of contractors in Form XII of the Contract Labour (Regulation & Abolition) Control Rules 1971 (Refer Annexure-XIII).
- b) Notice showing the rates of wages, hours of work, wage period, dates of payment of wages, names and address of the Inspectors having jurisdiction and date of payment of unpaid wages, shall be displayed in English and in Hindi and in local language, in conspicuous places at the work site.
- c) Return intimating the actual date of the commencement or completion of each contract work, under each contractor, shall be submitted to the Inspector within 15 days from the commencement or completion of the work as the case may be. The return shall be filed in Form No.VI B (Refer Annexure XIV)
- d) The annual return in duplicate in Form No. XXV (Annexure XV) shall be submitted to the Registering Officer concerned so as to reach him not later than the 15th February following the end of the year to which it relates.

All the registers, records and notices shall be produced on demand before the Inspector or any other authority under the Act.

50.3. Responsibility of payment of wages of workmen (Section 21).

Every principal employer shall nominate a representative duly authorized by him to be present at the time of disbursement of wages by the contractor and it shall be the duty of such representative to certify the amounts paid as wages in the prescribed manner. The authorized representative shall record under his signature, a certificate at the end of the entries in the Register of wages or in the Register of wage and Muster Roll, in the following form.

"Certified that the amount shown in Column No. ____ has been paid to the workmen concerned in my presence on _____ at _____."

The Contractor shall be advised to disburse the wages in the presence of the authorized representative. If the contractor fails to make payment of wages within the prescribed period or makes short payment, the principal employer shall be liable to make payment of wages in full or the unpaid balance due to the contract labour employed by the contractor and recover the amount so paid from amounts payable to the contractors.

50.4. Welfare measures (Sections 16 to 19)

The welfare measures like canteen, rest rooms and other facilities to the contract labour are required to be provided by the contractor himself, but if any of the facilities is not provided by the contractor, then it shall be provided by the employer within 7 days of the commencement of the employment of contract labour. However, all expenses incurred by the Bank in providing the amenity shall be recovered from the Contractor either by deductions from any amount payable to the contractor or as a debt payable by the contractor.

50.5. Penalty for contravention (Section 22 to 27).

- a) Whoever obstructs an Inspector in the discharge of his duties under the Act or refuses or willfully neglects to afford the Inspector any reasonable facility for making any inspection, examination, enquiry or investigation authorized by or under the Act in relation to an establishment, shall be punishable with imprisonment for a term which may extend to 3 months or with fine which may extend to Rs.500/- or with both.
- b) The contravention of any provision of the Act or of the rules made thereunder or contravention of any condition of a license granted under the Act is punishable with imprisonment which may extend to 3 months or with fine which may extend up to Rs.1000/- or with both.

- c) The Site Engineer/ Consultants shall ensure that all the obligations under the relevant provisions of the Act including obtaining licenses by the contractor under Section 12 of the Act are complied with. Before releasing the contractor's final payment, they shall also ensure that the contractors have paid all dues to their contract labour.

Note: The contractor has to meticulously comply with para 50 & Annexures (XII to XV) about the Observance of Contract Labour Act 1970 and its updated version/ amendments time to time.

ANNEXURE-XII

FORM I: FORMAT OF APPLICATION FOR REGISTRATION OF ESTABLISHMENT EMPLOYING CONTRACT LABOUR:

Sr. No.	Description	Details
1	Name and location of the Establishment.	
2	Postal address of the Establishment.	
3	Full name and address of the Principal Employer. (furnish father's name in the case of individuals)	
4	Full name and address of the Manager or the person responsible for the supervision and control of the Establishment.	
5	Nature of work carried on in the Establishment.	
6	Particulars of Contractors and Contract Labour:	
(a)	Names and address of the Contractors	
(b)	Nature of work in which contract labour is employed or is to be employed.	
(c)	Maximum number of contracts labour to be employed any day through each Contractor.	
(d)	Estimated date of commencement of each contract work under each Contractor.	
(e)	Estimated date of termination of employment of contract labour under each Contractor.	
7	Particulars of Treasury Receipt enclosed. (Name of the Treasury, Amount and Date)	

I hereby declare that the particulars given above are true to the best of my knowledge and belief.

Principal Employer

Seal and Stamp

.....

ANNEXURE- XIII

FORM XII: FORMAT OF REGISTER OF CONTRACTORS

1.Name and addresses of the Principal Employer : _____

2.Name and address of the Establishment : _____

Sr. No	Name and address of the contractor	Nature of work on contract	Location of contract work	Period of contract from to	Maximum number of workmen employed by the contractor
1.					
2.					
3.					
4.					
5.					

ANNEXURE- XIV

FORM VI-B: FORMAT OF NOTICE OF COMMENCEMENT/COMPLETION OF CONTRACT WORK:

1. Name and Principal Employer & address.
2. No. and Date of certificate of registration
3. I / We hereby intimate that the contract work _____ (Name of work) given to _____ (Name and address of the contractor) having License No. _____ dated _____ has commenced/has been completed with effect from _____ (date)/ on _____ (date).

Signature of the Principal Employer

The Inspector,

ANNEXURE- XV

FORM XXV: FORMAT OF ANNUAL RETURN OF THE PRINCIPAL EMPLOYER TO BE SENT TO THE REGISTERING OFFICER:

Sr. No		Year ending 31st December
1	Full name and address of the Principal employer	
2	Name of the Establishment. (a) District (b) Postal Address (c) Nature of operation/industry/work carried on	
3	Full name of the Manager or person responsible for supervision control of the Establishment.	
4	Number of Contractors who worked in the Establishment during the year (Given details as per proforma below).	
5	Nature of work/operations on which contract labour was employed.	
6	Total number of days during the year on which contract labour was employed.	
7	Total number of man days worked by contract labour during the year.	
8	Maximum number of workmen employed directly on any day during the year.	
9	Total number of days during the year on which direct labour was employed.	
10	Total number of man days worked by directly employed workmen.	
11	Changes, if any, in the management of the establishment, its location or any other particulars furnished to the Registering Officer in the application for Registration indicating also the dates.	

Place : _____

Date : _____

Principal Employer

Name :

52.0 Program charts and Progress Report:

- i) As soon as the contract is awarded, a suitable program of work, preferably in the form of a bar / PERT chart shall be drawn up for completion of the different stages of the work, so as to ensure its completion within the allotted period of time. This program shall be submitted by the contractor in consultation with Structural Consultant/STRUCTURAL CONSULTANT or Site Engineer.
- ii) The monthly progress chart as given in annexure-X indicating there in the programme and progress achieved both physical and financial with reasons for short fall, if any, shall be sent by the Site Engineer/STRUCTURAL CONSULTANT to concerned Department of the Bank before 10th of the following month.

53.0 Co-ordination and Monitoring:

- i) It is the prime responsibility of the Structural Consultants to ensure that execution of the work progresses smoothly in accordance with the programme and in proper co-ordination among different agencies.
- ii) The Structural Consultants shall keep a close watch on the progress of work, the resources position etc. and take suitable timely remedial measures to sort out the bottlenecks in consultation with the concerned Department of the Bank.
- iii) Site meetings shall be held at periodical intervals at least once in a month or at closer intervals where Structural Consultant/Site Engineer/Bank's Engineer and the representatives of various agencies who are involved in the project shall attend and review the progress of work and sort out hindrances, if any.
- iv) Concerned Project Engineers/A.G.M./DGM shall attend site meetings as often as possible in the interest of expeditious progress of the work. Minutes of the site meetings shall be prepared by the Structural Consultants and furnished to the concerned Department and others concerned immediately after of holding such meeting.
- v) In terms of the contract provisions, the contractors for general building work are required to submit progress photographs (in triplicate) at the beginning of each month. The photographs shall be so taken in such a manner so as to give a fair idea of progress of construction and the date of photographs taken shall be written on the reverse.
- vi) As a faster means of coordination and monitoring, the use of advanced technology may be used.

54.0 Testing of materials and approval:

- i) To ensure use of quality materials and to exercise proper quality control on the works, certain tests are to be undertaken regularly by the contractor during the progress of the work as per the provisions of the contract. Some of the important tests that are to be carried out on the construction materials are such as water, steel, bricks, cement, tiles, timber, particle boards, aggregates, pipes, fittings, concrete, wires/cables, M.S. sheets, conduits, earth pits and these shall be conducted as per the relevant BIS specifications/agreement at the Government approved Technical Institutes/Laboratories. Report on these tests shall be forwarded to the Structural Consultants/STRUCTURAL CONSULTANT who shall duly certify the results thereof are in order and the materials may be used in the work. If the results do not conform to the relative BIS, the Structural Consultants shall take immediate appropriate action as per terms of contract.
- ii) Results of all concrete cube tests shall be recorded in a Register of Cube Tests as per Annexure XI maintained at site in a register and signature of the contractors and Site Engineer/ Consultants be obtained.

- iii) Under the terms of contract, the contractors are required to submit samples of various materials, items, fittings etc. for the approval of the Bank and Structural Consultant. For this purpose, special site meetings shall be arranged in the initial stage of project execution. As far as possible, the materials of brand names, if any, given in the contract shall only be selected.

55.0 Site order book:

- i) For issuing instructions to contractors in the course of day to day supervision of works, site order book shall be maintained by the Site Engineer/ Consultants in a prescribed form (Refer Annexure XVI). Instructions should be prepared in triplicate and serially numbered. A copy of these instructions can be given to the contractor and Structural Consultant for necessary action. While issuing such instructions, the contractor/his authorized representatives' signature shall be obtained on the office copy.
- ii) Instructions in the site order book shall be recorded under the signature of the Site Engineer/ Consultants. The Bank's Engineer during his periodical inspection/visit shall peruse and record his instructions, if any, in this book.
- iii) All instructions to the contractors which are at variance with tender provisions as also pointing out lapses on the part of the contractors to adhere to the tender specifications shall be issued in writing through site order book by the Site Engineer/ Consultants as well as Structural Consultant and Bank's officials visiting the site.
- iv) The site order book shall be kept in the custody of the Site Engineer/ Consultants at site. This fact shall be made clear to the contractors at the beginning of the work.
- v) The site order book shall be referred to at the time of making final payments to the contractors.
- vi) The site order book shall be preserved for a period of 5 years or up to the time of all disputes/arbitration cases of the work are finally settled, whichever is later, after completion of a work in the same manner as a M.B.

56.0 Hindrance Register:

In order to have a record of hindrance in the progress of work which may result in delays and consequent claims from the contractors for extension of time a Hindrance Register shall be maintained at the construction site. The details of hindrances with time period shall be recorded by the Site Engineer/ Consultants therein when these occur and all recordings shall be signed jointly by the Site Engineer/ Consultants and the contractor's representative. The extract of the same shall be sent to the Estate Department, GITC. While considering the contractor's request for extension of time for completion of work, this register shall be referred to.

57.0 Site Register:

The following registers are to be maintained at site office:

- a) Daily Progress record
- b) Site order book
- c) Cement and steel register (Receipts, consumption, balances).
- d) Register of drawings and working details.
- e) Log book of defects.
- f) Test reports of building materials.
- g) Sand bulkage register/silt content register.
- h) Daily labour register.
- i) Variation order register.
- j) Hindrance register

These registers and a set of latest drawings shall be kept in the safe custody of the Site Engineer/Structural Consultant.

Other than above registers, more may be required to be maintained at site as per project requirements.

58.0 BANK'S BUILDING PROJECTS – MAINTENANCE OF RECORDS

A.	Registers at the site office of the Bank's Engineer:
1	Measurement Books.
2	Cement Register (Daily Record).
3	Steel Register.
4	Steel Consumption Register – Bill wise.
5	Drawings register
6	Materials at site register.
7	Hindrance Register.
8	Concrete cube Test Register.
9	File and Register for extra / variation items.
10	Materials test Register and File.
11	Site Order Book (in triplicate).
12	Lead caulking Register.
13	Labour Reports and progress Reports Register.
14	Site Visit & Instructions Register.
15	Certified true copies of the contracts.

ANNEXURE VI

Declaration-Cum- Certificate on the Letter Head of Bidder Regarding Restrictions on Procurement from Bidders from A Country or Countries, On Grounds of Defence In India, Or Matters Directly Related Thereto, Including National Security.

Restrictions under Rule 144 (XI) of General Financial Rules 2017 of Ministry of Finance, India order no. F. No 6/18/2019/PPD dated 23rd July 2020

I/We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India;

I/We, the bidder (Specify full name -----)

Certify that we are NOT from such a country OR, if from such a country, has been registered with Competent Authority.

I/We hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

(Signature of Authorized Signatory along with Seal)

Name of authorized signatory :

Designation of Authorized signatory :

List of Evidence enclosed :

1. Copy of certificate of valid registration with the Competent Authority (Score out if not Applicable)
2.
3.

ARTICLES OF AGREEMENT

Agreement for _____ Between State Bank of India And _____

Date of Commencement: _____

THIS Agreement is made on ____day of2023 (hereinafter referred to as "**Agreement**") by and between State Bank of India, a corporation incorporated under State Bank of India Act 1955 having its Global IT Centre at Sector 11, CBD Belapur, Navi Mumbai, Maharashtra, India 400614 through F&OA Department, Estate Department (hereinafter referred to as the "**Bank/SBI**") and which expression shall unless repugnant to the context, mean and include its successors and assigns,

And

M/s_____ incorporated under the Companies Act 1956 having its registered Office at_____ <Please provide address of the Service Provider> (hereinafter referred to as the "**Service Provider / Contractor/ Agency**") which expression unless repugnant to the context shall mean and include its successors and permitted assigns.

SBI and M/s_____ are each sometimes referred to individually as a "Party" and together as the "Parties."

WHEREAS, the Bank is desirous for_____ <name of services>. as described in the Request for Proposal (read with its corrigendum and clarifications) No. _____ dated _____ (hereinafter referred as "**RFP**" and annexed as **Annexure-A**):

- i) Work Order No.....dated _____ (hereinafter referred as "**PO/ Work Order**" and annexed as **Annexure-B**) and the same shall be part of this Agreement;
- ii) _____; and

Service Provider has agreed to provide the product/services as may be required by the Bank under the RFP.

NOW THEREFORE, in consideration of the mutual covenants, undertakings and conditions set forth below, and for other valid consideration the acceptability and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. COMMENCEMENT & TERM:

- 1.1 This Agreement shall commence from its date of execution mentioned above/ deemed to have commenced from _____ (**Effective Date**).
- 1.2 This Agreement shall be in force till acceptance and approval of Complete Project Closure Report as per clause no 1.1.11 of General Conditions of Contract of the RFP unless terminated by the Bank by notice in writing in accordance with the termination clauses of the RFP.
- 1.3 Unless terminated earlier in accordance with this Agreement, the Agreement shall come to an end on completion of the term specified in the Agreement or on expiration of the renewed term.

2. SCOPE OF SERVICES:

The scope is defined in the RFP and PO

3. FEES, TAXES DUTIES & PAYMENTS:

3.1. Service Provider shall be paid fees and charges in the manner detailed in RFP and PO, the same shall be subject to deduction of income tax thereon wherever required under the provisions of the Income Tax Act by the Bank. The remittance of amounts so deducted and issuance of certificate for such deductions shall be made by the Bank as per the laws and regulations for the time being in force. Nothing in the Agreement shall relieve Service Provider from his responsibility to pay any tax that may be levied in India on income and profits made by Service Provider in respect of this Agreement.

3.2. _____

3.3. _____

3.4. Payments

3.5. The payment for the works to be executed under this Agreement shall be made as described under RFP and PO.

4. MISCELLANEOUS:

4.1. Any provision of this Agreement may be amended or waived, if, and only if such amendment or waiver is in writing and signed, in the case of an amendment by each party, or in this case of a waiver, by the Party against whom the waiver is to be effective.

4.2. No failure or delay by any Party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

4.3. If this Agreement is signed in counterparts, each counterpart shall be deemed to be an original.

4.4. Service Provider agrees that they shall not use the logo, trademark, copy rights or other proprietary rights of the Bank in any advertisement or publicity materials or any other written communication with any other party, without the prior written consent of the Bank.

5. ENTIRE AGREEMENT

5.1. This Agreement constitutes the entire agreement between the Parties with respect to the subject matter hereof and supersedes all prior written agreements, undertakings, understandings and negotiations, both written and oral, between the Parties with respect to the subject matter of the Agreement, except which are expressly annexed or attached to this Agreement and saved by this Agreement. No representation, inducement, promise, understanding, condition or warranty not set forth herein has been made or relied upon by any Party hereto.

5.2. The following documents along with all addenda issued thereto shall be deemed to form and be read and construed as integral part of this Agreement and in case of any contradiction between or among them the priority in which a document would prevail over another would be as laid down below beginning from the highest priority to the lowest priority:

5.2.1. This Agreement;

5.2.2. RFP

5.2.3. Purchase Order/Work Order

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date and day first mentioned above.

State Bank of India

M/s.....

By _____
Authorized Signature

By _____
Authorized Signature

Name _____

Name _____

Designation _____

Designation _____

Date: _____

Date: _____

Witness: _____

Witness: _____

APPENDIX HEREIN BEFORE REFERRED TO

Sr. No.	Particulars	Details
1	Name of the organization Offering Contract:	The Dy. General Manager (F & OA), Estate Dept., State Bank Global IT Centre, 1st Floor, "C" Wing, Sector 11, C.B.D. Belapur, Navi Mumbai – 400614.
2	Project Management Consultants / Consultants	M/s. CREATIVE CONSULTANTS , 335, Kuber Complex, Opp. Laxmi Indl. Estate, New Link Road, Andheri (W), Mumbai-400053.
3	Site Address	Building No.C-01 & C-02 of SBI Residential Colony located at Sector-13, Nerul, Navi Mumbai
4	Scope of Works	Work as per Clause No. 1 of NIT & as mentioned in Price Bid
5	Name of the Contractor	
6	Address of the Contractor	
7	Period of Completion	As per clause 2 of NIT.
8	Earnest Money Deposit	of the amount as per Clause No. 3 of NIT by means of (mode of Transaction) NEFT, RTGS and intra-bank transfer (SBI to SBI only), as per details mentioned in para 4.6, of Information and Instruction for Bidders
9	Security Deposit (SD) / Retention Money	As per Part B - Point 6 of Information and Instruction to Bidders. A
10	Defects Liability Period	As per Clause No. 1.1.11 (a) of GCC.
11	Insurance to be undertaken by the:	As per Clause 25 of GCC.
12	Liquidated damages:	As per Clause No 8 of GCC.
13	Value of Interim Bill (Min.):	As per clause 15 of NIT. As per Clause no. 15 of NIT.
14	Date of Commencement	As per Clause 26 of GCC.
15	Period of Final measurement	As per Clause 22 of GCC.
16	Initial Security Deposit:	As per clause no. 1.2 (b) of GCC.
17	Total Security Deposit: As per clause No.	1.2 of GCC
18	Refund of Total Security Deposit Comprising of EMD and ISD	This Retention amount shall be released by the SBI in Two stages i.e. 50% of Security

		Deposit be released after issuing of VCC and remaining 50% shall be released after completion of Defect Liability Period and Completion of Project Closure report from SBI and STRUCTURAL CONSULTANT (para 1.1.11 of GCC) whichever is later and provided no complaint is received or the defects has been rectified by replacing the same satisfactorily.
19	Period for Honoring Certificate	<ol style="list-style-type: none"> 1. One Month for R.A. Bills 2. The final bill will be submitted by the Contractor within one month of the date fixed for completion work and the Bill shall be Certified as per Clause 22 of GCC provided the bills are submitted with all pre-requisite documents, compliances of Statutory Authorities, test reports, etc. prescribed in the tender.

Signature of Tenderer.

Date:

SPECIAL CONDITIONS OF CONTRACT (SCC)

GENERAL:

1. Unless otherwise specified, IS Codes, NBC Guidelines, CPWD Specifications 2019 volume I - II with correction slips up to 28.02.2023 shall be followed. Any additional item of work, if taken up subsequently, shall also conform to the relevant IS Code, CPWD specifications mentioned above. Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work and I.S. Codes etc., the following order of preference shall be observed;
 - i) Minimum specification and standards, Tender Drawings, Schedule of Quantities
 - ii) Particular Specifications, Special Conditions
 - iii) CPWD Specifications.
 - iv) Indian Standard Specifications of BIS
 - v) National Building Code 2016 with up-to-date amendments
 - vi) Sound engineering practices as per directions of the Consultants /SBI
2. The work shall be carried out in accordance with the structural drawings & MEP drawings, relevant codes, specifications etc. before commencement of any item of work, the contractor shall correlate all the relevant Structural Consultant and structural drawings issued for the work and satisfy himself that the information available therein is complete, suitable and unambiguous. The discrepancy, if any, shall be brought to the notice of the Consultants /SBI before execution of the work, the contractor shall be solely responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information. The Consultants /SBI, in no case, shall be held responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastage, bottlenecks etc. likely during execution of work and acts of coordination which may be required. Nothing extra shall be payable on this account.
3. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred. There may be several incidental works, which are not mentioned in the scope of work but will be necessary to complete the item in all respect. All these incidental works/ costs which are not mentioned in specifications / drawings / tender document but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Consultants /SBI. Nothing shall be payable on the account of incidental works.

4. If any further details/elaboration or any miscellaneous clarifications etc. to the attached drawings required to the contractor for execution of work, the same may be asked by the contractor at least one month prior to its requirement so that consultant of the work may provide within a month to him. No hindrance shall be given on this account. Requirement of more Elaboration/detailing/Miscellaneous Drawings as required by contractor and provided by the consultant/department shall not mean change of Scope of Work etc. and for that nothing extra shall be payable to contractor.
5. In the event of any variation/ discrepancy in the drawings, specifications and tender Documents etc. the decision of the Consultants /SBI shall be final binding and conclusive on the contractor and in the case the contractor have any doubt and the same should be got clarified immediately from the Consultants /SBI and no claim of the contractor shall be entertained thereafter. Moreover, the agency is not allowed to take benefit out of any clerical/ grammatical mistake in the standard clauses/Specifications etc. being used in the agreement.
6. 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, in case any damages to such existing services take place the same shall be rectified by the contractor at his own expense to the satisfaction of the Consultants /SBI. 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.
7. 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 theft/ pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department.
8. The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, preparatory works, working during monsoon, working at all depths, height, lead, lift and location and any other incidental works required to complete this work.
9. Any legal or financial implications resulting out of disposal of earth shall be carried out by the contractor at his own cost. Nothing extra shall be payable on these accounts
10. The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by local body and any other statutory bodies shall be adhered by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities.
11. The cost of water for construction and labours (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent charges shall be borne by the contractor. All statutory taxes, levies, charges

(including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor.

12. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority for labour licenses, registration with EPFO, ESIC and BOCW Welfare Board etc. and shall pay to such authority all the fees, cess, labour cess, etc. that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.
13. All payments or fees related to all works shall be payable to Government/ Local Body including statutory payments demanded either in the name of Customs Department Contractor for obtaining the various applicable permissions/ all required and applicable Approvals/licenses like CFO approvals, excavation approval, Certificate and making and getting all permanent civil and E & M service connections, Payments payable to electrical supply company etc. for the scope of this work shall be borne by the Contractor. No extra payment shall be done to Contractor on this account.
14. Royalty at the prevailing rates shall be paid by the Contractor on all materials such as boulders, metals, sand and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned.
15. No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained.
16. The Contractor shall carry out his work so as not to interfere with or hinder the progress of the work being carried out by any other agency. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence
17. If the work is carried out in more than one shift or during night, no claim on this account shall be entertained. The agency must take permission from the police authorities etc. if required for work during night hours, no claim / hindrance on this account shall be considered if work is not allowed during night time.
18. The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the SBI from any and all damages and claims that may arise on any account. The Contractor shall indemnify the SBI against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, residents, visitors, other agencies/vendor's workers, etc. at SBI GITC office at Sector 11, CBD Belapur & their vehicles in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising

from such claims and shall indemnify the SBI in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

19. The Contractor shall make all necessary arrangements for protection from rains, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters, protections etc.
20. In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any.
21. The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Consultants /SBI. The Contractor shall use such methodology and equipment for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Consultants /SBI any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Consultants /SBI. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get first-hand information of site constraints. They should quote their rates accordingly.
22. The quoted rates shall also be inclusive of all ancillary/enabling and incidental works required for execution of work like labour camp, stores, site offices, watch and ward, temporary structure for plants and machineries, scaffolds, H frames, Props, Spans, Cup lock system, Safety Platforms, Covering external scaffold with green shade nets, polypropylene sheets to avoid direct fall of any materials from higher side, Safety equipment, vehicles, water storage tanks, arrangement for temporary connection for electricity, telephone, water etc. including their consumption charges, protection works, barricading or any other activity which is necessary for execution of work and as directed by Consultants /SBI. Before start of the work, the Contractor shall obtain approval of the Consultants /SBI, before locating various temporary structures/ site office, positioning of machinery, material yard, cement and other storage, water tank, etc.

23. The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable, at his site office.
24. The Contractor shall cooperate with and provide facilities to the sub- Contractors and other agencies working at site for smooth execution of the work. The Contractor shall
- i) Properly co-ordinate his work with the work of other agencies.
 - ii) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
 - iii) Provide electricity at mutually agreed rates.
 - iv) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
 - v) Adjust his work schedule and site activities in consultation with the Consultants /SBI and other Contractors to suit the overall completion schedule.
 - vi) Resolve the disputes with another Contractor amicably and the Consultants /SBI shall not be made intermediary or arbitrator. The contractor shall indemnify the SBI against any claim(s) arising out of such disputes.
 - vii) In case of variation / conflicting provisions is observed in any condition of bid document forming part of contract, the decision of tender accepting authority shall be final and binding on the contractor
25. As Built Drawings
- i) For the drawings issued to the contractor by the Consultants. The Consultants will issue two sets of drawings to the Contractor for the items for some changes have been made. From the approved drawings as instructed by the SBI / Consultants the contractor will make the changes made on these copies and return these copies to the Consultants for their approval. In cases revision is required or the corrections are not properly marked the Consultants will point out the discrepancies to the contractor. The contractor will have to incorporate these corrections and / or attend to discrepancies either on copies as directed by the Consultants and resubmit to him for approval. The Consultants will return one copy duly approved by him.
 - ii) For the drawings prepared by the contractor
26. The contractor will modify the drawing prepared by him wherever the changes made by the SBI / STRUCTURAL CONSULTANT and submit two copies of such modified drawings to the STRUCTURAL CONSULTANT for approval. The STRUCTURAL CONSULTANT will return one copy of the approved drawing to the contractor.
27. SUFFICIENCY OF TENDER
- The Tenderer shall be entirely responsible for sufficiency of rates quoted by him in his tender.
- Sufficiency of tender prices: Subject to any provisions laid down in the tender document, the Contractor shall be deemed to have satisfied himself before submitting his tender as to the correctness and sufficiency of the tender and to have taken account of all that is required for the full and proper execution of the contract and to have included in his rates and prices all costs related to the completion of work.
28. PROGRAM /SCHEDULE

The Contractor shall prepare an integrated programme chart within three days of issue of award letter including Civil as well as E & M activities 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 and submit the same for approval of the STRUCTURAL CONSULTANT /SBI. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The integrated programme chart so submitted should not have any discrepancy with the physical milestones attached in the contract agreement. The programme chart should include the following:

- i) Descriptive note explaining sequence of various activities.
 - ii) Construction Programme prepared on PRIMAVERA/MS Project Software, which will indicate resources in financial terms, manpower and specialized equipment for every important stage. One planning engineer should be engaged in project who is familiar in PRIMAVERA/MS Project software. No extra payment shall be made in this regard to the contractor.
 - iii) Programme for procurement of materials by the contractor.
 - iv) Programme for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.
 - v) Programme of procurement of machinery/equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
 - vi) Programme for achieving fortnightly micro milestones and periodic milestones.
29. In case of noncompliance/delay in compliance in this, a recovery amount as specified in Schedule will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.
30. If at any time, it appears to the STRUCTURAL CONSULTANT /SBI that the actual progress of work does not conform to the approved programme referred above, the contractor shall produce a revised program within seven days showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time. A recovery of amount/Penalty as specified shall be made in case of delay as per
31. The submission for approval by the STRUCTURAL CONSULTANT /SBI of such programme 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 STRUCTURAL CONSULTANT /SBI to take action against the contractor as per terms and conditions of the agreement.
32. **QUALITY ASSURANCE & TESTING OF MATERIALS**
The contractor shall arrange testing of material from NABL approved labs from time to time at his cost including packaging & forwarding of samples for outside laboratory tests and for maintaining test records. All the registers of tests carried out at site or in outside laboratories shall be maintained by the contractor. The test instructions shall be given to the contractor by

the STRUCTURAL CONSULTANT /SBI. All the entries should be mentioned in the test register will be made by the designated engineer of the contractor and same shall be regularly reviewed by the STRUCTURAL CONSULTANT /SBI or his authorized representatives at site.

33. The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the list attached with the tender documents, as per the conditions and specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, when any of the preferred make is not available. This is, however, subject to documentary evidence produced by the contractor regarding non availability of the preferred brand and also subject to independent verification by the STRUCTURAL CONSULTANT /SBI. In exceptional cases, where such approval is required, the decision of STRUCTURAL CONSULTANT /SBI as regards equivalent make of the material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Also, the sample work/ material shall be procured only after obtaining written approval of the STRUCTURAL CONSULTANT /SBI.
34. All materials shall be got checked by the STRUCTURAL CONSULTANT /SBI or his authorized supervisory staff on receipt of the same at site before use.
35. The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor. The Contractor or his authorized representative shall remain in contact with the STRUCTURAL CONSULTANT /SBI or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained from the Contractor.
36. All the hidden/Buried/ Concealed items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering.
37. Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to bylaws and municipal body/ corporation where Specifications are not available.
38. BIS/ISI marked materials except otherwise specified shall be subjected to quality test at the discretion of the STRUCTURAL CONSULTANT /SBI 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 agency shall, if required, by the STRUCTURAL CONSULTANT /SBI, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material / procured by the agency for incorporation in the work satisfies the provisions of specifications / BIS codes relevant to the material and / or the work done.
39. The contractor shall procure the required materials in advance so that there is sufficient time to testing of the materials and clearance of the same before use in the work.
40. The contractor shall supply free of charge the materials required for testing including packing and transportation to testing laboratory. The testing of materials shall be conducted in Govt. Laboratory/ Govt. colleges/ IITs/NITs or from the laboratory approved by STRUCTURAL CONSULTANT /SBI the charges for testing of materials shall be borne by the Contractor.

41. All expenditure to be incurred for testing of samples e.g., packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor in all cases irrespective of testing results.
42. Contractor shall submit minimum "Quality Assurance" plan within 45 Days after award of work which shall be consisting of Lot size, number of required tests and frequency of testing.
43. While deciding these criteria Tender Specifications & Provisions of BIS Codes and Standard Practices may be referred. Volume of work, Practical Difficulties and Site Conditions etc. may also be kept in view. The lot size, number of tests and frequencies of testing can be altered or modified by the STRUCTURAL CONSULTANT /SBI from the prescribed limits.
44. It should clearly indicate the Machinery and other Tool & Plants required to be deployed at site by the agency. Entire Machinery and T&P may not be required at the start of work, therefore, a proper time schedule by which each Machinery & T&P is to be brought at site should also be indicated.
45. The Contractor shall allow access to Third Party Quality Assurance (TPQA) Agency if any appointed by SBI which required to visit the site to have a control on quality and methodology of execution. Samples of materials including Cement Concrete Cubes shall be taken jointly by Contractor and STRUCTURAL CONSULTANT /SBI or his authorized representative. All arrangements for transporting and getting them tested shall be made by the Contractor.
46. All material received at site shall be entered in MAS Register and copy of Supply order, Manufacturer's Test Certificate & Bill-invoice shall be maintained in order.
47. The MAS Registers, Cement Register, Steel Register, Paint and Chemical Register, Bitumen Register, Test Register etc. shall be maintained by a qualified staff of Contractor which may be inspected by STRUCTURAL CONSULTANT /SBI or his/her representative at any time. The daily report of receipt of material shall be sent to Project Manager / Project Structural Consultant of STRUCTURAL CONSULTANT or his/her representative.
48. The safe custody of all registers shall be the responsibility of Contractor. Submission of copy of all test registers and Material at Site Register along with each alternate Running Account Bill and Final Bill shall be mandatory.
49. As and when any important item is taken up for execution, the Contractor shall submit the specifications and develop a checklist and Pour card. This sample checklist should be got approved from the
50. STRUCTURAL CONSULTANT /SBI and should be used at site. This check list should be shown to the STRUCTURAL CONSULTANT /SBI or his/her representative during inspection. This procedure is to be followed for all hidden items, CC/RCC work, Steel-reinforcement, shuttering, flooring, doors & windows, plumbing, including water supply pipe lines, roof treatment, earth filling etc.
51. In addition, the contractor shall submit theoretical consumption statements for the items involving use of cement, steel reinforcement, chemical, paints, ready mix concrete, bitumen

etc. as directed by the STRUCTURAL CONSULTANT/SBI along with every running account bill for record and reconciliation of material issued, consumed and balance.

52. These measurements shall then be 100% checked & verified by the authorized representatives of the STRUCTURAL CONSULTANT. Subsequently measurements shall be checked by SBI engineer as per SBI guidelines along with STRUCTURAL CONSULTANT. The contractor shall incorporate all such changes or corrections, as may be done during these checks, to his draft computerized measurements and submit the corrected computerized measurement Books with its pages machine numbered to the STRUCTURAL CONSULTANT /SBI.
53. The Computerized Measurement Book shall be allotted a serial number as per the Register of Computerized Measurement Books and processed for payment.

59.0 WATERPROOFING WORKS

The Contractor has to submit 10 Yr. Guarantee bond for all Water proofing works executed on site and in addition to Security Deposit additional 2.5% security deducted for completed work of the respective waterproofing work based on the cost of work executed. This security Deposit shall be released after satisfactory compliance of this 10 Yr. Period. BG shall not be entertained for it.

Note: Interest shall not be paid on any security deposit, retention amount, etc., whatsoever be the duration of it.

60.0 CLEANLINESS OF SITE

The Contractor shall not stack building material / malba / muck on the land or road of the local development authority or on the land owned by the others. The site of work shall be always kept clean. The Contractor shall take all care to prevent any water- logging at site. The waste water, slush etc. shall not be allowed to be collected at site. It may be directly pumped out to public drainage system with the prior approval of the concerned authorities at his cost. The work shall be carried out in such a way that the entire area is kept clean and tidy.

61.0 SECURITY & TRAFFIC ARRANGEMENTS

- i) In event of any restriction being imposed by the Department, traffic or any other statutory authority having control over the project, on the working or movement of Labour, materials, etc., the Contractor shall strictly follow all such restrictions or instructions issued regarding the same and nothing extra shall be payable to the Contractor on account of such restrictions or instructions. No delay or claims of any kind shall be entertained from the Contractor on this account.
- ii) The Contractor shall be wholly responsible for security of site and works. The Contractor shall be not permit entry of any unauthorized persons in the Site; and entry shall be limited to the Employees of the Contractor, Sub Contractor or persons authorized by the STRUCTURAL CONSULTANT /SBI
- iii) Lighting: The contractor shall provide sufficient lighting at project site, during periods of insufficient natural light, if required.

62.0 PHOTOGRAPHY & VIDEOGRAPHY DOCUMENTATION:

The Contractor shall undertake and carry out documenting the total sequences of this project by way of photography, slides, video recording (including drone recording after due approval from Local Authorities if required) etc. at his cost. The original photographs and videos shall be the property of the SBI. No copy shall be prepared by the contractor without prior approval of the STRUCTURAL CONSULTANT /SBI. In all cases the photography shall be taken at minimum of 2 weeks interval and videography at a minimum of 4 weeks interval. The said soft copies shall be shared by pen drive and also be stored in Hard disc of requisite capacity at site. The positive of photographs in 4" x 6" size should be sequentially documented in album. All should be kept securely at site/ SBI office.

63.0 CONDITIONS WHEN REINFORCEMENT STEEL TO BE PROCURED BY CONTRACTOR

- i) The reinforcement steel used in foundation up to 1st Slab shall be fusion bonded minimum 200-micron thick epoxy coating with necessary development length as per relevant code shall be adopted to achieve the required bond strength between reinforcement and concrete.
- ii) The agency shall procure steel reinforcement as per approved list of makes given in this document and directions given by SBI from time to time.
- iii) The contractor shall have to obtain and furnish test certificates to the STRUCTURAL CONSULTANT /SBI in respect of all supplies of steel brought by him to the site of work.
- iv) Samples shall also be taken and got tested by the STRUCTURAL CONSULTANT /SBI as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer- in-Charge/SBI to do so.
- v) The steel reinforcement bars shall be brought to the site in bulk supply of 10 tons or more, or as decided by the STRUCTURAL CONSULTANT /SBI.
- vi) The steel reinforcement brought on site shall be of straight bars only and no bent bars are allowed on site and nothing extra shall be paid to Contractor on account of this.
- vii) The steel reinforcement bars 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 this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- viii) For checking nominal mass, tensile strength, bend test & re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than the specified below:

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

- ix) The contractor shall supply free of charge the required steel bars for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- x) The actual issue and consumption of steel on work shall be regulated. The theoretical consumption of steel shall be worked out as per procedure prescribed in Tender document, General Conditions of the contract shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations leading to under designing of the structure, the work shall be summarily rejected, otherwise recovery at rate so prescribed shall be made after ensuring structural soundness and stability. In case of excess consumption, no adjustment needs to be made.
- xi) Steel brought to site and remaining unused shall not be removed from site without the written permission of STRUCTURAL CONSULTANT /SBI.
- xii) The standard sectional weights referred to shall be as given in Table 5.4 in para 5.3.4 in CPWD Specification 2019 Vol.-I and will be considered for conversion of length of various sizes of TMT Bars in to standard weight. Record of actual sectional weights shall also be kept dia and lot wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the STRUCTURAL CONSULTANT /SBI shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be terms as Derived Actual Weight.
- xiii) If the derived weight is less than the standard weight, then the Derived Actual Weight shall be accepted if it is within the following tolerances specified in IS:1786-2008, otherwise whole lot will be rejected. However, deductions shall be made for the difference in derived actual weight and standard weight at the rate mentioned in clause 10CA for TMT-550D reinforcement bars.

TOLERANCES ON NOMINAL MASS

Nominal Size in mm		Tolerance on Batch	Nominal Mass per cent Individual sample*	Individual sample for coil**
a)	Up to and including 10	+7	-8	+8
b)	Over 10 up to and i/c16	+5	-6	+6
c)	Over 16	+3	-4	+4

* For individual sample plus tolerance is not specified.

**For coils batch tolerance is not specified.

- xiv) If the derived actual weight is found more than the standard weight, then nothing shall be paid extra for the difference in derived actual weight and standard weight.
- xv) The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be used in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer- in-Charge of STRUCTURAL CONSULTANT /SBI 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 checked/countersigned by the Site staff appointed by STRUCTURAL CONSULTANT /SBI and kept on record in the site office.

64.0 CONDITIONS WHERE CEMENT IS TO BE PROCURED BY THE CONTRACTOR

- i) Cement required for the work shall be procured by the contractor.
- ii) The contractor shall procure PPC conforming to IS: 1489(Part-I) / OPC (grade 43/53) conforming to IS:8112 as per list of Preferred Makes for Civil Works.
- iii) The Supply of cement shall be taken in 50 kg bags/Bulkers bearing manufacturer's name, or his registered trademarks if any and grade and type of cement as well as ISI marking. The packing of the cementbags shall be as per CPWD Specifications 2019 with correction slips up to last date of submission of bid. Samples of cement arranged by the contractor shall be taken by the STRUCTURAL CONSULTANT /SBI and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the STRUCTURAL CONSULTANT /SBI/SBI to do so.
- iv) The cement shall be brought at site in bulk supply of approximately 20tons or more as decided by the STRUCTURAL CONSULTANT /SBI.
- v) At least 1 no. cement godown of the capacity to store a minimum of 500 bags of cement shall be constructed by the contractor at site for which no extra payment shall be made

- vi) The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the STRUCTURAL CONSULTANT /SBI at any time.
- vii) The cement shall be got tested by the Contractor and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of cost the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor.
- viii) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained. The theoretical consumption of cement shall be worked out as per standard consumption mentioned in Tender /CPWD manual and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, work shall be liable to be rejected. In case of excess consumption, no adjustment needs to be made.
- ix) The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the STRUCTURAL CONSULTANT /SBI.
- x) The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge of STRUCTURAL CONSULTANT. If he does not do so within 3 days of receipt of such notice, the Engineer-in-Charge of STRUCTURAL CONSULTANT shall get it removed at the cost of the contractor.

65.0 CONDITIONS SPECIFIC TO GREEN BUILDING PRACTICE/ENVIRONMENTAL CLEARANCE

The contractor shall strictly adhere to the following conditions as part of his contractual obligation.

- i. The Contractor should follow the construction plan as proposed by the Structural Consultant /SBI to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating materials at site. Protect top soil from erosion by collection storage and reapplication of top soil, constructing sediment basin, contour trenching, mulching etc.
- ii. The contractor shall not change the natural gradient of the ground unless specifically instructed by the STRUCTURAL CONSULTANT /SBI. This shall cover all-natural features like water bodies, drainage gullies, slopes, mounds, depressions, etc. Existing drainage patterns through or into any preservation area shall not be modified unless specifically directed by the STRUCTURAL CONSULTANT /SBI.
- iii. The contractor shall not carry out any work which results in the blockage of natural drainage.

- iv. The contractor shall ensure that existing grades of soil shall be maintained around existing vegetation and lowering or raising the levels around the vegetation is not allowed unless specifically directed by the STRUCTURAL CONSULTANT /SBI.
- v. Contractor shall reduce pollution and land development impacts from automobiles used during construction.
- vi. Overloading of trucks is unlawful and creates the erosion and sedimentation problems, especially when loose materials like stone dust, excavated earth, sand etc. are moved. Proper covering must take place. No overloading shall be permitted.
- vii. Preserve and Protect Landscape during Construction
- viii. The contractor shall ensure that no trees, existing or otherwise, shall be harmed and damage to roots should be prevented during trenching, placing backfill, driving or parking heavy equipment, dumping of trash, oil, paint, and other materials detrimental to plant health. These activities should be restricted to the areas outside of the canopy of the tree, or, from a safe distance from the tree/plant by means of barricading. Trees will not be used for support; their trunks shall not be damaged by cutting and carving or by nailing posters, advertisements or other material. Lighting of fires or carrying out heat or gas emitting construction activity within the ground, covered by canopy of the tree is not to be permitted.
- ix. The contractor shall take steps to protect trees or saplings identified for preservation within the construction.
- x. Contractor should limit all construction activity within the specified area as per the Construction Management Plan (CMP) approved by STRUCTURAL CONSULTANT /SBI.
- xi. The contractor shall avoid cut and fill in the root zones, through delineating and fencing the drip line (the spread limit of a canopy projected on the ground) of all the trees or group of trees. Separate the zones of movement of heavy equipment, parking, or excessive foot traffic from the fenced plant protection zones.
- xii. The contractor shall ensure that maintenance activities during construction period shall be performed as needed to ensure that the vegetation remains healthy.
- xiii. The permission for cutting of trees and / or Transplanting of the trees shall be obtained by the Contractor from BMC/NMMC/Local Authorities or any other authority of the State Government, and execution of cutting and transplanting the trees or any other action in this regard will be taken by the contractor for which provision is already available in amount quoted by the contractor. No extra payment will be made on this ground.
- xiv. Contractor shall collect all construction waste generated on site. Segregate these wastes based on their utility and examine means of sending such waste to manufacturing units which use them as raw material or other site which require it for specific purpose. Typical construction debris could be broken bricks, steel bars, broken tiles, spilled concrete and mortar etc.
- xv. The contractor shall provide potable water for all workers.

- xvi. The contractor shall provide the minimum level of sanitation and safety facilities for the workers at site. The contractor shall ensure cleanliness of workplace with regard to the disposal of waste and effluent; provide clean drinking water and latrines and urinals as per applicable standard. Adequate toilet facilities shall be provided for the workman within easy access of their place of work. The total no. to be provided shall not be less than 1 per 30 employees in any one shift. Toilet facilities shall be provided from the start of building operations, connection to a sewer shall be made as soon as practicable. Every toilet shall be so constructed that the occupant is sheltered from view and protected from the weather and falling objects. Toilet facilities shall be maintained in a sanitary condition. A sufficient quantity of disinfectant shall be provided. Natural or artificial illumination shall be provided.
- xvii. The contractor shall ensure that air pollution due to dust/generators is kept to a minimum, preventing any adverse effects on the workers and other people in and around the site. The contractor shall ensure proper screening, covering stockpiles, covering brick and loads of dusty materials, wheel-washing facility, gravel pit, and water spraying. Contractor shall ensure the following activities to prevent air pollution during construction:
 - xviii. Clear vegetation only from areas where work will start right away.
 - xix. Vegetate / mulch areas where vehicles do not ply.
 - xx. Apply gravel / landscaping rock to the areas where mulching /paving is impractical.
 - xxi. Identify roads on-site that would be used for vehicular traffic. Upgrade vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral types that make up the surface & base. Add surface gravel to reduce source of dust emission. Limit number of fine particles (smaller than 0.075mm) to 10 - 20%
 - xxii. Water spray, through a simple hose for small projects, to keep dust under control. Fine mists should be used to control fine particulate. However, this should be done with care so as not to waste water. Heavy watering can also create mud, which when tracked onto paved public roadways, must be promptly removed. Also, there must be an adequate supply of clean water nearby to ensure that spray nozzles don't get plugged.
- xxiii. Water spraying shall be done on:
 - a) Any dusty materials before transferring, loading and unloading
 - b) Area where demolition work is being carried out Any un-paved main haul road
- xxiv. Areas where excavation or earth moving activities are to be carried out The contractor shall ensure that the speed of vehicles within the site is limited to 10 km/hr.
- xxv. All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust / particulate emissions.
- xxvi. Spills of dirt or dusty materials will be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process

does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained / cleaned up immediately before they can infiltrate into the soil / ground or runoff in nearby areas

- xxvii. Provide hoardings of not less than 3m high along the site boundary, next to a road or other public area
- xxviii. Provide dust screens, sheeting or netting to scaffold along the perimeter of the building
- xxix. Cover stockpiles of dusty material with impervious sheeting
- xxx. Cover dusty load on vehicles by impervious sheeting before they leave the site
- xxxi. The contractor shall ensure that no construction leachate (e.g., cement slurry etc.), is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including, reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line).
- xxxii. The storage of material shall be as per standard good practices as specified in Storage, Stacking and Handling practices, NBC 2016 shall be to the satisfaction of the STRUCTURAL CONSULTANT /SBI to ensure minimum wastage and to prevent any misuse, damage, inconvenience or accident. Watch and ward of the Contractor is materials shall be his own responsibility. There should be a proper planning of the layout for stacking and storage of different materials, components and equipment with proper access and proper maneuverability of the vehicles carrying the materials. While planning the layout, the requirements of various materials, components and equipment at different stages of construction shall be considered.
- xxxiii. The contractor shall ensure the following activities for construction workers safety, among other measures:
 - a) Guarding all parts of dangerous machinery.
 - b) Precautionary signs for working on machinery
 - c) Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.
 - d) Durable and reusable form work systems to replace timber form work and ensure that form work where used is properly maintained.
 - e) Ensuring that walking surfaces or boards and/or working platforms, etc. at height are of sound construction and are provided with safety rails or belts.
 - f) Provide protective equipment; helmets etc. -
 - g) Provide measures to prevent fires. Fire extinguishers and buckets of sand to be provided in the fire-prone area and elsewhere.

- h) Provide sufficient and suitable light for working during night time
- i) The contractor shall provide for adequate number of garbage bins around the construction site and the workers facilities and will be responsible for the proper utilization of these bins for any solid waste generated during the construction. The contractor shall ensure that the site and the workers facilities are kept litter free. Separate bins should be provided for plastic, glass, metal, biological and paper waste and labeled in both Hindi and English with suitable symbols.
- j) The contractor shall prepare and submit spill prevention and control plans before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.
- k) Contractor shall collect & submit the relevant material certificates for materials with high recycled (both post-industrial and post-consumer) content, including materials like RMC mix with fly-ash, glass with recycled content, calcium silicate boards etc.
- l) The contractor shall ensure that a flush out of all internal spaces is conducted prior to handover. This shall comprise an opening of all doors and windows for 14 days to vent out any toxic fumes due to paints, varnishes, polishes, etc.
- m) The providing & fixing Safety nets at various levels of Buildings as per instruction from STRUCTURAL CONSULTANT/SBI. Safety Net shall be of Garware nylon Ropes made of three layers of (100 mm X 100 mm square with 8 mm thick nylon rope.), net with 2.5 mm nylon rope with 25mm x 25 mm square and mono filament net on top having width of 5.0 mts. horizontal to the periphery of the Building with supporting structure of 50 mm dia MS hollow (40 nb) pipe duly anchored on slab/beam with 10 mm thick base plate and anchor fastener (Hilti) 4 Nos. at all corners, and free end of pipe to be tied up with upper floor column with the help of nylon rope 16 mm dia. same supporting system is to be followed for every 4.5 Mtr. in such a way to have a proper slope during Construction, and removing and re fixing part of the same as and when required/ necessary for smooth progress of the work.
- n) No extra payment shall be done against all such safety measures.

66.0 WATER USE DURING EXECUTION

Contractor should spray curing water on concrete/Plastered surface and shall not allow free flow of water. Concrete structures should be kept covered with thick cloth/gunny bags and water should be sprayed on them. Contractor shall do water poundings on all sunken slabs using cement and sand mortar.

67.0 Warning / Caution Boards/Signage

- i) All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions etc. shall be provided and displayed by the Contractor, wherever required and as directed by the STRUCTURAL CONSULTANT /SBI. All signage shall be suitably illuminated during night also. The

Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also, he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work.

- ii) In addition, the Contractor shall also provide a sign board of approved size, design & pattern at an approved location giving the details of the project, client / SBI, structural consultants, Department etc. besides providing space for names of Contractor/Sub-Contractors.
- iii) All signage shall be dismantled & taken away by the Contractor after completion of the work with the approval of the Engineer – in – Charge of STRUCTURAL CONSULTANT.

68.0 Make in India Policy

The main contractor as well as associate contractor of each discipline shall comply to Government of India Public Procurement (Preference to Make in India), Order-2017 amended up to last date of submission of bid.

69.0 Training and Awareness:

All workmen are checked for their suitability before development by the Contractor. Workers physical fitness knowledge about the activity and his previous experience are checked before deployed. Workmen involved in physical activity (such as driver, operators, Height workers, Food handlers at Canteen and Pantries, welders) shall be subjected to pre- employment medical check-up, those who do not clear the medical examination shall not be employed.

Adequate number of safety equipment and personals protective equipment (PPE) as per Indian Standards will be planned and procured.

Recommendations as per following table/Matrix should be followed:

ACTIVITY	WORKMEN CATEGORY	PPE- RECOMMENDED
General – Entry intowork premises	All Employees	Safety Helmet, Safety Shoes & Reflective Jacket
Signaling	Security/marshal	Reflective Jacket
Working at Height – More than1.8 meters	All	Full body harness Double lanyard
Involved with cement & Concrete Handling	All	Gum Boots & Rubber Hand Gloves
Breaking of ceramics & Agglomerate Materials	Chippers	Eye protection–Clear Goggles
Welding & Gas Cutting	Welders & Cutters	Leather gloves, Safety shoe, Welding Shield with proper number
Working with slush	Unskilled & Excavation gang	Gumboots
Forming and Making shuttering materials	Carpenters and Wood workers	Face shield &Nose Mask
Rebar’s handling & Working	Bar benders	Cotton hand Gloves
Scaffolding	Scaffolders	Cotton hand gloves
Painting	Painters	Clear, Goggles, Nose mask
DG Operators & Other Noise prone areas	Operators	Ear Muff, Rubber Hand Gloves (Electrical Grade)
Electrical Maintenance &Repairs	Electricians	HV Rubber hand gloves
Concrete Batching Plant	Operators & Loaders	Nose Mask

Color Coding of Helmets:

Grey	All Staff of Contractor/other Respective Person
Green	Safety Inspectors
Red	Electricians & Signal men
Blue	Supervisors
Yellow	Workmen
Orange	New Workmen (for one month)
Purple	Visitor
White	SBI/client/Consultant

70.0 Standard Operating Procedures (SOPs) and Guidelines for Construction Sites for COVID-19 Outbreak

- i) The agency shall follow all the COVID 19/Any Epidemic protocols enforced by state / central Government, NMMC / MCGM / NDMA / MHA / MOH&FW etc. from time to time and the guidelines issued by SBI from time to time as per directions of the STRUCTURAL CONSULTANT /SBI and nothing extra payable on this account.
- ii) Agency shall ensure they are in safe working conditions throughout the execution period and safety of the persons.

71.0 PRODUCT DELIVERY, STORAGE AND HANDLING OF CHEMICALS

- i. The contractor shall construct storage space for Chemicals materials to ensure that the storage conditions are as recommended by the manufactures.
- ii. All the materials shall be procured and delivered in sealed containers with labels legible and intact.
- iii. All the chemicals (polymers, epoxy, water proofing compound, plasticizer, Poly-Sulphide, SBR based elastomeric, APP (Atactic IV) Polypropylene Polymer), all exterior and interior paints, polish etc.) shall be procured in convenient packs say 20 liters/kg} capacity packing only or as approved by the STRUCTURAL CONSULTANT /SBI, and not in bigger capacity containers, say 200 liter (kg) drums unless otherwise specifically permitted by the STRUCTURAL CONSULTANT /SBI. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the STRUCTURAL CONSULTANT /SBI.
- iv. All material required for the execution of the work shall be got approved, procured and deposited with the Departmental supervisory staff. The materials shall be kept in joint custody of the contractor and the Department. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained. Different containers of each chemical shall be serially numbered on packing and also consumed in that order. Day-to-day account of receipt, issue and balance shall be regulated by the Department and proper account shall be maintained at site of work in the prescribed form as per the standard practice.
- v. All the chemicals shall be procured by the contractor directly from the manufacturer. In exceptional circumstances, the contractor may be allowed to procure the materials from the authorized dealers of the manufacturers, if specifically permitted by the STRUCTURAL CONSULTANT /SBI.
- vi. The original copies of challan /cash memos towards the quantity of various chemicals procured shall be made available by the contractor at the request from the STRUCTURAL CONSULTANT /SBI and a copy of the same shall be kept in record.
- vii. The Name of manufacturers, manufacturer's product identification, and manufacturer's mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container.
- viii. The contractor shall submit for the chemicals procured, manufacturer's and / or authorized dealer's certificate regarding supplying and verifying conformance to the material specifications, as specified.
- ix. All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.
- x. Empty containers of the chemicals should not be removed from site till the completion of work and shall be removed only with the written approval of the STRUCTURAL CONSULTANT /SBI.

- xi. All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.
- xii. Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipment in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.
- xiii. All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.
- xiv. The chemicals shall be tested in an independent laboratory as approved by the STRUCTURAL CONSULTANT /SBI at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in- Charge of STRUCTURAL CONSULTANT. Nothing extra shall be payable on this account.

72.0 SAFETY CODE (ANNEXURE-IX) - SAFETY MEASURES AT SITE:

1. All personnel at site should be provided with Helmets and Safety Boots with some Identification Mark. Visitors also should be provided with Helmets. It should be ensured that these are used properly.
2. First Aid Box should be kept at site with all requisite materials.
3. No one should be allowed to inspect / work at a height without Safety Belt.
4. Suitable scaffolds should be provided for workmen for all Works that cannot safely be done from the ground, or from solid construction except such short period Work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well as suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical).
5. Scaffolding or staging more than 3.5 meters above the ground or floors, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 Meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
6. Working platforms, Gangways, and Stairways should be so constructed that they do not sag unduly or unequally, and if the height of the platform or the Gangway or the Stairway is more than 3-5 Meters above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fenced, as described.
7. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 Meter.
8. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 Meters in length while the width between side rails in rung ladder shall in no case be less than 30cms for ladder upto and including Meters in length. For longer ladders this width should be increased at least 6mm for each additional 30 cms. Uniform step spacing shall not exceed 30 cms.

9. Adequate precautions shall be taken to prevent danger from electrical equipment. For electrical on line works gloves, rubber mats, and rubber shoes shall be used.
10. All trenches 1.2 Meters or more in depth shall at all times be supplied with at least one ladder for each 30 Meters length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1 Meter above the surface of the ground. The sides of the trenches, which are 1.5 Meters or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 Meters of the edge of the trench or half of the depth of the trench whichever is more cuttings shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.
11. Before any demolition work is commenced and also during the process of the work: -
 - a) All roads and open areas adjacent to the Work Site shall either be closed or suitably protected;
 - b) No electrical cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
 - c) All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.
 - d) All necessary personal safety equipment as considered adequate by the Site Engineer should be kept available for the use of the persons employed on the Site and maintained in a condition suitable for immediate use; and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.
 - e) Workers employed on mixing Asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
 - f) Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
 - g) Those engaged in welding works shall be provided with Welder's protective eye-shields.
 - h) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - i) When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into the manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals and boards to prevent accident to the Public.
12. Use of hoisting machines and tackle including their attachments, anchorage and support shall conform to the following standard or conditions: -
 - a) These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good repairs and in good working order.
 - b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

- c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffold, winch or give signals to the operator.
 - d) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or lowering or as means of suspension the safe working load shall be ascertained by adequate means.
 - e) Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - f) Motor, Gearing, Transmission, Electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced.
 - g) When workers are employed on electrical installation, which are already energized, insulating mats, wearing apparel such as gloves, sleeves, and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
13. All scaffolds, ladders and other safety devices, mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.

73.0 Provision of BIS codes, CPWD Manuals, CPWD trade specific guidelines, Catalogues, etc.: Contractor has to arrange all the relevant BIS codes, CPWD Manuals, catalogues, Technical details from manufactures, etc. as mentioned in the Technical bid & Price Bid and has to be kept at site till closure of the project.

74.0 Conditions specific to Project:

- a) In response to the tenders invited by Bank/Structural Consultant, the CONTRACTOR have inspected the site and surroundings of the works specified in the tender documents and have before accepting the Contract, satisfied themselves by careful examination about the nature of the work and nature of the site and local conditions, quantities nature and magnitude of work, the availability of labour and material necessary for the execution of work, the means of access to work site, the supply of power and water thereto and the accommodation they may require and have made local and independent enquiries and obtained complete information as to the matters and things referred to, or implied in the Contract or having any connection therewith and have considered the nature and extent of all probable and possible situations, delays, hindrances, or interferences to or with the execution and completion of work to be carried out under the Contract being awarded hereunder and have examined and considered all other matters, conditions, and things and probable and possible contingencies thereto affecting the execution and completion of work and which might have influenced them in accepting the Contract.
- b) The CONTRACTORS shall provide, execute and complete all the works mentioned in the CONTRACT and shall do and perform all other acts and things mentioned or described in the CONTRACT or which are to be implied there from or may be reasonably necessary for the

completion of the said works and the times and in the manner and subject to the terms and conditions or stipulations mentioned in the CONTRACT.

- c) It has been understood by the parties hereto that the Bank/Structural Consultant will have right to make reasonable changes in the drawings and designs during the progress of the construction works without prejudice to the CONTRACT. Notwithstanding anything to the contrary contained in any of the Annexure hereto the CONTRACTORS shall commence the work and shall complete the same as per stipulated date of Completion
- d) The Contractors do hereby agree that the amount of liquidated damages specified in conditions of contract/ special conditions of contract represents a genuine and fair estimate of the loss likely to be suffered by the Bank in the event of the works not being completed in time.
- e) It is specifically and distinctly understood and agreed between the Bank and the CONTRACTORS that the CONTRACTORS shall have no right, title or interest in the site made available by the Bank for the execution of the works or in the building, structures or works executed on the said site by the CONTRACTORS in the goods articles, materials etc. brought on the said site (unless the same specifically belongs to the CONTRACTORS) and the CONTRACTORS shall not have or deemed to have any lien or charge whatsoever for unpaid bills and it will not be entitled to assume or retain possession or control of the site or structure and the Bank shall have an absolute and unfettered right to take full possession of the site and to remove the CONTRACTORS, their servants, agents and materials belonging to the CONTRACTORS lying in the site.
- f) The CONTRACTORS shall be allowed to enter upon the site for execution of the works only for the purpose of executing the contract work and shall not have any claim, right, title or interest in the site or the structures erected thereon and shall not enter upon at any time without assigning any reason.
- g) The Contractor shall afford every reasonable facility for the carrying out of all works relating to civil works, installation of lifts, Telephone, electrical installations, fittings and other ancillary works in the manner laid down in the said Conditions, and shall make good any damages done to walls, floors, etc. after the completion of his work.
- h) The STRUCTURAL CONSULTANT /SBI reserves to itself the right of altering the drawings and nature of the work by adding to or omitting any items of work or having portions of the same carried out without prejudice to this Contract.

TECHNICAL SPECIFICATIONS

SECTION-1: Brief Scope of work:

1. The serviceable and unserviceable materials shall be stacked separately and properly in the designated place and to be stacked/stored at designated till the disposal / reuse of the same. The debris is to be carted outside the premises and disposed-off at the Municipal Corporation designated place up to any lead, lift and level at his own cost.
2. All the civil work has to be carried with Minimum 53 grade OPC cement and river sand, of required fineness, which must be free from stilt and other impurities
3. All the civil work, whether new or repair, must be cured for at least 7 days
4. For all work, water to be use must be fresh and pure without any salinity and turbidity.

5. The rates quoted for all the items of the BOQ shall include the following specifications: -

- a) All the works are to be carried out at all heights and locations i.e. from Ground Floor of the building up to the Over Head Water Tank roof slab or Mumty roof slab, as applicable.
- b) Providing & fixing temporary support arrangements such as Steel Props (Up to any number whenever and wherever as directed by the Architect/Consultant) to support the structure provisionally during repairs and structural works etc. and maintaining the props in position till required & as directed by the consultant including other safety elements such as bracings, steel angles, working platforms, plates etc., which shall be provided & considered in the quoted rates for the areas in the vicinity in adequate numbers as directed. All the civil & structural Repair works indicated hereinunder shall include all leads & lifts & working up to any heights, depths & levels.
- c) The Contractor has to make arrangements at his own cost to tie an approved quality safety net around the work so that loose plaster/ concrete does not cause damage to the property or any human being, if necessary and removing the same after completion of work.
- d) Providing all type of PPE to the workforce such as safety shoes, safety helmets, reflective safety jacket, full body safety harness, goggles, gloves, etc. complete for all types of workforce engaged on site for execution of the work.
- e) Providing and fixing necessary double bamboo scaffolding with vertical support as well as horizontal bracings placed at 1.2 to 1.8 C/C on both inner as well as outer faces, staging, centring, shuttering etc. as required for execution of the job at any height and location including removal of same. The scaffolding should be erected and anchored into the concrete members with help of expandable bolts, which are to be cut as the scaffolding is removed, no wall is to be punctured, at no extra cost to the Bank.
- f) Contractor has to make arrangements at his own cost to cover entire external surface with Hessian cloth curtains so that not cause any damage to the existing nearby building and even take care of dust control and also all the windows, glass panes, other openings are to be covered with tin sheets / 6mm plyboards and all the flooring are to be covered with ready protective plastic sheet if required and carefully removing them after completion of work.
- g) Rates shall be inclusive of all enabling works like all safety measures, scaffolding, labour camp, storages, godowns, all required permissions from local governing respective authorities to carry out works, all insurances, all licences, administration, all SHE related measures, security, watch and ward measures, barricades other than specified , traffic

management, tree protection, property damage repairs, water, electricity, DG as per requirement, all tools, machineries, vehicles, etc complete.

- h) All rates should be inclusive of all loading, shifting, all leads, lifts, sorting, transportation, labours, tools, plants, machinery, etc. Complete.
- i) All the above-mentioned points including the requisite elements & items as mentioned shall be considered included within the quoted rates of the line items of the BOQ and nothing extra would be paid on this account.

1.0. Brief Scope of work is as follows:

- i. The Contractor may have to execute all required works at his own cost, if left omitted in above scope, for making the building fit for occupation and functional use by the user department. Nothing extra shall be paid on this account.
- ii. Execution of the works and construction for Projects per approved drawings, design and plans as well as obtaining clearances required for occupation of the building from the local bodies.
- iii. Scope of work, Schedule of Quantities, General Conditions, Additional and other conditions/specifications for Structural, Civil, Waterproofing, Plumbing, Painting and Allied works have been given in detail in respective chapters & schedules of this bid document and same may be referred.

iv. Execution of work

- a) The Contractor should visit/revisit and examine the site of work and satisfy himself as to the nature of the existing roads, municipal drains, supply lines and other means of communication and other details pertaining to the work and local conditions and facilities for obtaining his own information on all matters affecting the execution of work. No extra charge made in consequence of any misunderstanding, incorrect information on any of these points or on ground of insufficient description shall be allowed.
- b) The work shall be carried out in conformity with the drawings & design and within the requirements of electrical, structural and other specialized services drawings.
- c) The Contractor shall cooperate with all trades and agencies working on the site. He shall make provision for hangers, sleeves, structural openings and other requirements well in advance to prevent hold up of progress of the construction schedule. All supports to the civil structures shall be provided with dash fasteners.
- d) On award of the work, Contractor shall submit a schedule of construction as per clause of the agreement for approval of the Structural Consultant /SBI. All dates and time schedule agreed upon shall be strictly adhered to within the stipulated time of completion/ commissioning along with the specified phasing, if any.
- v. ALL NOC's/Permissions/Approvals required before/after completion of any/all Specialized Works like, tree cutting permission/Garden NOC, Plumbing, Water Supply, Drainage, Water Meter NOC from the local bodies are to be secured by the contractor. Further Contractor has to complete the work as required by the Local Authorities / NMMC / CIDCO and assist the STRUCTURAL CONSULTANT /Structural Consultant in related documentation, if required, for getting the completion certificate, stability certificate as per the cases.

vi. Defects Liability Period:

As per Clause No. 1.1.11 (a) of GCC.

vii. Facilities for the Site Staff

Facilities for the Site Staff shall be provided as mentioned in special conditions in part. The quoted amount by the contractor shall include these elements also.

viii. Health & Safety Manual provisions

- a) The Contractor will comply of the provisions contained safety, Health and Environment guidelines failing which he / they will be liable for the penalties on each violation subject to compounding of the same to maximum of such default as mentioned in the various unsafe act / unsafe conditions in this manual. This apart from the other fines/ levies / penalties are mentioned in the documents elsewhere. It is incumbent upon the contractor to ensure in undertaking all health and safety compliance for safety of all concern to generate safety conscious and safety regulatory as his primary statutory duties or responsibilities in the contract.
- b) General pest control, fogging, fumigation etc. should be carried out regularly and adjoining areas.

ix. SAFETY MEASURES:

Before starting of works The permission for cutting of trees and / or Transplanting of the trees shall be obtained by the Contractor from BMC/NMMC/Local Governing Authority or any other authority of the State Government, and execution of cutting and transplanting the trees or any other action in this regard will be taken by the contractor at his own cost. Contractor to take note of this while quoting the rates.

x. Specialized Civil, Electrical & Mechanical works:

The tenderer must associate himself with agencies of the appropriate eligibility for each of specialized nature of items/work listed in Tender Document Such works shall be got executed only through associated agencies specialized in these fields. The tenderer whose tender is accepted shall indicate the name(s) of his associated specialized agencies those fulfilling the eligibility criteria laid down in Tender Document after award of work and at least 30 days before commencement of such items / work but within 90 days of award of work with their credentials whichever is earlier for the approval of the STRUCTURAL CONSULTANT /SBI of that component, whose decision shall be final and binding.

xi. Rate Analysis

The L1 contractor shall provide detailed Rate Analysis for all items of works within 3 days of opening of Price Bid/e-reverse Auction Rate analysis shall include break up of materials, labour, wages, fixtures, transportation, installation, wastages, Octroi, levies, all cess, royalties, all taxes (but excluding GST), machinery, enabling works such as scaffolding, cleaning, overheads, profit, statutory expenses, incidental charges Water and Electricity Charges and his overheads and profits for the same and all related expenses to complete the work

xii. The Work shall be carried out as per Minimum Specifications, particular specifications and drawings (Architectural, Structural and MEP). Any deviation, extra items & substitute Items shall be dealt as per Clause of General Conditions of Contract.

Note: All works has to be executed as per specifications provided in the bid document, CPWD Specifications-2019 (with updated correction slips) Vol-I & Vol. II, and National Building Codes 2016, Relevant BIS Code (in case of difference, if any, stringent / higher specification of the two shall be followed). In absence of Tender Specification, CPWD, IS Codes, MoRTH Specifications, National Building Code 2016, Specifications, or sound engineering practices shall be adopted as per order of precedence defined in the contract. (Refer clause 1 of SCC).

The scope of works & specifications is given in general but they are not exhaustive i.e., does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/ or described in the specifications, provided that the same can be reasonably inferred therefrom. There may be several incidental works, which are not mentioned in the contract document/specifications but will be necessary to complete the item in all respect. All these incidental works/ costs which are not mentioned but are necessary to complete the work shall be deemed to have been included in the overall amount quoted by the contractor for various components of work. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation/change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of STRUCTURAL CONSULTANT /SBI. Nothing extra shall be payable on this account.

In case, some of items are missing in the scope of work or specifications in the bidding documents same shall be taken from the specification mentioned in similar type of items mentioned for similar type of buildings in the scope of work or shall be executed as given in the CPWD Specifications, NBC-2016, IS Codes or according to sound engineering practices so as to make the building including related services fully functional. No claim whatsoever may be entertained at later stage. All cost of providing and making buildings with services, landscape and horticulture works fully complete in all aspect unless specifically mentioned in the contract document and making buildings with services fully functional are included in the cost tendered for this work.

METHODOLGY FOR REPAIRS

A. GENERAL WORK

1. External Scaffolding & Hessian cloth covering:

- 1.1. Conventional scaffolding shall be of vertical members of steel/bamboos, spaced and filled by suitable horizontal members secured to each other firmly. This scaffolding shall be double, both connected and braced properly, and secured by connecting with the members of permanent structure, at regular intervals. No holes shall be permitted in external brickwork. Necessary platforms, railings and safety nets, safety belts, helmets, etc. shall be provided to ensure the safety of workers. To reduce the height of falling debris intermediate platforms on the scaffolding shall be erected. Access for labour and staff to the platform from the flats at the relevant levels will be given, if possible. Alternatively, adequate and safe lifting tackle for men and materials shall be provided by the tenderer at his own cost.
- 1.2. Stitched hessian shall be tied to the external face of the scaffolding/platforms in order to avoid lumps of broken concrete flying around and causing accidents. Fencing at ground level shall be erected to dissuade third persons entering the work area.
- 1.3. Any additional arrangement and/or any alterations/additions to the normal scheme of the scaffolding for overcoming obstructions in the plan and elevations of the building shall be thought of and provided for in the quoted rates.

2. Window Covering:

- 2.1. Windows/doors/openings shall be covered with plywood or tin sheets and properly secured to protect the shutters and glass panes from falling debris, and to keep the dust out.
- 2.2. Any equipment, furniture, fixtures, fittings etc., adjacent to the work area, should be either removed or adequately covered (as advised by the consultant) to avoid damage/breakage during the progress of work.

3. Propping & Shoring:

- 3.1. The guidelines outlined on sketches shall be followed.
- 3.2. Steel tube adjustable props are preferred. The sections of timber props, if used, shall be adequate to support the structure temporarily as directed by consultant.
- 3.3. Bracings, base plates and wedging etc. are an integral part of the system. Providing adequate bracings, base plates and wedges is obligatory to have been included in the scheme for propping and shoring.
- 3.4. The propping and shoring shall be kept and maintained in position till required as directed by the Consultant.

B. STRUCTURAL/CONCRETE REPAIRS (POLYMER MODIFIED MORTAR)

1. Preparatory Work:

Categories of damage to concrete. Generally, there will be four categories of defective concrete. The defects of design or construction are many times aggravated by corrosion of reinforcement and consequent damage to the concrete.

- 1.1. **Category No. 1:** Core concrete is sound, but the concrete cover is cracked, reinforcement is slightly rusted, but replacement of steel is not required.
- 1.2. **Category No. 2 :** Damage due to corrosion of reinforcement which itself is in tolerable state but core concrete is unsound due to inherent honeycombing, voids, cavitation, deterioration etc.
- 1.3. **Category No. 3 :** Damage where corrosion of reinforcement is severe, the core concrete is compact and sound, but the concrete cover is cracked or spalled and corroded reinforcement is required to be restored by additional reinforcement.
- 1.4. **Category No. 4:** Damage where corrosion of reinforcement is severe and core concrete is also unsound. Reinforcement is to be replenished by additional reinforcement.

2. Defining the damaged area:

- 2.1. The doubtful area shall be checked. Any loose plaster or cover coating shall be removed to expose the affected concrete surface.
- 2.2. In case the exposed concrete surface is found to be sound but the plaster having come off due to lack of bond, the area shall be demarcated for re-plastering only.
- 2.3. In case the exposed concrete is found to be damaged, then the damaged concrete shall be demarcated for repairs as described.

3. Chipping/Demolition/Breaking of RCC/Plaster/Brick OR any others:

- 3.1. All precautions shall be taken by providing guard rails, barricading and covers in the interest of the safety of passers-by.
- 3.2. The debris shall be stacked as neatly as possible and carted away as soon as possible to the Municipal approved dumping area.

4. Surface preparation:

- 4.1. All loose, disintegrated and cracked concrete shall be removed carefully by chipping hammer and/or chisel to expose sound concrete and to expose the rusted reinforcement if any. The removal of concrete shall be extended at least 150 mm. beyond the rusted length of reinforcement. Care shall be taken to leave sound and compact concrete undisturbed and to ensure that any good bond between the embedded reinforcement and parent concrete is not broken.
- 4.2. All exposed sound concrete shall be chipped to roughen in order to receive the new treatment.
- 4.3. The peripheral edges of broken concrete shall be cut true and in rectilinear patterns. Re-entrant/angled corners shall be chamfered.
- 4.4. Plaster or coating, shall be removed to the extent of 100 mm. beyond the cut edges of the damaged concrete.
- 4.5. Any inherent honeycombing, voids, cavitation etc. shall be noted and marked for grouting.
- 4.6. All unwanted foreign materials shall be removed by wire brushing and washing with a water jet.
- 4.7. Any existing reinforcement reduced in size, beyond acceptable limits and certified as such by the consultant, shall be cut and removed.
- 4.8. The remaining reinforcement shall be cleaned thoroughly of all scales, rust and blemishes by light chipping and scrubbing with wire brush. An approved rust remover shall be used if so, instructed by the consultant.

5. Reinforcement: Providing New Reinforcement {in case of category of damage to concrete Category: 3 & 4}:

- 5.1. Any dislodged but acceptable reinforcement shall be anchored by means of dowels secured in the parent concrete, locking the reinforcement in position as shown in detailing sketches and/or as directed by the consultant.
- 5.2. Where the existing reinforcement has rusted and wasted to an extent where it cannot be accepted, new reinforcement in the form of steel bars or welded mesh shall be provided as directed by the consultant.
- 5.3. The new reinforcement shall be clean and free from loose mill scales, dust, rust, paint, oils etc. which may affect bonding between bars and concrete.
- 5.4. The reinforcement is represented diagrammatically on drawings and sketches; the same is not necessarily shown in true projection. The reinforcement shall be assembled in accordance to clause no. 11 of IS: 456-1978.

- 5.5. The new reinforcement shall be fixed to parent concrete by means of dowels secured in parent concrete as shown on the sketches as or directed by the consultant.
- 5.6. Reinforcement shall not be bent after being embedded in concrete. Laps in reinforcement may be allowed only with the prior approval of the consultant. The lap length shall be as specified.
- 5.7. Reinforcement may be required to be welded to the existing reinforcement as directed. The welding shall be in accordance with the recommendations of relevant standards for welding of steel bars used in reinforced concrete constructions.
- 5.8. The gaps and contact between the exposed steel and parent concrete shall be caulked with a specified epoxy putty.
- 5.9. The reinforcement old and new shall then be coated with a specified protective coat.

6. Making Good the Broken Concrete by Polymer Modified Mortar

All areas so chipped shall be subjected to water cleaning and drying. No deleterious material shall be left on the chipped surfaces. It is essential that the loose and cracked concrete shall be properly removed. It is essential that concrete around the rebar, which shows corrosion shall be removed properly, and sufficiently to ensure proper cleaning of rust from the rebar.

In case the distressed concrete extends into the core of the section it is essential to seek the consultant's approval prior to removal of this concrete. It is essential also to design proper support system and prop the area prior to removal of concrete beyond 5 mm inside the core area.

6.1. BOND COAT:

- 6.1.1. The specific quality requirements as stipulated in STS 6 above for a common work of bonding needed in restoration shall be followed. All the test facilities are generally not available even in sophisticated laboratories in the country. Few manufactures do have such an in-house facility with them. The difficulty therefore lies in strict stipulations and their subsequent job-site compliance. Therefore, reliability of the product quality is important. The coat of approved material shall be applied to all exposed surfaces of concrete at least 20 minutes prior to polymer modified mortar / treatment. The material to be used shall be non-acidic in nature. List of approved material is given in the document. Only those materials approved shall be allowed to be used unless equivalent permitted by PMC in case of non-availability. All chemicals used for Rust Inhibition, Bond coat, Polymer Modified Mortar shall be of same generic and same manufacturer to maintain homogeneity.
- 6.1.2. The items to be used shall comply with all requirements as specified in STS 6 and the material purchased shall be given in the consultants' custody in the original manufacturer's sealed manner. It shall always remain in the client's store & custody.

6.2. Execution

6.2.1. Preparation of concrete surface

Concrete surfaces to which bonding chemicals are to be applied shall be exposed; this parent concrete should be free of loose and unsound materials. Surfaces shall be prepared by mechanical abrasion or using sand blasting/ stiff wire brushing as instructed by engineer.

6.2.2. Inspection of concrete surface prior to bond coat application.

- 6.2.2.1. All concrete surfaces prior to applications of coating shall be thoroughly inspected and approved by the consultant.
- 6.2.2.2. Surfaces shall be free from any deleterious materials, such as oil, dust, dirt etc.
- 6.2.2.3. Adhesive mixes permitted for Epoxies only. Polymers come in ready to use packages.
- 6.2.2.4. Bonding components shall be mixed in a clean container free from harmful residue or foreign particles.

6.2.2.5. Epoxy components shall be thoroughly blended with a mechanical mixer to a uniform and homogeneous mixture. Small batches (up to 1 liter) however shall be allowed by manual mixing such as using spatulas, palette knives etc.

6.2.3. Coating application on concrete / shot Crete / mortar placement

6.2.3.1. Work of application of bonding coat shall not be allowed to be performed beyond 40C atmospheric temperatures. In case the temperature is above specified then it is essential that cooling of the surface shall be done by water application and then drying the surface of free water.

6.2.3.2. Bonding coat shall be applied to concrete surfaces by spray equipment. However, contractor may apply the coating by brush, subject to the permission of engineer.

6.2.3.3. Fresh plastic concrete as per suggested system of modification shall be applied while coat is still tacky. If Bond coat cures to extent of losing its tacks before plastic modified concrete is placed, the same shall be removed or slightly abraded and second coat of Bond coat applied.

6.2.3.4. Freshly placed plastic concrete shall be thoroughly consolidated to ensure full bonding of new concrete.

6.3. POLYMER MODIFIED MORTAR:

The material used shall be as per the comparison of the infra spectrometer graph of the product the contractor wishes to use with that of the recommended product. The decision of the consultant as regards to the generic and brand shall be final for this contract and the contractor shall use only the material so approved.

6.3.1. Mortar mixes

6.3.1.1. Mix polymer components in clean container free of harmful residue of foreign particles.

6.3.1.2. Temperature from preparation of polymer mortar to application should be between 0 to 40 degree centigrade, otherwise as recommended by manufacturer.

6.3.1.3. Thoroughly blend polymer with a mechanical mixer to uniform and homogeneous mixture if the polymer is more than one month old.

6.3.1.4. The proportion of mixing the polymer for modification shall be decided by the use of the modified mortar. For use in cover replacement the percent of polymer can be limited to 15 percent. However, for core replacement or in case of sections where distress is due to over stressing 20% modification is required.

6.3.1.5. Polymer Modified Mortar application. Modified mortar shall be prepared by first mixing all dry components in dry state mix required quantity of polymer with equal volume of water mixture. Mix the dry system and polymer and water mixture. Mix thoroughly by workable mix. For 1 bag of cement 7.5 Kg of polymer shall be used and the mortar shall be used 1: 3 volumetric mix.

6.3.1.5.1. Apply polymer modified mortar to concrete surface by hand packing and then sanding machine. Thickness shall be within the limits recommended by the manufacturer. Additional layers shall be applied to bring the surface to line and level as required.

6.3.1.5.2. Work polymer modified mortar into place and consolidate thoroughly so that all contact surfaces are wet by the mortar and entrained air is reduced to the level recommended by manufacturer.

6.3.1.5.3. Finish surface of polymer modified mortar to texture, Colour, and smoothness required for the specific application. This mortar coat should be finished by application of plain cement mortar in 1: 3 using 53-grade cement. No water curing shall be applied to polymer modified mortar surface. However, over coat of plain cement mortar shall be cured with water as required after 12 Hrs.

6.3.1.5.4. Upon completion of finishing operations, allow mortar to cure in accordance with normal curing practices for polymer modified mortars.

6.3.2. Curing

6.3.2.1. All polymer treated surfaces can either be immediately covered with plain cement mortar, then cured after 12 hours or the surfaces can be left to naturally cure without sprinkling water for two days and then covered with second coat of plaster.

6.3.2.2. All plastered surfaces shall be water cured for seven days with the first two days the curing being done every five to six hours. When the atmospheric temperature of the site exceeds 40 degree Celsius then curing shall be resorted to as many times as required to keep the surface moist or to ensure the mortar temperature does not rise.

C. The methodology for the repair of spalled/ distressed concrete members/ areas is as follows:

1. **Surface preparation:** The loose dilapidated concrete shall be removed from the substrate using mechanical breakers. The concrete shall be removed up to a minimum depth of 10mm beyond steel reinforcement. The chipping should continue till sound concrete is available. The chipped concrete shall be cleaned using high pressure water jet with clean potable water. This would make the substrate free from all impurities and unwanted organic deposits. In case of slabs the edges shall be cut to a minimum depth of 20mm to avoid formation of feather edges.
2. **Reinforcement treatment:**
 - a) Thoroughly clean the corroded reinforcement/ steel rebar by wire brush or rotary grinder. Apply chemical rust remover over the reinforcement surface thoroughly all around the circumference and along the full length of rusted reinforcement. After 24 hours of its application; the surface shall be cleaned with wire brush and all loose particles removed. It shall be washed with water thoroughly and allowed to dry.
 - b) Apply two coats of interpenetrating polymer network for rebars: IP Net RB epoxy coating on a coating is for old as well as newly provided steel. This system (Interpenetrating polymer network system for rebars: IP Net RB) once applied on steel shall provide extended protection against future carbonation and chloride attack on steel.
 - c) Carry out application of Bi-polar migratory corrosion inhibitor EPCO KP 100 on concrete surface by brush in two coats. This inhibitor has migratory kind of property which permits the material to migrate to a virtual extent of 60mm, through pores of concrete, inhibiting the corrosion and de-passivating the Electro-chemical reaction. It has property to attack anode as well as cathode, which is purely alkaline in nature (ph-9.5), so it has no carcinogen activity with concrete. Material shall have evaluated test reports indicating significant reduction in corrosion rate after minimum 90 thermal cycles at 60% centigrade followed by 8 weeks of accelerated corrosion indicative of its suitability for tropical applications.
3. **Provision of additional Reinforcement:** Wherever the reinforcement loss is heavy (>30%) or reinforcement is lost completely, additional rebars of same diameter shall be provided with the help of shear connectors/ welding/ links. The shear connectors are typically provided in the repair area in a grid pattern 200mmX 200mm by drilling holes of 10-12mm diameter holes shall be grouted with epoxy acrylate-based anchoring material.
4. **Injection Grouting to arrest porosity:** Holes should be drilled in the concrete where the leakage and cracks are observed to fix injection packers. the packers are fixed using Epoxy putty on the surface. Injection is done using hydro swelling, water based, low viscous, thermo-setting resin based on vinyl metha- acrylate chemistry, to fill the pores within the concrete.

5. **Application of bonding agent:** The prepared and treated concrete substrate to be repaired shall be given a bonding coat using two components, epoxy bonding agent having a long open time. The bonding agent is applied using either by brush or roller. The bonding agent application shall be done to only that much area that can be covered within the open time. Under normal conditions, bonding agent has an open time of at least 3hrs before it loses its tackiness. However, a small patch shall be applied to confirm the same before applying over the entire area since the open time varies with ambient conditions. In case the bonding agent is found to be dried, a further coat of bonding agent shall be given.
6. **Refurbishment of Damaged concrete:** The primed concrete substrate shall be repaired with single component, fiber reinforced, dual shrinkage compensated, cementitious, thixotropic repair mortar by hand and trowel application.

The mortar shall be prepared by mixing the powder with water at the recommended water powder ratio. Initially add 80% of the water in the mixing bucket, mix slowly adding powder component using slow speed paddle mixer. Add remaining amount of water and continue mixing for 2 minutes till lump free paste consistency is achieved.

The mixed mortar shall be used within its workable time and no further addition of water for workability is allowed. To enable this mix only required amount of powder which can be applied within its workable time.

The mortar mixed shall be applied initially by hand carefully pressing the same against the concrete surface and filling all the corners of the repair area starting from centre of damaged area.

The mortar shall be applied in layers of 50mm on vertical surface and 30mm on overhead surface. The final layer shall be finished with steel trowel to make it in line with existing concrete surface.

In case further layers of mortar were not applied immediately, then the surface shall be made rough using steel trowel to provide mechanical key further layers of mortars. The initial dried layer shall be saturated with water prior to application of further layers.
7. **Curing:** The repaired area shall be kept wet by covering with wet Hessian cloth for a minimum period of 7 days for ceiling its water should be sprinkled continuously for minimum 7 days.
8. **Polymer based plaster over repaired mortar:** The entire surface shall be plastered with polymer mix with cement mortar of 1:5:15.

Alternatively: **The repair of RCC elements using Micro concrete in place of Polymer Modified Mortar is also recommended for making of concrete more than 25mm.**

D. The methodology for recasting of slabs is as follows:

1. **Surface preparation:** The loose dilapidated concrete shall be removed from the substrate using mechanical breakers. The concrete shall be removed. The chipped concrete shall be cleaned using high pressure water jet with clean potable water. This would make the substrate free from all impurities and unwanted organic deposits. In case of slabs the edges shall be cut to a minimum depth of 20mm to avoid formation of feather edges.
2. **Slab Pre-concreting Checks:** There are many checks that need to be performed prior to concreting of reinforced concrete slab.
3. **Checking Slab Formwork:** Check whether the formwork is fixed properly or not for example sleeves and supports. Damaged materials employed for formwork or shutter should not be utilized. All formwork surfaces in contact with concrete need to be treated with shuttering oil

and dampen with water sometime prior to concrete placement. Check the level of the projected top surface of the slab and place level strips if necessary, to mark the exact level.

4. **Re-baring or Reinforcement work:** Rebars of same diameter shall be provided with the help of shear connectors/ welding/ links. The shear connectors are typically provided in the repair area in a grid pattern 200mmX 200mm by drilling holes of 10-12mm diameter holes shall be grouted with epoxy acrylate-based anchoring material using HILTI.
5. **Checking slab reinforcement work:** Check and approve that reinforcements are fixed as per the approved drawings. Examine reinforcement spacing (including vertical and horizontal spacing) and cover. Ensure that adequate support for reinforcements are provided to prevent any movement during concreting process. Loose ties along the splices of reinforcement bars must be tightened again. Free end of binding wires shall be bended inward. Reinforcements are fixed as per the approved drawings. Examine reinforcement spacing (including vertical and horizontal spacing) and cover. Ensure that adequate support for reinforcements are provided to prevent any movement during concreting process. Loose ties along the splices of reinforcement bars must be tightened again. Free end of binding wires shall be bended inward.
6. **Slab Concreting Work Procedure**
 - a. **Providing Construction Joint:** The construction joint shall be pre-decided and fixed prior to start of the concreting. It is planned to have two construction joints for main building as decided. In case of major break down of the Batching plant, the additional Construction joint may be left. The location of the construction joint shall be at the one-third span. Construction joint shall be straight and have profile of 'L' shape so that successive layer of concrete shall be perfectly bonded with previous laid layer. Preparation of construction joint shall include roughening, removing all laitance adhering to the joint and application of thick slurry before start of the new concrete.
 - b. **Pouring of Concrete: Proper** walkways/platforms shall be arranged so that the supports of the pipeline and manpower are not directly stand on reinforcement. Concrete of grade M-25 shall be produced from batching plant or mixed at and directly pumped to the location of concrete placement through the pipeline or manually. The pouring sequence shall be from grid A towards construction joint. Since the grade of concrete for column is M-40 and surrounding concrete is M-25, sufficient offset around column shall be casted with M-40. Sufficient carpenters along with supervisor shall inspect the behaviour of supports below the slab during the casting. Extra Props shall be stocked below slab to provide additional supports in case of any failure of supports.
 - c. **Finishing Concrete Surface: Use** the power float for the smooth finish surface purpose. The casted area or member shall be protected by placing barricade to prevent plants and machineries damaged the concrete. Concrete pour card shall be filled by Quality Engineer and to be submitted to the Engineer including concrete delivery notes, this task will be done whenever required.
 - d. **Curing Concrete:** The curing shall be started immediately after thumb set of the concrete laid. Hessian clothe /Plastic shall be covered over the set concrete to reduce moisture evaporation from the concrete during hardening and thus to minimize shrinkage crazy cracks. These cracks are inheriting property of the concrete specially appears during casting of flat surfaces. Final curing shall be done by ponding and stacking water for minimum period of 7 days. Form work shall be removed after 3-4 days after inspection of Engineer.

METHODOLOGY FOR STRENGTHNING BY USING PURE MICRO CONCRETE	
a)	Supporting of beams adjacent to column from all 4 sides by providing wooden runner perpendicular to beam main reinforcement (If required support slab by any on direction of runner).
b)	Chipping entire plaster of column by chipper machine of 6kg
c)	Checking concrete by doing tapping concrete surface by hammer also checking of hairline cracks & honeycombed area.
d)	Chipping out debonded, cracked concrete also removing loose pockets it is there.
e)	Cleaning of exposed reinforcement surface by hard core wire brush & tachha. Removing rust scales from existing reinforcement.
f)	Application of Alkaline base Rust Remover of any approved brand in tender documents.
g)	Allow the surface for air cure for 24 hours
h)	Wash entire surface by water & allow to dry surface
i)	Fixing of New reinforcement
j)	Application of 2 coats of Zinc rich primer on exposed reinforcement. The duration Between 2 coats should be minimum 4 hours.
k)	Application of Migratory corrosion inhibitor on entire concrete surface
l)	Making 4 holes in concrete slab (grid) and pouring pure micro without addition of metal. (At some grid practically 4 cores are not possible so we prefer 3 holes in that grid.)
m)	Deshuttering of slab & hacking surface by using Tachha
n)	Curing Entire surface by 7 days
o)	Application of plaster upto 15mm thick on slab & beam surface by using river sand & cement.
p)	Water cure entire plastered surface by 7 days.

POUR CARD						
Name of Work:						
Location:						
Sr.No.	Activity Detail	Yes	No	Sign of Contractor's Engineer	Sign of Structural Consultant	Remarks
1	Fixing of MS Support					
2	Removing & cleaning of existing concrete carefully					
3	Applying two coats of alkaline rust converting primer-FEOVERT					

4	Applying anti-corrosive treatment to reinforcements by 1 p net rb / nitro zinc primer.					
5	Application of corrosion inhibitor (EPCO kp 100) two coat to concrete surface					
6	Fixing of steel reinforcement					
7	Fixing of Shear key					
8	Fixing of cover to the steel					
9	Providing and applying structural grade epoxy latex bond coat of EPIBOND 21lp					
10	Checking shuttering line level					
11	Mixing of Micro concrete by using stirrer (Pure Micro concrete)					

INDICATIVE CHECK LIST

Project:

Column/Beam/Ceiling/Floor:

Check List No

E. GROUTING AND SEALING:

1. Grouting for Surface Repair:

1.1.1. PRODUCTS.

- 1.1.1.1. All components used for grouting repair system are to be from one of the approved makes of polymers. All components are to be of the same make. No components of different makes can be used in conjunction with each other.
- 1.1.1.2. The products shall only be from the approved list of companies.
- 1.1.1.3. Proper care is to be taken when using the material to maintain the required consistency and purity.
- 1.1.1.4. Only polymer latexes based on styrene butadiene (SBR) or acrylics can be used. The latex should have solid to a maximum of 45% and minimum of 35%. The physical, chemical and structural properties of the material used are to be submitted and specific approval to be seeked for the material/system to be used.

1.1.2. SURFACE INSPECTION AND PREPARATION

- 1.1.2.1. All surfaces to be treated are to be exposed to the base level with removal of all claddings, plasters, facades, waterproof layers etc. The surface is to be examined for surface cracks, crevices, spalls and honey combing.
 - 1.1.2.1.1. Concrete surface to which treatment is to be applied shall be freshly exposed parent concrete free of loose and unsound materials. Prepare surfaces by mechanical

abrasion unless prohibited by environmental limitations in which case acid etching may be used.

1.1.2.1.2. Mechanical abrasion: - Use sandblasting or scarifying or water blasting or other approved means.

1.1.2.1.3. Acid etching: -Etch surface with a commercial grade (22 deg Baume) of hydrochloric acid diluted at a ratio of 10:90 to 20:80. After this application, scrub surface with a stiff bristled broom, brush, or similar implement. Immediately after foaming action of acid has subsided, flush surface with water jets until all residue is removed. Repeat procedure until laitance is completely removed. Wash such areas with water at least three times and allow to air dry prior to further treatment. This method of cleaning is to be used only in exceptional cases and under normal cases permission will not be given for use of this method.

1.1.2.2. Inspection of concrete surfaces prior to mortar application

1.1.2.2.1. Inspect all concrete surfaces prior to application of mortar to ensure that requirements of this Article are met

1.1.2.2.2. Surfaces shall be free of any deleterious materials such as laitance, curing compounds, dust, dirt, and oil. Materials resulting from surface preparation specified shall be removed.

- All concrete surfaces shall be dry unless a water - insensitive coating is used. Surface temperature shall be at least 40F to permit wetting of concrete surface by polymer coating.
- Evaluate moisture content for concrete by determining if moisture will collect at surfaces. This may be accomplished by taping a 4 x 4 ft polyethylene sheet to concrete surface. If moisture collects on underside of polyethylene sheet before polymer would cure, then allow concrete to dry sufficiently. Drying of the surfaces can be accomplished by either heating the surfaces by blowlamps or by use of sawdust, sand or any other means so that the surface is bone-dry.

1.1.3. Identification of method of grouting.

1.1.3.1. Locate the cracks by either surface inspection or by scrubbing the surface. In case the cracks are not visible to naked eye use compressed air to clear the crack marks. Having identified the cracks use light chisel or mechanical/ electrical saws to clear the crack upto the depth of the crack. In case widening of the crack is necessary to reach the depth of the crack it is advisable to do so at this juncture.

1.1.3.2. After clearing/ widening the crack use compressed air/ water jet to clean the opened crack surface. Ensure that the surface is dried in case water jet is used.

1.1.3.3. A method of grouting through three rows of grout nipple is to be adopted for all such cases. Insertion of the grout nipples are as per the specification. The section shall then be subjected to a series grouting as per specification. This grouting shall be adopted with a mix of proper consistency. Once the grouting is completed the top surface shall be cleaned and brought to level. The surface shall be then left for proper setting of the grout for about 48 hours.

1.1.3.4. Proper curing and safety precaution that form the integral part of the specification herein under referred shall be also followed in totality. The surface shall be ponded with water for ten days to test leakage.

2. Grouting for Distressed Concrete:

2.1. PRODUCTS.

2.1.1. All components used for grouting repair system are to be from one of the approved makes of polymers. All components are to be of the same make. No components of different makes can be used in conjunction with each other.

2.1.2. The products shall only be from the approved list of companies.

- 2.1.3. Proper care is to be taken when using the material to maintain the required consistency and purity.
- 2.1.4. Only polymer latexes based on styrene butadiene (SBR), acrylics, or epoxies can be used. The latex should have solid to a maximum of 50% and minimum of 40%. The physical, chemical and structural properties of the material used are to be submitted and specific approval to be sought for the material/system to be used.

2.2. Surface inspection and preparation

- 2.2.1. All surfaces to be treated are to be exposed to the base level with removal of all claddings, plasters, facades, waterproof layers etc. The surface is to be examined for surface cracks, crevices, spalls and honeycombing.
 - 2.2.1.1. Concrete surface to which treatment is to be applied shall be freshly exposed parent concrete free of loose and unsound materials. Prepare surfaces by mechanical abrasion unless prohibited by environmental limitations in which case acid etching may be used.
 - 2.2.1.2. Mechanical abrasion: - Use sandblasting or scarifying or water blasting or other approved means.
 - 2.2.1.3. Acid etching: - Etch surface with a commercial grade (22 deg Baume) of hydrochloric acid diluted at a ratio of 10:90 to 20:80. After this application, scrub surface with a stiff bristled broom, brush, or similar implement. Immediately after foaming action of acid has subsided, flush surface with water jets until all residue is removed. Repeat procedure until laitance is completely removed. Wash such areas with water at least three times and allow to air dry prior to further treatment. This method of cleaning is to be used only in exceptional cases and under normal cases permission will not be given for use of this method.

2.2.2. INSPECTION OF CONCRETE SURFACES PRIOR TO MORTAR APPLICATION

- 2.2.2.1. Inspect all concrete surfaces prior to application of mortar to ensure that requirements of this Article are met.
- 2.2.2.2. Surfaces shall be free of any deleterious materials such as laitance, curing compounds, dust, dirt, and oil. Materials resulting from surface preparation specified shall be removed.
- 2.2.2.3. All concrete surfaces shall be dry as defined below unless a water - insensitive coating is used. Surface temperature shall be at least 40F to permit wetting of concrete surface by polymer coating.
- 2.2.2.4. Evaluate moisture content for concrete by determining if moisture will collect at surfaces. This may be accomplished by taping a 4 x 4 ft polyethylene sheet to concrete surface. If moisture collects on underside of polyethylene sheet before polymer would cure, then allow concrete to dry sufficiently. Drying of the surfaces can be accomplished by either heating the surfaces by blowlamps or by use of sawdust, sand or any other means so that the surface is bone-dry.

2.3. Identification of Method of Grouting.

2.3.1. FOR ALL SURFACES HAVING CRACKS/ CREVICES

- 2.3.1.1. Locate the cracks by either surface inspection or by scrubbing the surface. In case the cracks are not visible to naked eye use compressed air to clear the crack marks. Having identified the cracks use light chisel or mechanical/ electrical saws to clear the crack up to the depth of the crack. In case widening of the crack is necessary to reach the depth of the crack it is advisable to do so at this juncture.
- 2.3.1.2. After clearing/ widening the crack use compressed air/ water jet to clean the opened crack surface. Ensure that the surface is dried in case water jet is used.
- 2.3.1.3. A method of grouting through three rows of grout nipple is to be adopted for all such cases

3. GROUTING FOR HONEY COMBED SURFACES:

- 3.1. For surface which exhibits honeycombed concrete, the surface has to maintain in its dry state and a method of grouting through triangular grout nipples is to be adopted.

3.2. The opposite side to the grouting surface has to be sealed for flowing grout by either impervious cement plaster or by use of proper sealant as specified in the material to be used for grouting.

3.3. SIZE AND SPACING OF NIPPLES.

3.3.1. To determine the size of nipples, use a standard caliper or a metric scale and measure the width of the opened crack. The size of the nipple to be fixed within the crack has got to be minimum half the surface width of the crack measured above but should not exceed 15 mm in dia.

3.3.2. The nipples to be used should be of metal with one end tapered and thickness should be sufficient to withstand 5 m head of water. The spacing for the crack depends inversely to the width of the crack and will not exceed more than 300mm c/c and will not be less than 125mm c/c. The number of nipples along the crack will always be 1 less than two rows of nipples that needs to be fixed parallel to the crack at the same distance as the nipples spacing in the crack so as to form equilateral triangle with the apexes in the crack.

3.4. SEQUENCE OF GROUTING

For all horizontal surface grouting simultaneous grouting through of manifold pipe system is recommended. The grout pressure required to be given should be min 'X' for 'X" of slab. For grouting vertical surface bottom most row of nipples is to be grouted simultaneously.

- 3.4.1. When a row or a nipple is grouted and no more grout passes through that nipple/row of nipple then that nipple/ row of nipple is to be cut and sealed.
- 3.4.2. After the grout in the first nipple/ row of nipple cures then subsequent row is to be treated. This process shall be continued till all the nipples/ row of nipples are grouted.
- 3.4.3. All the nipple /rows of nipple on that surface has to be treated before any change of direction is to be adopted. In case of change of direction, the same sequence has to be adopted.

3.5. FIXING OF GROUT NIPPLES.

All nipples are to be fixed in oversize drill hole extending to min. half of slab thickness but not exceeding 2/3 of slab thickness. They should be as erect as possible and drilled holes are to be properly sealed using proper sealants (impermeable). All surface cracks are also be sealed similarly. This operation to be completed min. 24 hrs. Prior to grouting operation. While using sealants epoxy-based system or latex based are to be used. However, combination of two will not be permitted. After the grouting operation is over remove all pipes, manifolds installed and cut all the nipples, flush to the slab base and seal them with the same sealant used for sealing the crack. In case of exposed R.C. walls and slab surfaces cover them with appropriate quality of plaster and slurry finish the surface for smoothness. Plastering and cement slurry is to be measured and paid separately under appropriate heads in bill of quantity. (Grouting to be adopted for one surface only.)

3.6. MATERIAL FOR GROUTING

Latex based polymer modified cement slurry is to be used for grouting. The ratio to be used shall be 20 kg of chemical to every bag of cement. The slurry has to be kept in its slurry form by timely stirring by manual or mechanical means at regular intervals during the process of grouting. Once the operation starts grouting should not be stopped unless the grout oozes out of the adjoining nipple or level of grout in the container does not change over a period of not more than 30 minutes.

All materials shall be supplied in sealed containers with labels legible and intact.

Contractor shall arrange to store all materials at temperatures between 5 to 30 deg. Celsius unless otherwise recommended by manufacturer.

All materials shall be handled in a safe manner and in a way to avoid breaking container seals.

Contractor shall comply with manufacturer's recommendations as to environmental conditions under which the material can be used/ applied.

4. POLYMER & GROUT TECHNIQUE OF WATER PROOFING:

The following specifications need to be followed to be able to achieve the desired result of treating a porous slab section and also creating a separate water proofing layer.

4.1. Pre-Treatment.:

- 4.1.1. Top Surface: All the wearing coats and water proofing layer existing on the present slab should be removed and the surface properly cleaned. The original slab surface shall be properly cleaned with a water jet prior to application of any treatment. In case of the surface having carbonation or corrosion related distress, this has to be treated first without the final coat of cover built-up being done.
- 4.1.2. Bottom Surface: The plastered surface has to be cleaned and removed. The surface cleaned properly and the surface cracks are to be opened. In case of the surface having carbonation or corrosion related distress, this has to be treated first without the final coat of cover built-up being done. The cracks which are of micro and minor nature (less than 10mm thick) shall be kept open.
- 4.1.3. Pre grouting: Pre grouting shall be adopted to clean the section of any deleterious material. The mix to be used for this grouting shall be very lean and with maximum viscosity and maximum set time. This grouting is to be adopted to clean the section and once grout starts to flow from the bottom surface. All other specification of nipple placement and depth of fixation shall be as per detailed specification.
- 4.1.4. Bottom surface Sealing: Once the pre-grouting is completed all cracks and crevices that are visible shall be filled with a proper crack filling sealant of approved make. The surface shall then be properly plastered with a polymer modified mortar as per specification TS 10 and brought to proper shape and size. Any other treatment preceding this step shall be taken after about four days of curing.

4.2. Grouting: The section shall then be subjected to a series grouting as per specification. This grouting shall be adopted with a mix of proper consistency. Once the grouting is completed the top surface shall be cleaned and brought to level. The surface shall be then left for proper setting of the grout for about 48 hours.

4.3. Surface Water proofing treatment. The top surface shall be treated for a two coat chemical water proofing treatment. The treatment shall be preceded by placing proper wearing coat/ layer of a material as may be essential for the usage of the slab. All wearing coat shall be placed on the top of water proofing layer in a proper manner so as not to puncture or pierce the WPL. Proper anti- skid layer shall also be adopted on the wearing coat.

4.4. Curing: Proper curing and safety precaution that form the integral part of the specification shall be also followed in totality.

F. WATERPROOFING:

1. Waterproofing of Terraces:

Waterproofing of terraces is carried out as described below and in the same sequence:

- 1.1. Break and remove old waterproofing treatment from terrace slab.
- 1.2. Remove the plaster from the parapet walls etc. upto atleast 300 mm. height from the slab top level.
- 1.3. Thoroughly chip and roughen exposed concrete. Rake out the joints of brickwork. Clean with wire brushes and wash thoroughly with plenty of water.
- 1.4. Any loose patches in base concrete shall be first repaired. If any steel is exposed, clean it and apply a protective coating. If any cracks are seen, open and seal them as directed by the consultant.

- 1.5. Cut in a form of "V" the junctions between walls and floor. Fix small pieces of brickbats along with 20 mm (3/4") metal for coving of Watta (rounding) at the bottom of parapet wall.
- 1.6. Add one bag of cement in hundred liters of water. Stir the mixture to get consistent cement slurry. Spread this slurry on terrace and allow it to penetrate uniformly over the cleaned surface. Use well burnt brickbats for terrace waterproofing.
- 1.7. Fix (line Dori) in a slope 1:125 starting from the lowest point from rainwater down take and by keeping 65 mm (2.5") minimum thickness below rainwater outlet.
- 1.8. Fix brickbats in cement mortar layer of 1:6 proportion in a slope of 1:125 with waterproofing compound. Fill the cement mortar 1:4 with waterproofing compound in brickbat joints. Block rainwater outlet with gunny bag to avoid entry of cement slurry into it.
- 1.9. Cure the brickbat coba coat for atleast seven days.
- 1.10. Lime mortar made from lime and fine sand in proportion of 1:5 is spread uniformly on the surface of 20 mm to 25 mm uniformly. This bed is left to harden for one day.
- 1.11. The design pattern if any is to be marked over this bed with the use of cotton line string. A splash of water is sprinkled lightly on this bed and very little dry cement is spread for work area of next 15 minutes. Then pieces of china mosaic are pressed and filled in position. The joints between these two pieces shouldn't exceed more than 3 to 4 mm. These pieces are hammered with wooden mallet to achieve uniform surface. Make the projected edge (kani) between the parapet plaster and the watta on second day.
- 1.12. The surface is cleaned with saw dust to remove excess cement sticking to the glazed china mosaic surface. If surface is not cleaned thoroughly by this method then the same shall be cleaned with dilute acid after one month, as directed by the consultants.
- 1.13. Completed work is then cured for 15 days by ponding method.

2. Waterproofing of Chajjas/Balcony/Tank Top:

- 2.1. Clean the top of the chajja and chisel extra mortar if any.
- 2.2. Apply thick cement slurry over the top of chajja.
- 2.3. Apply 1:1½:3 metal screen or brickbat coat.
- 2.4. Making rounding of 6" radius on the wall (watta) at the junction of chajja and wall of the building.
- 2.5. Cure this coat for seven days.
- 2.6. Apply finishing coat with C.M. 1:4 with waterproofing compound.
- 2.7. Provide drip mould at the bottom edge of chajja alongwith finishing coat.
- 2.8. Apply cement slurry with water-proofing compound for smooth finish (ghotai). Polish with metal float and make impression by 2mm diameter cotton line dori for avoiding cracking.
- 2.9. Cure the water-proofing for atleast seven days with soaked gunny bags.

3. Internal Waterproofing Overhead Tank:

- 3.1. Waterproofing of tank is carried out as described below and in the same sequence.
- 3.2. Break and remove old waterproofing treatment & plaster if any.
- 3.3. Thoroughly chip and roughen exposed concrete. Clean with wire brushes and wash thoroughly with plenty of water.
- 3.4. Any loose patches in base concrete shall be first repaired. If any steel is exposed, clean it and apply a protective coating. If any cracks are seen, open and seal them as directed by the consultant.
- 3.5. Cut in a form of "V" the junctions between walls and floor. Fix small pieces of brickbats along with 20 mm (3/4") metal for coving of watta (rounding) at the bottom of wall.

- 3.6. Add one bag of cement in hundred liters of water. Stir the mixture to get consistent cement slurry. Spread this slurry on slab and allow it to penetrate uniformly over the cleaned surface.
- 3.7. Providing and applying a base coat comprising of 1 Kg Polydee-MC OR Equivalent and 1 Kg fresh cement after wetting the surface followed by drying the surface for 2 days.
- 3.8. Apply primer coat of TP-40 OR Equivalent chemical.
- 3.9. After drying, applying two component (mixing ratio 2 A: 1 B)) Antibacterial food grade coating inside drinking water tank in two coats with time interval of minimum 8 hrs.
- 3.10. Completed work is then cured for atleast 03 days by ponding method.

G.PLASTERING WORK:

1. External Plaster:

1.1. The external plaster shall be applied in two coats and finished sand-faced.

- 1.2. All the precautions such as covering windows by plywood/tin sheets and tying stitched Hessian to external face of the scaffolding shall be taken. The debris shall be taken down and stacked or carted away as directed.
- 1.3. If the existing plaster is defective, the loose and damaged plaster shall be broken and removed carefully by chipping or by light chiseling, so as not to disturb the sound concrete/brickwork inside.
- 1.4. If the plaster is to be applied on unrepaired concrete surface the exposed concrete surface shall be first roughened by close chipping, and then cleaned with brushing and washing. If roughening of concrete is not possible, then a bond coat such as hack aid Plast or equivalent at the interface shall be provided.
- 1.5. If the plaster is to be applied on repaired concrete surface, the base shall be kept rough to provide a key to the plaster.
- 1.6. If brickwork is to be plastered, the joints shall be raked out atleast 8 mm. deep and cleaned.
- 1.7. The surface to be plastered shall be cleaned of loose materials, is thoroughly watered and kept adequately wet during plastering.
- 1.8. If plaster is done in patches, the bond coat must also be applied on the edges of old plaster in contact with new plaster.

1.9. The external plaster shall be applied in two coats: -

- 1.9.1. **The first coat is mortar in cement:** sand 1:4 proportions, with a water cement ratio not exceeding 0.45. The surface shall be even and without any undulations so as to have a thin second coat. The first coat is made rough to provide a key to the second coat. The base plaster shall be thoroughly watered and cured for minimum two days before the second coat is applied. If second coat is not to be done immediately, then minimum seven days curing must be done.
- 1.9.2. **The second coat shall be a thin layer of mortar with cement:** sand 1:5, using, fine washed sand and the approved additive, applied evenly by a trowel and finished to required granular texture by a rubber sponge. The final line, level and plane shall match the existing unbroken plaster. The second coat shall be kept wet by watering and shall not be allowed to dry for at least seven days.

2. Internal Cement Plaster / Ready Mix Plaster With POP/PUTTY Finish

The cement mortar used shall be in proportion 1:4 unless otherwise specified. One part of Portland cement shall be dry mixed with four parts of sand, sufficient water shall then be added to make a homogeneous mixture. Mortar usable within 1/2 hour only should be prepared at a time. Joints in brick and stone masonry shall be raked out to receive the plaster and concert surfaces shall be hacked and washed well before plastering. The brick work shall be kept wet

for at least six hours before plastering. A first coat of plaster of requisite thickness shall be applied and shall be finished with a coat of plaster of Paris or OR White Putty not less than 4mm thick. This is used only as a finishing coat. Line and level of the surface shall be done in plaster.

3. Separation Joint Filling with Chicken mesh 22 SWG:

3.1. Materials: Chicken wire mesh shall be 22 gauge of approved manufacturers, unless specified.

3.2. Fixing: The chicken wire mesh shall be provided at the junction of RCC and masonry work 150mm overlap on either side fixed with 'U' nails. 150mm centre to centre before plastering the junction.

3.3. Measurement: Length and breadth shall be measured correct to a centimeter (cm) and its area shall be calculated in Square meters (Sq.Mt.) correct to two places of decimal.

H. PLUMBING AND SANITARY WORK

1. Stone Ware Pipes:

1.1. Drain shall be laid in straight lines and to even gradient as shown on the drawings. Adequate care shall be exercised in setting out and determining the levels of the pipes and the Contractor shall provide substitute instruments, templates and equipment necessary for the purpose.

1.2. The pipes before being laid shall be thoroughly cleaned specially the inside. Cracked or chipped pipes shall not be used on the work.

1.3. The pipe joints shall be caulked with tarred gasket in one length for each joint, and sufficiently long to entirely surround the spigot end of the pipes, the gasket to be driven as far as possible into the joint by means of a suitable instrument. The spigot shall be centered in the socket and after the joint has been thoroughly cleaned and moisturized the socket shall be filled with neat cement paste which shall be sprayed off to form a neat fillet round the pipe. Each pipe shall be properly boned in so that the invert is to a true and even gradient. Whenever practicable all main drains shall be commenced at the point of the outfall, the necessary junctions for the branch drains being inserted as the work proceeds until the mains are completed. The branch drains shall then be commenced at the point of the junction with main drains. The whole of the drain pipes shall be accurately laid and butted closely together at the joints. Any earth, cement or other material entering the pipe line while jointing shall be thoroughly cleaned out of the pipes as the work proceeds.

1.4. Concrete bedding for drains shall, unless otherwise specified be of C.C. 1:2:4, 150mm thick and of width specified benched half way upon both sides to the crown of the pipes.

1.5. After sufficient internal has been allowed for the joints to set and before filling the trench, the joints of the pipes and drains shall be proved watertight by filling the pipes with water to a level 2M above the top of the highest pipes in the length to be tested, closing the ends of the sections and maintaining this water level for a period of one hour. If the testing is to conform to regulations of the local authorities it shall be done accordingly to the satisfaction of the local Authorities.

1.6. All such testing shall be done wholly at the Contractor's expense inclusive of apparatus, provision of water etc. and the rate covers all the above works including C.C.C. bedding etc.

2. Solid Waste and Anti Syphonage Pipes:

All solid pipe shall be of PVC with spigot and socket joints with head on spigot end. The pipes shall be secured to the masonry as specified. Solid pipes shall not be less than 100mm internal dia.

Waste pipe to be of PVC/UPVC as specified; internal waste pipes should be connected to the inlet of sealed ventilated gully and external gully to the inlet of open gully or as specified. The joint of the gully shall be appropriate to the material. All waste pipes shall be tested to the Engineer's satisfaction with a 1.5M head of water.

Anti - Syphonage Pipes:

The traps on branch soil pipe shall be ventilated at a point not less than 75mm or not more than 30cm. from the highest point, may be of lead PVC or UPVC joints appropriate to those materials of dia., not less than 50 mm for W.C. and urinal. The size of main branch antisiphonage pipes serving a number of fittings shall be determined by the number connected thereto. The antisiphonage pipe may be connected to the main soil pipe above the level of the top most sanitary fitting or run upwards independently.

PVC/UPVC PIPES (SOLID WASTE):

PVC pipes shall conform to IS specification for high-density polyethylene pipes for drainage work. The pipes shall have smooth internal and external surfaces. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible provided that the wall thickness remains within the permissible limits PVC pipes shall be pressure ratings (working pressure) as indicated. The pipes shall carry Colour bands to indicate the class of pipes.

Class of pipes	Working pressure Mpa)	Colour
class 1	0.2	Orange
class 2	0.25	Red
class 3	0.4	Blue
class 4	0.6	Green
class 5	1	Yellow

3. CPVC pipes (POTABLE WATER): -

CPVC pipes shall confirm to IS 4985 - 1981, Specification for CPVC pipes for potable water supply. The pipes shall be reasonably round. Internal and external surfaces of the pipes shall be smooth and clean, CPVC pipes shall be pressure ratings (working pressure) as 2 - 5, 4.5 and 10Kg / sq. cm. as indicated.

CPVC pipes of all sizes are packed in polyethylene packing rolls and both the ends of the packed roll are sealed with air bubble film cap in order to provide protection during handling and transportation. After packing, the whole bunch of pipes is tightened with polypropylene/ HOPE strapping. Each role is then marked with size/type of the pipe, lot number and quantity. The packed pipe rolls are stored in their respective racks in properly covered storage area. Apart from providing protection during handling and transportation, the packing rolls also protect the pipe from ultra violet rays.

INSTALLATION GUIDELINES:

1. Visually inspect pipe ends before making the joint. Use of a chamfering tool will help identify and crakes, as it will catch on to any crack.
2. Pipe may be cut quickly and efficiently by several methods. Wheel type plastic tubing cutters are preferred. Ratchet type cutter or fine-tooth saw are another option. However, when using the ratchet cutter be certain to score the exterior wall by rotating the cutter blade in circular motion around the pipe. Do this before applying significant downward pressure to finalize the cut. This step leads to a square cut. In addition, make sure ratchet cutter blades are sharp. Cutting tubing as squarely as possible provides optimal bonding area within a joint.
3. Burrs and filings can prevent proper contact between the tube and fittings during the assembly, and should be removed from the outside and inside of the tube. A chamfering tool is preferred, but a pocket knife or file is also suitable for this purpose.

4. Use only CPVC cement jointing. Use CPVC cement, which is fully recommended by the manufacturer.
5. When using adhesive solution/solvent cement be certain of proper ventilation.
6. When making a join, apply a heavy, even coat of cement to the pipe end. Use the same applicator without additional cement to apply a thin coat inside the fitting socket. Too much cement can cause clogged waterways. Do not allow excess cement to puddle in the fitting and pipe assembly. This could result in a weakening of the pipe wall and possible pipe failure when the system is pressurized.
7. Rotate pipe one-quarter to one-half turn while inserting it into the fitting socket and remove the excess adhesive solution/solvent cement from the joint with clean rag.
8. When making a transition connection to metal threads, use a special transition fitting or CPVC male threaded adapter whenever possible. Do not over-torque plastic threaded connections. Hand tight plus one-half turn should be adequate.
9. Hang or strap CPVC systems loosely to allow for thermal expansion. Do not use metal straps with sharp edges that might damage the tubing.
10. CPVC stub outs for lavatories, closets and sinks are appropriate. However, on areas where there is a likelihood that movement or impact abuse will occur, metal pipe nipples may be a more appropriate stub-out material. Showerheads, tub spouts and outside still cocks are examples.
11. When connected to a gas water heater, CPVC tubing should not be located within 50 cm of the flue. For water heaters lacking reliable temperature control, this distance may be increased up to 1 m a metal nipple or flexible appliance connector should be utilized. This measure eliminates the potential for damage to plastic piping that might result from excessive radiant heat from the flue.

Solvent welded joints of PVC pipes:

This technique to be used in all type of PVC Pipes.

4. VENT PIPES:

The solid pipe above highest branch shall be continued upwards of full size above the roof, flat or sloping to such height as directed or as required by local regulations PVC cowl shall be provided at the top all pips so projected above the roof shall be properly secured with stays.

There shall be two vent pipes, one at the sewer trap chamber (and Inlet) and the other at the manhole at the head to the drain. From a point as near to the top of manhole as possible a 100mm or 150mm salt glazed stone ware drain shall be laid on concrete bedding and this shall be carried to the pint indicated on the drawing or as directed. The drain shall be brought to the surface of the ground with a suitable bend and jointed to a 100mm to 75mm pipe of specified Material & height. This pipe shall be provided with cowl at the top.

NOTE: All pipes shall be measured in R.M. of pipes laid and fixed complete and shall be paid for at rates set out in the priced schedule of quantities inclusive of all accessories.

5. GULLY TRAP AND CHAMBERS:

Gully traps shall be 150mm x 150mm glazed stone ware laid on 15cm. bed with cement plaster rubbed smooth. A full size shall be 300mm x 300mm or as specified. Cast iron frame and cover painted two coats hot tar shall be fixed securely on top. The rate includes all these works specified.

Sewer trap of approved make and size of slat glazed earthward shall be built into outfall manhole. The interceptor shall have cascade, clincher stopper with length of galvanized chain secured to a staple built into the wall the wall of the manhole joint below the cover.

6. PAINTS (PLUMBING LINES):

Acrylic Emulsion: All the surface to be painted shall be clean and dry. All dirt, dust, oil, grease etc. shall be removed from the surface to be painted. Loose paint shall be removed

by sand paper. Primer shall be applied of approved manufacturer. All coats to be laid evenly and properly with brush, the work should not show any hair marks, drops of paint and shall be allowed to dry thoroughly before the next coat is applied.

Cement Paint: The surface to be painted shall be thoroughly cleaned and soaked in water. Afterwards cement paint shall be applied of approved shade and colour. After each coat the surface shall be wetted before the next coat is applied. The paint surface shall be cured by keeping it moist for seven days.

Bases	:	These shall be of best white lead, red lead, zinc white or oxide of iron of approved make.
Vehicles	:	The solid shall be double boiled linseed oil and shall appear, when filled in a phial, limpid pale and brilliant. It shall taste sweet, with very little odor and shall be of approved quality. Solvents shall be spirits or turpentine.
Pigments	:	These shall be of selected tinge and of approved make.
Mode of Measurement	:	The average perimeter for all PVC pipe shall considered as that of 4" PVC pipe. The average perimeter for all UPVC/CPVC pipe shall considered as that of 1" UPVC/CPVC pipe. Painting area for pipes will be measured in M ² (Area = Perimeter * Height)

I. PAINTING:

1. WHITE / COLOUR WASHING:

1.1. Materials:

- 1.1.1. The materials for preparing lime wash shall be freshly burnt fat lime of good quality free from unburnt stone or other foreign matter. Lime shall be of "C" type as mentioned in IS 712.
- 1.1.2. Lime shall be slaked on the spot, mixed and stirred thoroughly with sufficient quantity of water (about 4.5 liters per Kg. Of lime) to make a thin cream. This shall be allowed to stand for a period of 24 hours and then strained through a clean coarse cloth. Clean gum dissolved in hot water shall then be added in the proportion of 4 gm. of gum Arabic to one liter of lime cream to prevent lime wash coming off easily when rubbed.
- 1.1.3. Indigo (Neel) up to 3 gm per Kg of lime dissolved in water shall be added and stirred well. Water at 5 liters per Kg. of lime is then added to produce a milky solution.
- 1.1.4. Alternatively, readymade whiting (ground white chalk) complying with IS 63 can be used. In this case whiting shall be dissolved in sufficient quantity of warm water to form thin slurry, which shall then be screened through a clean coarse cloth. 2 gm. Of gum and 0.4 gm. Of copper sulphate dissolved separately in hot water shall be added for every liter of the slurry, which shall then be diluted with water to the consistency of milk for use. Rice size may be allowed instead of gum.
- 1.1.5. Colour wash shall be lime wash as above to which a solution of water and lime fast pigment, boiled if directed, shall be gradually added and stirred until the required tinge is available.

2. PAINTING

All the water base and oil base paints such as distemper, cement paint, enamel paint, flat oil paint etc. shall be of approved manufacturers and shall conform to the respective IS Codes and Standards. Colour and Shade shall be as approved by the Engineer-In-Charge.

2.1. Supply

All paint materials shall be supplied to the Site in the manufacturer's sealed and branded containers. Any containers reaching site with broken seals are liable for instant rejection by the Engineer-In-Charge.

2.2. Storage

All paint materials shall be stored in cool dry conditions clear of other stores to the satisfaction of the Engineer-In-Charge.

2.3. Usage

The mixing of materials of different brands before or during application shall not be permitted.

Brushes, pails, kettles and other implements and tools used in painting or preparation of the work shall be clean and free from foreign matter.

The instructions of the manufacturer shall be followed regarding preparation of surface and application of priming and finishing coats. In any event the following engineering practices shall always be followed while carrying out work as specified in IS 2395 Part-I & Part-II.

- ❖ No exterior or exposed painting shall be carried out under adverse weather conditions such as rains, extreme humidity, dust storms etc.,
- ❖ The work shall preferably be carried out in shade to avoid blistering or wrinkling due to direct sunlight.
- ❖ All surfaces to be painted shall be free of loose matter, efflorescence, dust etc. before application of each coat.
- ❖ No paint shall be applied to works, which are internally or superficially damp.

2.4. Preparation of Surfaces General

All surfaces requiring paint shall be thoroughly cleaned of all dirt, dust, grease or oil before spotting or priming. Oil or grease film shall be washed off with an acid that is non-injurious to the surface or shop primers and rinsed off completely with plain or soapy water. Surfaces shall be dry unless dampening is required for a particular finished material.

Before starting the work, the Contractor shall obtain the approval of the Engineer-In-Charge regarding the soundness and readiness of the surface to be painted on.

2.5. Masonry, Concrete and Plastered Surfaces

Surface shall be free from all efflorescence, mildew, loose paint or other foreign and loose materials. Surface with mildew or efflorescence shall be treated as follows:

- ❖ All mildewed surfaces shall be treated with an approved fungicide such as ammoniacal wash consisting of 7 gm. of copper carbonate dissolved in 80 ml. Liquor ammonia and silica fluoride solution and allowed to dry thoroughly before paint is applied.
- ❖ All efflorescence shall be removed by scrubbing and affected surfaces shall be treated with a solution of muriatic acid in water (1:6 to 1:8) and washed fully with clean water and allowed to dry thoroughly.

Masonry cracks shall be cleaned out and patch filled with mortar similar to the original surfaces uniformly textured. Where this type of re-surfacing may lead to the finishing paint being different

in shade from the original surface, the surfaced area shall be treated with minimum one coat of cement primer, which shall be continued to the surrounding area from a distance of 100mm.

The plastered surface shall be carefully rubbed smooth and thoroughly cleaned with clean fresh water.

1.2. Equipment and Protection

All brushes used for the job shall be clean and in good condition.

Spray painting equipment shall be a type that will produce full, even coatings, shall be equipped with grease and water separators and kept properly clean and well maintained at all times.

Sufficient drop cloths, shields and other protective equipment shall be used to prevent sprays or droppings from fouling surfaces not being painted. Empty containers, saturated rags and waste shall not be allowed to accumulate. Any required ventilating or isolating measures for protecting his workmen and others from toxic or unhealthy conditions due to painting shall be provided by the Contractor.

3. OIL BOUND DISTEMPER

In regards to materials, surface preparation, application, equipment & protection, cleaning etc. shall be as described above.

3.1. Application Priming coat

The priming coat shall be with distemper conforming to IS: 428 in one coat. After the surface defects are treated with Putty/POP which is allowed to set hard and wiped clean, the priming coat is applied with distemper primer (when wall surface has not dried completely).

Newly plastered if required to be distempered before a period of six months shall be given a coat of alkali resistant priming paint conforming to IS: 109 and allowed to dry for at least 48 hours before distempering is commenced.

3.2. Distemper coat

After the primer coat has dried at least for 48 hours, the surface shall be lightly sand papered to make it smooth. Distemper is then applied in dry weather with a broad stiff brush in long paralleled strokes, each coat being allowed to dry before the next coat is applied. The subsequent coats shall be applied in the same way. Two coats of distemper shall be applied over primer coat to obtain an even shade. A time interval of at least 24 hours shall be allowed between successive coats to permit proper drying of preceding coat. For old work the distemper shall be applied over the prepared surface in the same manner as in new work. 15 cm double bristled distemper brushes shall be used. After each day's work, brushes thoroughly washed in hot water with soap solution and hung down to dry. Old brushes which are dirty and caked with distemper shall not be used on the work.

4. PLASTIC EMULSION PAINT:

Materials, surface preparation, Application, Equipment and protection, cleaning etc. shall be as described under- Painting specifications. The plastic emulsion paints is not suitable for application on external, wood, and iron surface, which are liable to heavy condensation. These paints are to be used on internal surfaces except wooden and steel. Plastic emulsion paints as per IS: 5411 of approved brand and manufacture and of the required shade shall be used.

4.1. Application

The paint is mixed thoroughly adding about 50% water and then strained through a cloth. The paint is then applied on wall and allowed to dry thoroughly. A putty is prepared by mixing whiting and paint and is filled wherever necessary in holes depressions etc.

For the second coat only about 15 to 20% water is added.

(The correct quantity of water to be added shall be as per manufacturer's instructions)

The number of coats shall be two unless otherwise specified in the item. The paint will be applied in the usual manner with brush, spray, or roller. The paint dries by evaporation of the water content and as soon as the water has evaporated the film gets hard and the next coat can

be applied. The time of drying varies from one hour on absorbent surfaces to 2 to 3 hours on non- absorbent surfaces.

5. OIL PAINT:

Materials, surface preparation, application, equipment & protection, cleaning etc. shall be as described under-Painting specifications.

5.1. Application

Unless otherwise specified, paint shall be applied with brushes. The contents of the drum and tins shall be well stirred before using and occasionally during the use to prevent sedimentation at the bottom.

5.2. Priming coat

The priming coat shall be made up of materials depending on the surfaces to be plastered and specified or recommended by the manufacturer.

The primer shall be ready mixed primer of approved brand and manufacture and shall be compatible with finished painting scheme.

Where primer for wood work is specified it shall be prepared as per manufacturers specifications. The wood work to be painted shall be dry and free from moisture. The surface shall be thoroughly cleaned. All unevenness surface shall be rubbed down smooth with sand paper and shall be well dusted. Appropriate filler material conforming to IS: 345 with same shade as paint shall be applied.

5.3. Finishing coat

Unless otherwise specified, the finishing shall be done in at least two coats of paint. The last coat shall give a flat, semi glossy or glossy finish as directed by the Engineer-In-Charge.

6. SYNTHETIC ENAMEL PAINT:

In regards to materials, surface preparation, application, equipment & protection, cleaning etc. shall be as described above. Synthetic enamel paint conforming to IS: 2932 shall be of approved brand and manufacture and of required shade.

6.1. Application Priming coat

Primary coat shall be of ordinary paint of shade to match with the top coat as recommended by the same manufacture. As top coat shall be used. Under coat shall be allowed to dry overnight. It shall be rubbed next day with the finest grade of wet abrasive paper to ensure smooth and even surface, free from brush marks and all loose particles brushed off.

6.2. Finishing coat

It shall be applied on properly primed surface. Subsequent coat shall not be applied till the previous coat is dry. The previous coat shall be lightly sand prepared for better adhesion of subsequent coats.

Top coats of synthetic enamel paint of desired shade shall be applied after the under coat is thoroughly dry. Additional finishing coats shall be applied if found necessary to ensure properly uniform glossy surface.

Unless otherwise specified, the finishing shall be done in at least two coats of paint. The last coat shall give a flat, semi glossy or glossy finish as directed by the Engineer-In-Charge. If, however, the surface is not satisfactory additional coats as required shall be applied to get correct finish.

7. WATERPROOF CEMENT PAINT:

In regards to materials, surface preparation, application, equipment & protection, cleaning etc. shall be as described above. The cement paint shall be conforming to IS: 5410 of approved brand and manufacture and of required shade.

7.1. Application Priming coat

Cement primer coat is used as a base coat on wall finish. The cement primer is composed of a medium and pigments which are resistant to alkalis present in the cement in wall finish and provides a barrier for the protection of subsequent coats. Primer coat material shall be as per recommendation of finish coat material. Primer coat shall be preferably applied by brushing and not by spraying on the clean dry and smooth surface. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours, before subsequent coat.

7.2. Finishing coat

The solution shall be applied on the clean and wetted surface with brushes or spraying machine. The solution shall be kept well stirred during the period of application. Cement paint shall be mixed with water in two stages and strictly as per manufacturer's instructions.

The surfaces shall be given one coat of paint. Care shall be taken so that the paint does not dry out too rapidly. After 4 to 6 hours, the water shall be sprinkled over the surface to assist curing and prevent cracking. After the first coat has dried (24 to 48 hours), the second coat shall be applied in a similar manner. The finished surface shall be kept moist by occasional sprinkling with water for seven days after painting.

Water proof cement paint shall not be applied on surfaces already treated with white wash, colour wash, distemper dry or oil bound, varnishes, paints etc.

8. SYNTHETIC TEXTURE PAINT:

In regards to materials, surface preparation, application, equipment & protection, cleaning etc. shall be as described below. The texture paint shall be conforming to IS: 5410 of approved brand and manufacture.

8.1. Application Priming coat

Primer coat is used before applying the base coat on external wall. Clean all external wall surfaces, removing all fungus / plantation, removing old caulk from the plaster surface, making the surface clean and dry. Pre wetting of wall surfaces. Primer coat shall be preferably applied by brushing and not by spraying on the clean dry and smooth surface. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours, before base coat.

8.2. Finishing coat

The solution shall be applied on the clean and wetted surface with required tools, equipment. Mixing the product with clean water thoroughly with an electrical mixer for 3-5 minutes until the desired homogeneous paste is achieved so as to ensure that the mixture is free from lumps before use. Applying average thickness of 1.5 to 2mm of the homogeneous paste thus prepared on the plastered surface with a steel trowel so as to have the desired texture finish.

9. ELASTOMERIC BASED PAINT:

Surface preparation, application, equipment & protection, cleaning etc. shall be as described below of approved brand and manufacture and of required shade.

9.1. Application Priming & Base coat

The basecoat is composed of a medium and pigments which are resistant to alkalis present in the cement in wall finish and provides a barrier for the protection of subsequent coats. Primer coat shall be preferably applied by brushing and not by spraying on the clean dry and smooth surface. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours, before subsequent coat.

9.2. Finishing coat

The solution shall be applied on the clean and wetted surface with brushes or spraying machine. The solution shall be kept well stirred during the period of application. Cement paint shall be mixed with water in two stages and strictly as per manufacturer's instructions.

The surfaces shall be given one coat of paint. Care shall be taken so that the paint does not dry out too rapidly. After 4 to 6 hours, the water shall be sprinkled over the surface to assist curing and prevent cracking. After the first coat has dried (24 to 48 hours), the second coat shall be applied in a similar manner. The finished surface shall be kept moist by occasional sprinkling with water for seven days after painting.

Water proof cement paint shall not be applied on surfaces already treated with white wash, colour wash, distemper dry or oil bound, varnishes, paints etc.

NOTE: The work should be carried out as per BOQ specification and instruction of consulting engineer in-charge, in case of any misunderstanding in any specification than only govt. DSR/SSR/SOR to be referred.

LIST OF MATERIALS OF APPROVED BRAND AND THEIR MANUFACTURES

(The Make Listed Below Should Be First Approved by the Bank before Use)

A. LIST OF MATERIALS FOR CIVIL, INTERIOR & ALLIED WORKS:

The materials, accessories, fittings, etc. be used in the civil, Electrical, plumbing and allied work shall be one of the following particular make or equivalents IS Make. The direction of selection of any particular make shall be rest with STRUCTURAL CONSULTANT /SBI.

Sr. No.	Category	Sub-Category	Brand Name
1	Cement	OPC 43/53 Grade (ISI marked)	Ambuja Cement, L & T, ACC, Birla, Ultratech
2	Cement	PSC (ISI marked)	Commando Cement Ltd., JSW Cement
3	Cement	White Cement	Ultra tech, ACC, Birla, J.K,
4	Cement	Chemical Admixtures & Micro Concrete	BASF, Sika, FOSROC.
5	Steel	Rebars	Vizag Nigam Ltd., SAIL, TATA
6	Steel	M.S. Pipe, Tubes, Bar, Flats, Angle, Tee Sections	SAIL, TISCO, TATA
7	Epoxy Coating	FBE Coating to Reinforcement Bars	Electrotherm India, Hariom Ingots, PSL
8	Wood & PVC Work	Wooden Flush Doors	Kutty, Anand, Anchor, Duro, Kent
9	Wood & PVC Work	Flush Door	Duraboard, Kit ply, MerinoPly
10	Wood & PVC Work	Flush Door Shutter	Green, Century or equivalent
11	Wood & PVC Work	Waterproof Ply	Green Ply, Garnet, Century
12	Wood & PVC Work	Commercial ply.	Garnet, Century, Donear, Green Ply
13	Wood & PVC Work	Veneer	Duro, Green, Donear, Century
14	Wood & PVC Work	Laminate	Greenlam, Century, Merino
15	Wood & PVC Work	Pre-laminated particle board-Exterior grade	Novapan, Merino, Anchorlam, Bhutan Board
16	Wood & PVC Work	Door Hardware	Ingersoll-Rand, Gaze, Dorma, Guardian, Dorset, Magnum
17	Wood & PVC Work	Door Lock & Handle	Ingersoll-Rand, Gaze, Dorma Guardian, D-Line
18	Wood & PVC Work	Door closer	Ingersoll-Rand, Gaze, Dorma, Guardian
19	Wood & PVC Work	Door Locks (Concealed / Surface mounted)	Ingersoll-Rand / Dorma, Haffle, Dorset
20	Wood & PVC Work	Locks	Dorset, Sobeet, Godrej
21	Wood & PVC Work	Door Handle (Concealed / Surface	Ingersoll-Rand, Gaze, Dorma, Alu Alpha
22	Wood & PVC Work	Stainless Steel Screws for fabrication and fixing of windows	Kundan/ Puja/ Atul
23	Wood & PVC Work	Butt Hinges openable Window shutters	Haffle, Alu Alpha
24	Wood & PVC Work	Mild Steel Butt Hinges/ Piano Hinges	Jolly, Garg, AMIT, ASI Supreme
25	Wood & PVC Work	Nuts Bolts /Screws	Kundan/ Puja/ Atul
26	Wood & PVC Work	Concealed Tower Bolt	Ingersoll-Rand, Alu Alpha

27	Wood & PVC Work	Glass	Saint Gobain, Asahi, Modi
28	Wood & PVC Work	Clear Float Glass	AIS Glass/ Saint Gobain/ Modiguard
29	Wood & PVC Work	Glass (Toughened)	Saint Gobain/ Modi Float/ Asahi Float
30	Flooring work	Vitrified Ceramic Tiles	Somani, Orient Bell, Kajaria, Johnson
31	Flooring work	Precast mosaic & P.C. Tiles	NITCO/ MODERN
32	Flooring work	Industrial Tile	Endura
33	Flooring work	Glazed Ceramic Tiles	Johnson Kajaria, Nitco, Somani, Swastik.
34	Finishing Works	Texture /Paint / primer / oil bound distemper / Acrylic paint	Asian Paints, ICI, Nerolac, Dulux, Berger
35	Finishing Works	Water proof cement paint	Snowcem India Ltd, Asian Paints, Berger, Nitco Cem
36	Finishing Works	Mirror	Modi Guard, Saint Gobain
37	Finishing Works	Anti-Corrosive Bitumastic Paint	Asian/Burger/J&N
38	Finishing Works	Epoxy Paint	Asian / Berger / J&N
39	Sanitary ware	Vitreous China Sanitaryware	Cera, Roca, Parryware
40	Sanitary ware	Concealed Flushing Cisterns	Cera, Roca, Parryware
41	Sanitary ware	European water closet	Parry ware, Hindware, Cera
42	Sanitary ware	Seat covers (Heavy Duty)	Parry ware, Hindware, Cera
43	Sanitary ware	Wash basin	Hindware, Parryware, Cera
44	Sanitary ware	C.P fittings & Bathroom accessories	Jaguar, Parry ware, Hindware, ROCA
45	Sanitary ware	Geysers	Racold, Venus, AO smith, jaguar
46	Sanitary ware	Soap Dispenser	Jaguar, Roca, Cera
47	Sanitary ware	Stainless Steel Sink	Nirali, Franke, Parry Ware, Cera
48	Sanitary ware	C.P Bottle Trap	Jaguar, Roca, Kohler, Parryware
49	Sanitary ware	Sink mixer with regular swinging spout	Jaguar, Hindware, Parryware
50	Sanitary ware	Basin mixer	Jaguar, Hindware, Parryware
51	Sanitary ware	Waste coupling	Jaguar, Hindware, Parryware
52	Sanitary ware	C.P. Grating	GMGR, Chilly, Viking
53	Sanitary ware	CP / SS Grating for Floor Trap & Floor Drain	Neer, Aco, Vijay
54	Sanitary ware	4way diverter concealed fitting, with built in non-return valves and diverter handle	Jaguar, Hindware, Parryware
55	Sanitary ware	Double coat hook	Jaguar, Hindware, Parryware
56	Sanitary ware	Towel Rack (600mm)	Jaguar, Hindware, Parryware
57	Sanitary ware	Towel Ring	Jaguar, Hindware, Parryware
58	Sanitary ware	Toilet Paper Holder	Jaguar, Hindware, Parryware
59	Sanitary ware	ANGLE COCK	Jaguar, Hindware, Parryware
60	Sanitary ware	Pillar COCK	Jaguar, Hindware, Parryware
61	Sanitary ware	Soap Dish	Jaguar, Hindware, Parryware
62	Sanitary ware	Two-way Bib cock	Jaguar, Hindware, Parryware
63	Sanitary ware	C.P Angle Valve	Jaguar, Roca, Kohler
64	Sanitary ware	Ball Valve	RB, Intervolve, Zoloto, VB

65	Sanitary ware	Pressure Reducing Valves	Hawa, Kirloskar, VB, Zoloto
66	Sanitary ware	Butterfly valves	RB, Intervolve, Zoloto, VB
67	Sanitary ware	Gate valve	Zoloto, neta, leader
68	Sanitary ware	G.M. Non return valve	RB, Intervolve, Zoloto, VB
69	Sanitary ware	SWR Pipe & Fittings type A (for Rain water upto 160mm dia)	Supreme, Finolex, Prince Pipes, Ashirwad
70	Sanitary ware	UPVC pipes/fittings	Supreme, Finolex, Prince Pipes
71	Sanitary ware	UPVC ASTM pipes	Supreme, Surya Roshni, Finolex
72	Sanitary ware	CPVC Pipes and Fittings	Astral, Ajay, Ashirwad Pipes, Supreme, Prince Pipes
73	Sanitary ware	Pipe Supports	Hangers Intello Tech / GMGR / Chilly
74	Aluminium Work	Aluminium Systems/ Anodized aluminum fittings for doors/windows	Jindal, Hindalco, Royal Touch, Crown
75	Aluminium Work	Aluminium Sections	Hindalco/ Jindal/ Mahavir/ Indal
76	Aluminium Work	E.P.D.M. Gaskets	Anand/ Roop/Bohra/Hanu
77	Water Proofing	Chemical Waterproofing system	Pidilite, Sunanda Chemicals, BASF, Sika, FOSROC.
78	Miscellaneous	Polysulphide sealant	Pidilite, Chemetall-Rai
79	Miscellaneous	Epoxy	Fosroc/ STP/ CICO/ Ardex
80	Miscellaneous	Anchor Fasteners /bolts	Hilti, Fischer, Halfen
81	Miscellaneous	Masking Tapes	3M, Sun Control/ Wonder Polymer
82	Miscellaneous	Stainless Steel Bolts, Washers and Nuts	Kundan/ Puja/ Atul
83	Miscellaneous	Stainless Steel	Jindal, SAIL, Golden

B. LIST OF MATERIALS FOR ELECTRICLA WORKS:

Sr. No.	Item Description	Makes / Brand
1.	H.T. Switchgear.	Siemens, L&T, Kirloskar, Bhel, Jyoti, Crompton Greaves
2.	L.T. Switchgear.	
A)	Enclosed in sheet steel with H.R.C. fuses for 63 Amps., and above.	L&T, Siemens, Havell's, Jyoti, Schneider, KEW, HPL
B)	Cast iron with rewireable fuses.	KEW, CPL, Kalki, Harrison, HPL, Bentec
C)	Cast iron or enclosed in sheet steel changeover switch.	KEW, Havell's, Indo Asian, Harrison, Legrand, Anchor
D)	Circuit Breakers (Moulded case).	L&T, Siemens, Havell's, Indo Asian, schindler, Anchor
E)	Miniature Circuit Breakers	Havell's, Indo Asian, Siemens, Leader, Goldmedal
F)	Cubical panel switchgear accessories.	
I)	TPN / DP Switches / Isolators.	L&T, Siemens, KEW, Standard, Havell's, Indo Asian, Anchor, Polycab.
II)	Rotary CAM type, Selector switch.	Siemens, Kaycee, AEI, Standard gold, HPL, C&S
III)	Start / Stop push button stations.	L&T, Siemens, Cutler-Hammer, Kaycee, Havell's, C&S, BCH.
IV)	Contactors.	schindler, Havell's, L&T, Siemens, BCH.
V)	Indicating lamp (Neon Type)	Siemens, BCH or equivalent approved by relevant standards.
VI)	Indicating lamp filament type with resistance.	National, BCH, or equivalent approved by relevant standards.

	VII)	Earth leakage circuit breakers.	L&T, Havell's, Indo Asian, Siemens, Leader
	VIII)	H.R.C. Fuse.	Siemens, L&T, Havell's, Indo Asian KEW, HPL
3.		Power Transformer.	Kirloskar, Bhel, Bharat Bijlee, Emco, Crompton Greaves
4.		Distribution Boards.	
	A)	With rewirable fuses.	KEW, Havell's, Indo Asian, Kalki, Standard, BCH, Goldmedal
	B)	With HRC Fuse	L&T, Siemens, Kew, Havell's, Indo Asian, Standard, BCH.
	C)	With MCB's.	Standard, Indo Asian, Havell's, BCH, Polycab, Goldmedal, Vinay
5.		Cables.	Finolex, Polycab, Universal, Havell's, KEI, Anchor, R. R. Kable
6.		Socket / Lugs.	Jainson, HPL or equivalent approved by relevant standards
7.		PVC Wires.	Finolex, Polycab, Havell's, RR Kabel, Anchor, KEI,
8.		Conduit.	
	A)	M. S. Black and G.I. Conduit.	BEC, Vimco, BI, EWC.
	B)	Rigid PVC conduit and accessories.	Precision, Swastik, Premium, Polycab, GM
9.		PVC casing-n-capping and accessories.	Presto-plast, Modi's, Sunplast, Super Plast, PRESS FIT
10.		Screws.	Nettle Fold, King Fold, Precision Fasteners.
11.		Piano switches flush mounting (5 to 15 Amps.) / wall sockets & plugs (surface mounting), Modular witches (5 to 15 Amp) holder pendant / batten / angle, three plate ceiling rose (for 3 cores twisted flexible wire), 30 Amps. D.P. Ticino type switch fuse with indicating lamp, bell push surface mounting, flush mounting.	Roma, Leader, Havell's, Vinay, Anchor, Legrand, Goldmedal, Vinay
12.		Wall socket and plugs metal clad (ray roll type).	GE, Havell's, Crompton Greaves, Indo Asian, Standard-Gold, SSK, Precision.
13.		PVC Board.	Sunwood, Presto-Plast or ISI marked.
14.		Special accessories concealed / decorative (plate switches).	Roma, Anchor, Precision, Indo Asian, Vinay.
15.		Two / Three core flexible wires.	Polycab, Poliplast, Anchor, RR Kabel.

Notes: -

1. Besides the above makes, Bank/ CONSULTANT has the right to permit use of any equivalent brand / material matching the specified criteria / quality standards.
2. The contractor should obtain prior approval from CONSULTANT / SBI before placing order for any specific materials. CONSULTANT / SBI may / delete any of the makes or brands out of the above list.
3. All materials should conform to relevant standards and codes of BIS.
4. Materials with I.S.I. mark shall be used duly approved by the SBI/ CONSULTANT.

If any material is found to be not up to the mark, the contractor will have to produce original bills/certificate from the manufacturer or his authorized Distributor for authenticity and genuineness of the material for consideration and as per make approved by the SBI/ CONSULTANT. The same will not be considered for payment.

THEORETICAL CEMENT CONSUMPTION STATEMENT (BASE CPWD)

No	Description of item of work.	Quantity of cement to be used per Unit Quantity of work.	Unit.
1	Cement Concrete (Cast in Situ) Plain or Reinforced.		
a.	1:1:2 (1 Cement: 1 Sand :2 Graded Aggregate).	12.20 Bags.	Cubic Meter
b.	1:1.5:3(1 Cement:1.5 sand:3 Graded Aggregate).	8.00 Bags.	Cubic Meter
c.	1:2:4 (1 Cement: 2 Sand :4 Graded Aggregate).	6.40 Bags.	Cubic Meter
d.	1:3:6 (1 Cement: 3 Sand :6 Graded Aggregate).	4.40 Bags.	Cubic Meter
e.	1:4:8 (1 Cement: 4 Sand :8 Graded Aggregate).	3.40 Bags.	Cubic Meter
f.	1:5:10(1 Cement: 5 Sand :10 Graded Aggregate).	2.60 Bags.	Cubic Meter
g.	Providing and laying cement concrete 1:2:4 (1 Cement: 2 Coarse Sand: 4 Graded Aggregate of 20 mm. nominal size) including finishing exposed surface with 6 mm. thick cement mortar 1:3 (1 Cement: 3 Fine Sand). Kerbs, Steps, and the like.	7.02 Bags.	Cubic Meter
h.	String or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills and the like mouldings in cornices, window sills etc.	7.62 Bags.	Cubic Meter
1.1	Ready Mix/Design mix Concrete		
	M20 & Above Grades	As per Approved Design Mix /RMC Batch Report	As per Approved Design Mix /RMC Batch Report
2.	Cement Mortar		
a.	1:1 (1Cement: 1 Sand)	20.40 Bags.	Cubic Meter
b.	1:2 (1Cement: 2 Sand)	13.60 Bags.	Cubic Meter
c.	1:3 (1Cement: 3 Sand)	10.20 Bags.	Cubic Meter
d.	1:4 (1Cement: 4 Sand)	7.60 Bags.	Cubic Meter
e.	1:5 (1Cement: 5 Sand)	6.20 Bags.	Cubic Meter
f.	1:6 (1Cement: 6 Sand)	5.00 Bags.	Cubic Meter
g.	1:2 (1Cement: 2 Stone Dust)	13.60 Bags.	Cubic Meter
h.	1:2 (1Cement: 2 Marble Dust)	13.60 Bags.	Cubic Meter
i.	1:5 (1Cement: 5 Marble Dust)	6.20 Bags.	Cubic Meter
j.	1:1:3 (1Cement: 1 Marble Dust: 3 Stone Dust)	7.60 Bags.	Cubic Meter
k.	White Cement Mortar 1:2 (1 White Cement: 2 Marble Dust)	13.60 Bags.	Cubic Meter
l.	White Cement Mortar 1:3 (1 White Cement: 3 Marble Dust)	10.20 Bags.	Cubic Meter
m.	White Cement Mortar 1:5 (1 White Cement: 5 Marble Dust)	6.20 Bags.	Cubic Meter
3.	Cement Lime Mortar		

a.	1:1:3 (1 Cement:1 Lime putty:3 Sand)	8.20 Bags.	Cubic Meter
b.	1:1:6 (1 Cement:1 Lime putty:6 Sand)	5.00 Bags.	Cubic Meter
4.	Brick Work in All Classes		
a.	In Cement Mortar 1:3 (1 Cement:3 sand)	2.56 Bags.	Cubic Meter
b.	In Cement Mortar 1:4 (1 Cement:4 Sand)	1.90 Bags.	Cubic Meter
c.	In Cement Mortar 1:5 (1 Cement:5 Sand)	1.56 Bags.	Cubic Meter
d.	In Cement Mortar 1:6 (1 Cement:6 Sand)	1.24 Bags.	Cubic Meter
5.	Half Brick Work in All Classes		
a.	In Cement Mortar 1:3 (1 Cement:3 Sand) With or without hoop iron.	28.56 Bags per 100 Square Meter	
b.	In Cement Mortar 1:4 (1 Cement:4 Sand)	21.28 Bags per 100 Square Meter	
c.	In Cement Mortar 1:5 (1 Cement:5 Sand)	14.50 Bags per 100 Square Meter	
d.	Moulding and cornices in brick masonry in cement mortar 1:4 Cement:4 Sand) Joining old brick work with new brick work.	0.18 Bags per 100 Square Meter per cm. Girth	
	a) Old Brick in metric or FPS. System with new brick work in metric system in cement mortar 1:4 (1 Cement: 4 Sand).	4.20 Bags per 100 Square Meter	
	b) Old Brick work in FPS. System with new brick work in cement mortar 1:4 (1 Cement: 4 Sand).	5.44 Bags per 100 Square Meter	
6.	Random Rubble Masonry		
a.	Cement Mortar 1:6 (1 Cement: 6 Sand)	1.70 Bags.	Cubic Meter
b.	Cement Lime Mortar 1:1:8 (1 Cement: 1 Lime Putty: 8 Sand)	1.32 Bags.	Cubic Meter
7.	Coursed Rubble Masonry		
a.	Cement Mortar 1:6 (1 Cement: 6 Sand)	1.50 Bags.	Cubic Meter
8.	Ashlar Masonry In plain ashlar punched (ordinary) in superstructure in cement mortar 1:6 (1 Cement: 6 Sand) including pointing with cement mortar 1:2 (1Cement:6 Stone dust) with an admixture of pigment matching the stone shade.	1.08 Bags.	Cubic Meter
9.	Stone Veneering Work For wall lining etc., average thickness 40 mm. to 170 mm. in cement lime mortar 1:1:6 (1Cement:1 Lime Putty:6 Sand) including pointing in White cement mortar 1:2 (1 White Cement: 2 Stone Dust) with an admixture of pigment matching the stone shade.	17.50 Bags per 100 Square Meter	
10.	Marble work in steps jambs, walls, pillars and other plain work in cement mortar 1:4 (1 Cement: 4 Sand) including pointing in White cement mortar 1:2 (1 Cement: 2 Marble dust).	0.136 Bags per 1.52 Bags per	Cubic Meter (Grey Cement) Cubic Meter (White Cement)
11.	Marble work in steps jambs, walls, pillars and other plain work in cement mortar 1:4 (1 Cement: 4 Sand) including pointing in cement mortar (1 Cement: 2 Marble dust).	1.66 Bags per	Cubic Meter
12.	Marble work for wall lining (Veneer) work) 2.5 cm. thick in cement mortar 1:3 (1	Bags per 100 Square Metre (Grey Cement)	

	Cement: 3 Sand) including pointing in White cement mortar 1:2 (1 Cement: 2 Marble dust).	Bags per 100 Square Metre (White Cement)	
13.	Marble work for wall lining (Veneer) work) 2.5 cm. thick in cement mortar 1:3 (1 Cement: 3 Sand) including pointing in cement mortar 1:2 (1 Cement: 2 Marble dust).	17.68 Bags per	Square Meter
14.	Marble work for wall lining (Veneer) work) 4 cm. thick in cement mortar 1:3 (1 Cement: 3 Sand) including pointing in White cement mortar 1:2 (1 Cement: 2 Marble dust).	20.40 Bags per 100 Square Metre. (Grey Cement) Bags per 100 Square Metre (White Cement)	
15.	Marble work for wall lining (Veneer) work) 4 cm. thick in cement mortar 1:3 (1 Cement: 3 Sand) including pointing in cement mortar 1:2 (1 Cement: 2 Marble dust).	23.80 Bags per 100 Square Metre.	
16.	Cement Concrete Flooring Flooring 1:2:4 (1 Cement: 2 Sand: 4 Graded Stone Aggregate) finished with a floating coat of neat cement including cement slurry rounding of edges and strips etc., but excluding cost of nosing of steps etc., complete.		
a.	25 mm. thick with 20 mm. nominal size stone aggregate.	0.244 Bags	Square Meter
b.	40 mm. thick with 20 mm. nominal size stone aggregate.	0.34 Bags	Square Meter
c.	50 mm. thick with 20 mm. nominal size stone aggregate.	0.404 Bags	Square Meter
d.	75 mm. thick with 20 mm. nominal size stone aggregate.	0.564 Bags	Square Meter
17.	Cement Plaster Skirting (upto 30 cm. height) with cement mortar 1:3 (1 Cement: 3 Coarse Sand) finished with a floating coat of neat cement including rounding of junctions with floor, including slurry complete.		
a.	18 mm. thick.	0.32 Bags	Square Meter
b.	21 mm. thick.	0.35 Bags	Square Meter
18.	Pavement (25 to 50 mm. thick) with 1:2:4 (1 Cement: 2 Coarse Sand : 4 Graded Stone Aggregate 20 mm. nominal size) including finishing complete.	6.80 Bags	Cubic Meter
19.	Terrazzo Flooring 40 mm. thick marble chips flooring rubbed and polished to granolithic finish, under layer 34 mm. thick cement concrete 1:2:4 (1 Cement: 2 Coarse Sand : 4 Graded Stone Aggregate 12.5 mm. nominal size) and top layer 6 mm. thick with white, black or white and black marble chips of size 1		

	mm. to 4 mm. nominal size laid in cement marble powder 3:1 mix. (3 Cement: 1 Marble Powder) by weight in proportion of 4:7 (4 Cement marble powder) by weight in marble powder mix:7 Marble chips) by volume including cement slurry etc., complete.		
a.	Dark shade / Light shade pigment with ordinary cement.	0.339 Bags per	Square Meter
b.	Light shade pigment with white cement.	0.258 Bags per 0.081 Bags per	Square Meter (Grey Cement) (White Cement)
c.	Medium shade pigment with approximately 50% white cement and 50% ordinary cement.	0.298 Bags Per 0.0440 Bags per	Square Meter (Grey Cement) (White Cement)
20	40 mm. thick marble chips flooring rubbed and polished to granolithic finish, under layer 31 mm. thick cement concrete 1:2:4 (1 Cement: 2 Coarse Sand : 4 Graded Stone Aggregate 12.5 mm. nominal size) and top layer 9 mm. thick marble chips, chips, size 4 to 7 mm. size, laid in cement marble powder mix. 3:1) (3 Cement: 1 Marble Powder) by volume in proportion of 4:7 (4 Cement marble powder mix. 7 Marble chips) by volume including cement slurry etc., complete.		
a.	Dark shade / Light shade pigment with ordinary cement.	0.357 Bags	Square Meter
b.	Light shade pigment with white cement.	0.241 Bags 0.116 Bags	Square Meter (Grey Cement) Square Meter (White Cement)
c.	Medium shade pigment with approximately 50% white cement and 50% ordinary cement.	0.299 Bags 0.058 Bags	Square Meter (Grey Cement) Square Meter (White Cement)
21	40 mm. thick marble chips flooring rubbed and polished to granolithic finish, under layer 28 mm. thick cement concrete 1:2:4 (1 Cement: 2 Coarse Sand : 4 Graded Stone Aggregate 12.5 mm. nominal size) and top layer 9 mm. thick marble chips, chips, sizes 7 mm to 10 mm. nominal size, laid in cement marble powder mix. 3:1) by weight in proportion of 2:3 (2 Cement Marble Powder mix. 3 Marble Chips) by volume including cement slurry etc., complete.		
a.	Dark or Light shade pigments with grey cement.	0.381 Bags	Square Meter
b.	Light shade pigment or without any pigment with white cement.	0.219 Bags	Square Meter (Grey Cement)

		0.162 Bags	Square Meter (White Cement)
c.	Medium shade pigment with approximately 50% grey cement and 50% white cement.	0.300 Bags 0.081 Bags	S.M. (Grey Cement) S.M. (White Cement)
22	Marble chips skirting (up to 300 mm high) rubbed and polished to granolithic finish top layer 6 mm. thick marble chips of sizes from smallest to 4 mm. nominal size laid to cement marble powder mix. 3:1 (3 Cement: 1 Marble Powder mix. By weight in proportion of 4:7 (4 Cement Marble Powder mix: 7 marble chips) by volume including cement slurry complete.		
a.	18 mm. thick with under layer 12 mm. thick cement plaster 1:3 (1 Cement: 3 Coarse Sand) dark or light shade pigment with grey cement.	0.298 Bags	Square Meter
b.	Light shade pigment or no pigment with cement.	0.217 Bags Per Square Meter (Grey Cement) 0.081 Bags Per Square Meter (White Cement)	
c.	Medium shade colour pigment with 50% grey cement and 50% white cement.	0.258 Bags Per Square Meter (Grey Cement) 0.0406 Bags Per Square Meter (White Cement)	
d.	21 mm. thick with under layer 15 mm. thick cement plaster 1:3 (1 Cement: 3 Coarse Sand) dark or light shade pigment with grey cement.	0.327 Bags	Square Meter
e.	Light shade pigment or no pigment with white cement.	0.246 Bags Per Square Meter (Grey Cement) 0.081 Bags Per Square Meter (White Cement)	
f.	Medium shade pigment with 50% grey cement and 50% white cement.	0.286 Bags Per Square Meter (Grey Cement) 0.04 Bags Per Square Meter (White Cement)	
23.	Tile Flooring:		
a.	Precast terrazzo tiles 20 mm. thick white black or white and black marble chips of size up to 6 mm. laid in floors treads of steps and landings jointed with neat cement slurry mixed with pigment to match the shade of the tile including rubbing polishing with precast tiles of 30 mm. thick bed of lime mortar 1:1.2 or 1:3 light shade using white cement.	0.088 Bags Per Square Meter (Grey Cement) 0.088 Bags Per Square Meter (White Cement)	
b.	Medium shade colour pigment with 50% white cement and 50% grey cement.	0.132 Bags Per Square Meter (Grey Cement) 0.044 Bags Per Square Meter (White Cement)	
c.	Dark shades using ordinary cement precast terrazzo tiles 20 mm. thick with marble chips of size 6 mm. in skirting and risers of steps not exceeding 30 cm. in height on wall, laid on 12 mm. thick cement plaster 1:3 mix. (1 Cement: 3 Sand) joint with neat cement slurry, light shades using white cement.	0.235 Bags Per Square Meter (Grey Cement) 0.044 Bags Per Square Meter (White Cement)	
d.	Medium shade colour pigment with 50% white cement and 50% ordinary cement.	0.257 Bags Per Square Meter (Grey Cement) 0.022 Bags Per Square Meter (White Cement)	

e.	Dark shades using ordinary cement.	0.279 Bags	Square Metre
24.	Chequered Terrazzo Tile Flooring		
a.	Chequered Terrazzo Tile 22 mm. thick with marble chips of sizes upto 6 mm. in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles including robbing, polishing complete on 28 mm. thick bed of lime mortar 1:1.2 or 1:3.		
a.	Light shade using white cement.	0.088 Bags Per Square Meter (Grey Cement) 0.096 Bags Per Square Meter (White Cement)	
b.	Medium shades using 50% grey cement and 50% white cement.	0.136 Bags Per Square Meter (Grey Cement) 0.048 Bags Per Square Meter (White Cement)	
c.	Dark shade using grey cement.	0.184 Bags Per Square Meter (Grey Cement)	
d.	Chequered Terrazzo Tile 30 mm. thick with marble chips of sizes upto 6 mm. in stairs, treads, jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing polishing rounding of nosing etc., complete on 20 mm. bed of: Lime mortar 1:1:1 (1 Lime putty:1 Surkhi:1 Coarse Sand) :		
i.	Light shade using white cement.	0.088 Bags Per Square Meter (Grey Cement) 0.136 Bags Per Square Meter (White Cement)	
ii.	Medium shades using 50% grey cement and 50% white cement.	0.154 Bags Per Square Meter (Grey Cement) 0.066 Bags Per Square Meter (White Cement)	
iii.	Dark shade using grey cement.	0.220 Bags Per Square Meter (Grey Cement)	
e.	Cement mortar 1:4 (1 Cement:4 Coarse Sand)		
i.	Light shade using white cement.	0.258 Bags Per Square Meter (Grey Cement) 0.132 Bags Per Square Meter (White Cement)	
ii.	Medium shades using 50% grey cement and 50% white cement.	0.324 Bags Per Square Meter (Grey Cement) 0.066 Bags Per Square Meter (White Cement)	
iii.	Dark shade using grey cement.	0.39 Bags Square Meter (Grey Cement)	
25.	White Glazed Tiles.		
	White Glazed Tiles 5,6 or 7 mm. thick in flooring treads risers of steps skirting and dado on 12 mm. thick cement plaster 1:3 (1 Cement: 3 sand) in base and cement jointed with white cement slurry etc. complete.	0.188 Bags Per Square Meter (Grey Cement) 0.050 Bags Per Square Meter (White Cement)	
26.	Marble Stone Flooring		
	Marble Stone slab flooring over 20 mm. thick base of lime mortar 1:1:1 (1 Lime putty:1 Surkhi:1 Sand) and jointed with grey cement slurry etc. (all marble slabs).		
a.	20 mm. thick	0.098 Bags Per Square Meter	
b.	30 mm. thick	0.102 Bags Per Square Meter	
c.	40 mm. thick	0.107 Bags Per Square Meter	
	Marble stone slab flooring over 20 mm. thick base of cement mortar 1:4 (1 Cement:4 Sand) and jointed with grey		

	cement slurry etc., (all marble slabs).		
d.	20 mm. thick	0.268 Bags Per Square Meter	
e.	30 mm. thick	0.273 Bags Per Square Meter	
f.	40 mm. thick	0.277 Bags Per Square Meter	
g.	Extra if white cement slurry is used instead of grey cement slurry in joints of marble stone flooring.	0.015 Bags Per Square Meter (White Cement)	
h.	Marble slabs 30 mm. thick in risers of steps, skirting dado, wall and pillars, laid on 12 mm. thick cement mortar 1:3 (1 Cement: 3 Sand) and jointed with grey cement slurry.	0.246 Bags Per Square Meter (White Cement)	
27.	Kotah Stone Flooring		
	Kotah stone slab flooring over 20 mm. thick base of lime mortar 1:1:1 (1 Lime putty:1 Surkhi:1 Sand) and jointed with neat cement slurry etc.		
a.	25 mm. thick	0.128 Bags Per Square Meter	
b.	30 mm. thick	0.136 Bags Per Square Meter	
c.	40 mm. thick	0.152 Bags Per Square Meter	
	Kotah Stone slab flooring over 20 mm. thick base of cement mortar 1:4 (1 Cement:4 Sand) and jointed with neat cement slurry etc.		
d.	25 mm. thick	0.298 Bags Per Square Meter	
e.	30 mm. thick	0.306 Bags Per Square Meter	
f.	40 mm. thick	0.322 Bags Per Square Meter	
g.	Kotah stone slab 25 mm. thick risers of steps, skirting, dado and pillar laid on 12 mm. thick cement mortar 1:3 (1 Cement:3 Sand) and jointed with neat cement slurry etc.	0.275 Bags Per Square Meter	
28	Sand Stone Flooring		
a.	40 mm. thick sand stone flooring over 20 mm. thick base of cement mortar 1:5 (1 Cement :5 Sand) with joints finish flush.	0.155 Bags Per Square Meter	
b.	40 mm. thick sand stone flooring over 20 mm. thick base of cement mortar 1:5 (1 Cement :5 Sand) including pointing with cement mortar 1:2 (1 Cement: 2 Stone Dust).	0.186 Bags Per Square Meter	
c.	40 mm. thick sand stone flooring over 20 mm. thick base of lime mortar 1:1:1 (1 Lime :1 Surkhi:1 Sand) including pointing with cement plaster 1:2 (1 Cement :2 Stone Dust).	0.031 Bags Per Square Meter	
d.	40 mm. thick fine dressed and rubbed stone flooring over 20 mm. thick base of cement mortar 1:5 (1 Cement :5 Sand) with joints 5 mm. thick finished flush.	0.166 Bags Per Square Meter	
e.	40 mm. thick fine dressed and rubbed stone flooring over 20 mm. thick base of lime mortar 1:5 (1 Cement: 5 Sand) with	0.196 Bags Per Square Meter	

	joints 5 mm. thick including pointing with cement mortar 1:2 (1 Cement: 2 Stone Dust).	
f.	25 mm. thick cast iron grid flooring using grid tiles of required size weighing 47 kg. per square metre on bed of 12 mm. thick cement concrete 1:2 (1 Cement: 2 Stone Aggregate 6 mm. nominal size) including filling the hollows with cement concrete same mix and tamping with 10 mm. dia. iron bars and grouting the joints with neat cement slurry complete.	0.025 Bags Per Square Meter
g.	Filling cement concrete 1:2:4 (1 Cement :2 Coarse Sand: 4 Graded Stone Aggregate 12.5 mm. nominal size) in gaps of A. C. Sheet corrugations and wings of ridges.	3.82 Bags Per Square Meter
29.	Cement Plaster	
a.	12 mm. 1:3 (1 Cement: 3 Sand).	14.68 100 Per Square Metre
b.	12 mm. 1:4 (1 Cement: 4 Sand).	10.94 100 Per Square Metre
c.	12 mm. 1:5 (1 Cement: 5 Sand).	8.92 100 Per Square Metre
d.	12 mm. 1:6 (1 Cement: 5 Sand).	7.20 100 Per Square Metre
e.	15 mm. 1:3 (1 Cement: 3 Sand).	17.54 100 Per Square Metre
f.	15 mm. 1:4 (1 Cement: 4 Sand).	12.08 100 Per Square Metre
g.	15 mm. 1:5 (1 Cement: 5 Sand).	10.66 100 Per Square Metre
h.	12 mm. 1:6 (1 Cement: 6 Sand).	8.60 100 Per Square Metre
i.	20 mm. 1:3 (1 Cement: 3 Sand).	22.84 100 Per Square Metre
j.	20mm. 1:4 (1 Cement: 4 Sand).	17.02 100 Per Square Metre
k.	20 mm. 1:5 (1 Cement: 5 Sand).	13.88 100 Per Square Metre
l.	20 mm. 1:6 (1 Cement: 6 Sand).	11.20 100 Per Square Metre
30.	Cement Plaster with a Floating Coat of neat cement	
a.	12 mm. 1:3 (1 Cement: 3 Sand).	19.08 100 Per Square Metre
b.	12 mm. 1:4 (1 Cement: 4 Sand).	15.34 100 Per Square Metre
c.	12 mm. 1:3 (1 Cement: 3 Sand).	21.94 100 Per Square Metre
d.	12 mm. 1:4 (1 Cement: 4 Sand).	17.48 100 Per Square Metre
e.	15 mm. 1:3 (1 Cement: 3 Sand).	27.24 100 Per Square Metre
f.	15 mm. 1:4 (1 Cement: 4 Sand).	21.42 Per 100 Square Metre
31.	Cement Plaster in two coats	
a.	20 mm. Cement Plaster in two coats under layer 12 mm. cement plaster 1:4 (1 Cement :4 Sand) finished with a top layer 8 mm. thick cement plaster 1:3 (1 Cement: 3 Sand)	20.00 Bags per 100 Square Metre
b.	18 mm. thick Cement Plaster in two coats under layer 12 mm. thick cement plaster 1:5 (1 Cement :5 Sand) finished with a top layer 6 mm. thick cement plaster 1:3 (1 Cement: 3 Sand)	16.26 Bags per 100 Square Metre
32.	6 mm. Cement Plaster	
a.	6 mm. Cement Plaster to ceiling 1:3 (1 Cement :3 Sand)	7.34 Bags per 100 Square Metre
b.	6 mm. Cement Plaster to ceiling 1:4 (1	5.48 Bags per 100 Square Metre

	Cement :4 Sand)	
c.	6 mm. Cement Plaster to ceiling 1:3 (1 Cement :3 Sand) finished with a floating coat of neat cement.	11.74 Bags per 100 Square Metre
d.	Neat Cement Punning.	4.40 Bags per 100 Square Metre
33.	Sand Cement Neeru Finished Plaster	
a.	Sand cement smooth neeru finished plaster for ceiling in cement mortar mix 1:4 (1 Cement :4 Sand), 10 to 15 mm. thick average, finished top smooth with neeru.	13.00 Bags per 100 Square Metre
b.	Sand cement smooth neeru finished plaster for walls in cement mortar mix 1:4 (1 Cement :4 Sand), 18 to 20 mm. thick average, finished top smooth with neeru.	19.00 Bags per 100 Square Metre
34.	Rough Cast Plaster	
	Rough Cast Plaster with a mixture of sand and gravel or crushed stone from 2.36 mm. to 12.5 mm. nominal size dashed over and including the fresh plaster in two layers, top layer 10 mm. cement plaster 1:3 (1 Cement: 3 Sand) mixed with 10% finely grounded hydrated lime by volume of cement and under layer 12 mm. cement plaster : 1:4 (1 Cement: 4 Sand)	
a.	With ordinary cement finish or cement pigment finish.	23.18 Bags per 100 Square Metre
b.	With white cement and pigment finish.	10.94 Bags Per 100 Sqm. (Grey Cement) 12.24 Bags Per 100 Sqm. (White Cement)
	1:5 Cement Sand (1 Cement:5 Sand)	
c.	With ordinary cement finish or cement and pigment finish.	21.16 Bags Per 100 Sqm. (Grey Cement)
d.	With white cement and pigment finish.	8.92 Bags Per 100 Sqm. (Grey Cement) 12.24 Bags Per 100 Sqm. (White Cement)
35.	Pointing on Stone Work	
a.	Flush or ruled pointing on stone work with cement mortar 1:3 (1 Cement: 3 Sand)	2.34 Bags per 100 Square Metre
b.	Raised and cut pointing in stone work with cement mortar 1:3 (1 Cement: 3 Sand)	3.88 Bags per 100 Square Metre
36.	Waterproofing	
a.	Proprietary waterproofing treatment to the terrace with brick-bat coba, cement base.	55.00 Bags per 100 Square Metre
b.	Proprietary waterproofing treatment to the canopy with brick-bat coba, cement base.	45.00 Bags per 100 Square Metre
c.	Waterproofing chajja with sand cement plaster average 25 mm. thick in cement mortar 1:3 (1 Cement :3 Sand)	25.00 Bags per 100 Square Metre
d.	Proprietary waterproofing treatment to the sunk portion of toilet, cement base.	30.00 Bags per 100 Square Metre

PROFORMAS/TABLES OF VARIOUS TESTS, MATERIALS, PACT, GUARANTEES

Sr. No	Particulars	Nos
1.	Record of Cement/Received/Used/Balance.	Table I
2.	Proforma of Paint/Lead/CICO Register	Table II
3.	Proforma for Reinforcement Bars Received	Table III
4.	Format of Receipt of Materials at Site	Table IV
5.	Proforma for Silt Test Register	Table V
6.	Proforma for Hindrance to Work	Table VI
7.	Proforma for Running A/c. Bill	Table VII
8.	Format for Memorandum for Payment	Table VIII
9.	Format of Measurement Book	Table IX
10.	Format of Site Order Book	Table X
11.	Format for Application By Contractor For Extension Of Time.	Table XI
12.	Details of Insurance Policies	Table XII
13.	Prebid Query Form	Table XIII
14.	Blank	Annexure XVIII
15.	Proforma Of Guarantee Bond for Waterproofing Treatment to Basement (Walls & Bottom Slab), Underground Reservoir, Overhead Reservoir, Terrace, Staircase Tower & Sunken Floor of Washrooms.	Annexure XXII

Note: Contractor has to get the above record maintained in registers at site and to be kept securely at site.

TABLE-I

RECORD OF CEMENT RECEIVED / USED / BALANCE

S. No.	Cement in stock Bags	Cement received (Bags)	Total Cement received (Bags)	Source from which received	Description of work where cement is used	Number of cement bags consumed	Balance in stock	Signature of Contractor & STRUCTURAL CONSULTANT / (Bank's Representative (Periodical))
1	2	3	4	5	6	7	8	9

TABLE-II

RECORD OF PAINT / LEAD / CICO REGISTER

Name of work : _____

Name of the Contractor : _____

Agreement No. : _____

Date of Receipt	Source Receipt with Ref. To S.O./ Indent	Qty. Recd.	Progre ssive total	Item of work for which issued with approx . qty. work done in case of paint only	D ate of iss ue s	Quan tity issued	Qty. retur ned at the end of the day	Tot al issu ed	Delay Bala nce at hand	Contra ctors initials	Site Enginee rs initials	Signature of STRUCTURAL CONSULTANT / (Bank's Representative (Periodical))
1	2	3	4	5	6	7	8	9	10	11	12	13

Register for bitumen should be maintained. The format will be similar to that for cement.

TABLE-III

BANK FOR REINFORCEMENT BARS RECEIVED (In KGS.)

Truck No.	Challan No.	Name of Supplier	Binding Wire	6mm dia.	8mm dia.	12mm dia.	16mm dia.	20mm dia.	25mm dia.	Total Received
1	2	3	4	5	6	7	8	9	10	11

Number of diameters given is only illustrative. Open more columns for other diameters wherever needed.

TABLE-IV

FORMAT OF RECEIPT OF MATERIALS AT SITE

Sr. No.	Description	Opening balance	Receipt during month	Consumption during month	Closing balance	Total Quantity received till date
1	Cement (M.T.)					
2	Mild steel (M.T.)					
3	Tor steel (M.T.)					
4	Coarse aggregate (cu.mt.)					
5	Fine aggregate (cu.mt.)					
6	Teak wood (cu.mt.)					
7	Bricks (Nos.)					
8	Tiles (Nos.)					

Sr. No.	Description of work	Date of Commencement	Due date of completion	Percentage progress achieved
1	General building work			
2	Security equipment work			
3	Pest control treatment work			
4	Sanitary & Plumbing work			
5	Fire Fighting Works			
6	Other work			

TABLE-V

FORMAT OF MONTHLY PROGRESS REPORT (Annexure X)

Name of work :

Progress report for the month :

Report No. :

Sr No.	Description	Approximate quantity executed (Till Previous Month)	Details of work location where work is done	Approximate quantity executed (Current Month)	Total Quantity Executed
A.	GENERAL BUILDING WORK:				
1	Foundation work				
2	Reinforcement fabrication				
3	Shuttering work				
4	Reinforced cement concrete				
5	Masonry work				
6	Wood work				
7	Plastering work				
8	Flooring work				
9	Glazing work				
10	Roof treatment work				
11	Painting work				
B.	Pest control treatment				
C.	Security equipment work				
D.	Sanitary and plumbing work:				
1	Water supply				
2	Drainage work				
3	Fitting and fixtures				
E.	Electrical installation work				
F.	Fire Fighting Works				
G.	OTHER TRADES				

TABLE-VI

PROFORMA OF SILT TEST REGISTER

Sr. No.	Date of Test	Height of Sand in Cylinder inundated & stirred	Height of Silt	Max percentage of silt as specified	Percentage of silt obtained	Signature of Site Engineer	Signature of Contractor	Initial of STRUCTURAL CONSULTANT / Bank's Representative (Periodical)
1	2	3	4	5	6	7	8	9

TABLE-VII

ANNEXURE-VIII

PROFORMA FOR HINDRANCE TO WORK

Name of Work : Date of Start of work :
 Name of Contractor : Period of Completion :
 Agreement No. : Dt. of Completion of work :

Sr.No.	Nature of Hindrance	Date of Occurrence of Hindrance	Date of which Hindrance was removed	Period of which Hindrance existed	Signature of Site Engineer	Signature of STRUCTURAL CONSULTANT / Bank's Representative
1	2	3	4	5	6	7

TABLE VIII

PROFORMA FOR RUNNING A/C BILL

Name of Contractor / Agency :
 Name of Work :
 Sr.No. of this Bill :
 No. & Date of previous Bill :
 Reference to Agreement No. :
 Date of Written order to commence :
 Date of Completion as per Agreement :

Sr.No.	Item Description	Unit	Rate (Rs.)	As per Tender	
				Quantity	Amount (Rs.)
1	2	3	4	5	

Upto Previous R.A. Bill		Up Date (Gross		Present Bill		Remarks
Quantity	Amount (Rs.)	Quantity	Amount (Rs.)	Quantity	Amount (Rs.)	
6		7		8		9

Note:	1.	If part rate is allowed for any items, it should be indicated with reasons for allowing such a rate.	_____
	2.	If ad-hoc payment is made, it should be mentioned specifically.	_____
			Net Value since previous bill

CERTIFICATE

The measurements on the basis of which the above entries for the Running Bill No. -----
were made have been taken jointly on ----- and are recorded at pages -----
---- to ----- of measurement book No. -----.

Signature and date
of Contractor

Signature and date of
Structural Consultants
Representative (Seal)

Signature and date
of Site Engineer

The work recorded in the above-mentioned measurements has been done at the site satisfactorily as per tender drawings, conditions and specifications.

TABLE - IX

MEMORANDUM FOR PAYMENT

R/A BILL NO.:

1.	Total value of work done since previous bill (A)		Rs.
2.	Total amount of secured advance due since Previous Bill (B)		Rs.
3.	Total amount due since Previous Bill (C) (A+B)		Rs.
4.	PVA on account of declaration in price of Steel, Cement and other materials and labour as detailed in separate statements enclosed.		Rs.
5.	Total amount due to the Contractor		Rs.
	<u>OBJECTIONS:</u>		
i)	Secured Advance paid in the previous R/A	Rs.	
ii)	Retention money on value of works as per accepted tenders upto date amount Rs.	Rs.	
	Less already recovered	Rs.	
	Balance to be recovered	Rs.	
iii)	Mobilization Advance, if any		
(a)	Outstanding amount (principal + interest) as on date	Rs.	
(b)	To be recovered in this bill	Rs.	
iii.	Any other Departmental materials cost to be recovered as per contract, if any	Rs.	
iv.	Any other Departmental service charges to be recovered if any, as per contract (water, power etc.) enclose statement.	Rs.	
	Total Deduction as per contract (F)	Rs.	
	Adjustments, if any ----- Amount less received by Contractor in ----- R/A Bill (as per statement of Contractor)	Rs.	
	P.V.A.	Rs.	
	Total amount payable as per contract (E+F+G)	Rs.	
	(Rupees ----- in words)		

The bill amount to Rs. (both figures and words) has been scrutinized by us after due checking of the measurements of work as required and is recommended for payment.

Date:

.....

Signature of Consultant with Seal

The bill amount to Rs. certified by Consultants has been scrutinized by me after due test checking of measurements of works as required and is recommended for payment for an amount of Rs.....

Date:

.....

Signature of SBI Engineer

STATUTORY DEDUCTION:				
i)	Total Amount due (E)		Rs. -----	
ii)	Less I.T. Payable		Rs. -----	
iii)	Less S.T. Payable		Rs. -----	
	Net Payable		Rs. -----	

These figures given in the Memorandum for payable has been verified and bill passed for payment -----
 ----- (in words and figures)

Date: -----

 Signature of the Premises Officer

Table X

FORMAT OF MEASUREMENT BOOK (ANNEXURE- XX)

1ST Page:

STATE BANK OF INDIA

.....office,

Measurement Book No.

(Pages 1 to.....)

This book is issued to Shri.....

Signature of A.G.M. (Estate) / D.G.M. (F & OA)

Certified that this book contains..... pages

Signature of the official (to whom the book is issued)

MEASUREMENT BOOK PAGES NOS. 1 TO.....

Item No.	Description	Measurement No. L B D/H	Quantity	Remarks

Site Engineer
(PMC)

Site Engineer
(Contractor)

Bank's Engineer

Table XI

FORMAT OF SITE ORDER BOOK (ANNEXURE- XVI)

Name of the work : _____

Date of Commencement : _____

Sr. No	Remarks/ Instructions of the site Engineer/ Structural Consultant	Dated Initials of site Engineer/ Structural Consultant	Initials of the Contractor for having received the instructions	Action taken with date	Dated initials of the site Engineer	Remarks of the Structural Consultants /SBI Officials
1	2	3	4	5	6	7

Table XII

Format for Application by Contractor For Extension Of Time (Annexure- VII)

1.	Name of the Contractor			
2.	Name of the work as given in the Agreement			
3.	Agreement WO			
4.	Tender amount			
5.	Date of commencement of work			
6.	Period allowed for completion as per agreement			
7.	Date of completion as per agreement			
8.	Period for which extension of time has been given			
		Date	Month	Year
	a)	1st extension vide Bank's Letter No.		
	b)	2nd extension vide Bank's Letter No.		
	c)	3rd extension vide Bank's Letter No.		
9.	Reasons for which extensions have been previously given (copies of the previous applications should be attached)			
10.	Period for which extension is applied for and the reasons thereof including hindrances, time for extra work assigned, if any etc.			
	Signature of Contractor			

Table XIII

DETAILS OF INSURANCE POLICIES (ANNEXURE XVII)

Type of policies	Name of Insurance	Amount Rs.	Policy No.	Validity
CAR policy including 3rd party liability				
Workmen's Compensation				
Any other Policy				

Remarks:

1. This is only an 'on-account' payment and is not to be interpreted either as approval of work, materials brought or affixed at site or for that matter approval of any sort.
2. The quantum of work done and materials delivered at site have been certified by.....
3. Should you wish to audit such work, kindly contact the undersigned and oblige.

Architect/Consultants

Table XIV

Annexure XIX

Prebid Query Form

Vendor name	Sr. No	RFP Page No	RFP Clause No	Existing Clause	Query Suggestion

**PROFORMA OF GUARANTEE BOND FOR WATERPROOFING TREATMENT TO OVERHEAD
RESERVOIR, TERRACE & SUNKEN FLOOR OF WASHROOMS.**

(On non-judicial Stamp Paper of Rs. 500/- or as per latest Govt. Rules)

We hereby Guarantee that after completion of the Water Proofing Work mentioned above and before Day of _____ Two Thousand _____ if at any time or times the underground reservoir, overhead reservoir, terrace, & sunken floor of washrooms and any other portion thus treated by M/s _____ (Hereinafter called 'The Contractor') starts leaking or in any way give way to the influence of water including wet patches, dampness etc. due to inadequacy of the work carried or due to any other reason whatsoever relating to the specification, workmanship etc. including the responsibility for any surface treatment and plumbing etc. works carried out by other agencies, the Contractor should, without any extra cost to Dy. General Manager, (F&OA) State Bank of India or to the occupants, carry out necessary remedial measure to such extent and so often as may be necessary to free the said premises from leakage/ dampness etc.

The question of whether there is any leakage or the treatment has given away to water or moisture of the treatment aforesaid and before 5 (Five) years after the completion date, shall be decided by Dy. General Manager, (F&OA), State Bank of India, and the decision made by Employer shall be final and binding on us. We shall reinstate the surface to the original condition after carrying out the rectification work, if necessary, by bringing in new materials at no extra cost to State Bank of India.

Signature of witness with address :

Signature of Contractor with seal :

Place :

Date :

(Note: Guarantee to be submitted by both the Contractors i.e. Main Contractor & the Water Proofing Specialist Agency)

Mode of Measurements

1. BRICK MASONRY:

- 1.1. Walls exceeding 150 mm brick/ thick shall be measured in unit of one cubic meter. Deductions for all openings, lintels, recesses shall be made except for the following:
- When openings are less than 45 cm in both the directions or less than 45 cm dia on the surfaces.
 - When beams & wall plates do not have bearing over entire thickness of wall.
 - No extra will be paid for providing such openings, recesses etc.
- 1.2. Half brick walls: Net area over one surface shall be measured. Deductions for all openings, lintels, recesses shall be made as in 1.3.1.

2. CEMENT CONCRETE (Plain and Reinforced):

- 2.1. Cement concrete items shall be measured exclusive of the steel reinforcement and plaster thickness but shall include necessary cost of shuttering, centering and curing. Items like R.C.C. precast jalis, R. C. pipes and other such articles which are normally manufactured in factories as well as those items which have been so specifically mentioned in schedule of quantities shall be measured inclusive of reinforcement. No deductions will be made when openings are less than 45 cm in both directions or 45 cm in diameter and no extra will be paid for providing such openings.
- 2.2. Slabs and Chajjas: Shall be measured in cubic meters. Slab shall be measured full throughout. Where slabs of different thickness meet, the highest thickness will be taken into account. For chajja only projected portion shall be measured.
- 2.3. Parapet wall, apron wall and drop wall from chajja having drop exceeding 5 cm. Actual cubic contents for portion projecting over slab or beam shall be measured. If drop from chajja is 5 cm or less, the same shall be measured under chajja item.
- 2.4. Projected bands: Projection of 15 cm or less in breadth and thickness shall only be considered as band. The band shall be measured in cubic meters. Deductions will not be made on account of grooves, patties, bands, molds etc. nor will any extra be paid for forming such grooves or features.
- 2.5. Staircase: Measurements shall be per cubic meter comprising of step and soffit slab. All landings, and landing beams shall be paid separately under slab and beam measurements. In the case of soffit slab resting on beams, the portion of beam projecting below landing slab shall be measured and paid as beam. Side parapet walls, railings, finishing of risers and treads and plastering etc. shall be paid separately.
- 2.6. Reinforcement: Shall be measured on standard weight basis for the length and size of bars as shown in drawing. Wastage, rolling margin, spacers, chairs etc. required for construction purpose, and binding wire will not be measured. Lapping of bars shall be provided only as per instructions of the RCC Consultant, and the same shall be paid for. The rate will be inclusive of labour involved in cleaning, cutting, bending & erecting.

The rate will be inclusive of labour involved in cleaning, cutting, bending and erecting in position. The unit of measure shall be in metric tons.

3. DOORS, WINDOWS, ROLLING SHUTTERS AND GATES:

These shall be measured in the unit of Square Meters.

- i. Teak wood doors, windows and ventilators: Clear area over one face inclusive of frame shall be measured. Hold fasts and portions embedded in masonry or flooring shall not be measured.
- ii. Steel doors, windows and louvers: Clear area over one face inclusive of frame shall be measured. Hold fasts or portions embedded in masonry or flooring shall not be measured.

- iii. Steel rolling shutters and rolling grills; Dimensions shall be the clear width between side jambs and clear height between floor and bottom of lintel or beam. Cover will not be measured separately.

4. FLOORING, SKIRTING AND DADO:

The net area covered shall be measured in sq. mts.

5. PLASTER:

Net area of surface plastered shall be measured in Sq. Mts. No deduction will be made for openings each less than half Sq.Mt. in area. No extras will be payable for any grooves, patties, bands, molds, (including drip molds) which are deemed to be included in the internal and external plastering items.

6. PAINTING AND COLOUR OR LIME WASH:

Net area of surface painted shall be measured in Sq.Mt. No deductions shall be made for unpainted surfaces or openings less than half Sq.Mt. each. The rates shall be inclusive of cleaning glasses and fittings.

- a) Walls: Net area of surface painted shall be measured. Extra for moldings, recesses and the like shall not be paid.

NOTE: All wood work and steel items given in Schedule of Quantities are generally inclusive of painting, but if these are required to be measured separately, then the following procedure shall be adopted.

6.1 STRUCTURAL STEEL WORK :

Weight of bolts, nuts, rivets, washers etc. used will not be considered for payment. Only the weight of the main members calculated on length basis at standard weight will be paid to nearest cm. No deduction shall be made for holes, bolts or rivets and wastage involved in cutting, for notching ends of sections or intermediate points for making connections. No additional payment shall be made for welding, riveting and bolting. The units of measure shall be in Kg. or MT as per Schedule of Quantities. Gusset plates shall be actually weighed and paid accordingly.

7. WOOD WORK:

Description	How measured	Multiplying factor
i. Paneled framed ledged braced and battened	Measured flat (not girthed) including frame; edges; chocks cleats etc shall be deemed to be included in the item	1.30 (for each side)
ii. Flush	Measured flat (not girthed) including frame edges; chocks cleats etc shall be deemed to be included the item.	1.20 (for each side)
iii. Partly paneled & partly glazed / glazed	----- As above -----	1 (for each side)
iv. Fully glazed or partly glazed	----- As above -----	0.80 (for each side)
v. Guard bars balustrades gratings and railings	Measured flat over all, no deduction shall be made for opening. (Supporting members shall not be measured separately)	1 (for painting all over)

8. METAL WORK :

Description	How measured	Multiplying factor
i. Fully glazed or gauzed doors and windows / partitions	Measured flat over) frame. No deduction shall be made for openings. In case of gates supporting members like stays, guide rails, hinges shall not be measured	0.50 (for each side)

ii. Rolling Shutters	Measured flat (size of opening) overall; jamb guides, bottom rails and locking arrangements etc. shall be included in the item (top cover shall be measured separately)	1.10 (for each side)
iii. Collapsible gate	Measured flat (size of opening)	1.50 (for painting overall)
iv. R.C.C jali and Fencing	Measured flat overall No deductions shall be made for openings	1 (for each side)

MATERIAL TEST LIST

The Contractors will have to take necessary material test as per I.S. code which is applicable, at their own cost for the following materials or any other material using in construction work periodically or as and when required by the Structural Consultants / Consulting Engineer.

The materials should be got tested in an approved Laboratory as per IS standard and test reports in duplicate should be submitted to the Structural Consultant's Office.

Sr. No	Material	Tests to be Carried out
1	Sand	a) Silt Content.
		b) Bulking.
		c) Particle size distribution.
		d) Or as directed.
2	Stone Aggregates	a) Soft and deleterious Materail
		b) Particle Size Distribution
3	Cement Concrete RCC Mix Design	a) Slump
		b) Cube Stregnth
		c) Or as per IS456-2000
4	Bricks/Blocks	a) Dimensions
		b) Water absorption and efflorescence.
		c) Compressive Strength
5	Timber	Moisture
6	Ceramic/Vitrified Floor Tiles	a) Transverse Test
		b) Water absorption
		c) Abrasion Test
7	Steel	a) Tensile Stregnth
		b) Ductility

Note: The Contractor will have to take necessary material test other than above test as per relevant I.S. code, if required and as directed by STRUCTURAL CONSULTANT / SBI.

MATERIAL TESTING FREQUENCY CHART

A chart showing the recommended time and quantity scheduled for conducting test on various building materials is given. Please ensure that tests are carried out according to the above guidelines. Contractor's rate should include for necessary expenditure for testing including transport of samples of following tests.

No	Material	Test	Test Procedure	Minimum Quantity	Frequency
1	Sand	a) Silt Content b) Bulking c) Particle size distribution	Field Field Field	20 Cum 20 Cum 40 Cum	20 Cum or part thereof --- Do --- Every 40 Cum required for RCC work
2	Stone	a) Soft and Deleterious b) Particle size distribution	IS - 2336 Part – II Field	45 Cum.	As required. Every 45 Cum part thereof for RC work. For rest of work as Desired.
3	Cement Concrete or RCC	Slump Cube Strength	Field Field / Laboratory	20 Cum slab, beams and connected columns 5 Cum in columns	Once a day or as desired. Every 20 Cum of a day's concrete. Every 5 Cum column concrete
4	Steel	a) Tensile Strength	IS - 1529	20 tonnes	Every 20 tonnes or part.
		b) Bend Strength	---- Do ----	---- Do ----	---- Do ----
5	Lime	Chemical and Physical properties of lime.	IS - 6932	5 M.T.	10 M.T. or part thereof
6	Bricks	Dimensions Water absorption Efflorescence compressive strength		Designation 100 75) 50) 40,000 35) --- Do --- 100-40,000 75) 50) 100,000 35)	Every 40,000 or part thereof. Every 100,000 or part thereof one test for source of 40,000 or part thereof. Two tests for 1st lot of 40,000 and one test later for every 40,000 and part thereof.
7	Brick Tiles	Compressive Strength		40,000	For 40,000 or part.
		Efflorescence		40,000	One test per Source.

8	Marble	Moisture absorption Mohs hardness scale	IS – 1124 – 1974 IS – 1706 – 1972	Rs.10,000/- Value	Rs. 10,000/- or part thereof. (Value)
9	Timber	Moisture	IS– 11215 – 1985	1 Cum.	Every one Cum and part.
10	Aluminum door or window fitting	Aluminum door or window fitting	IS – 5523 – 1969	Rs. 5,000/-	Rs. 10,000/- or part thereof.
11	Ceramic Tiles / Vitrify Tiles / Designer pre cast Concrete Tiles and interlocking paver block	a) Transverse Strength b) Water Absorption c) Abrasion test	IS-1237 --- Do ---- --- Do ----	200 Tiles 200 Tiles 200 Tiles	2000 Tiles Part there off --- Do ---- --- Do ----
12	Flush Door	a) End Immersion b) Knife c) Adhesion	IS 2207	22 – 65 66 – 100 101 – 180 181 – 300 301 – 500 501 – above	Destructive tests No. of shutters. 1 2 2 3 4 5
13	Tar felt Type-3 Grade - I	Conform to I.S. 1322 – 1970			One Test
14	Pig Lead	Conform to I.S. 782 – 1978			One Test
15	RCC Mix Design	All test as per I.S.:456-2000		As Directed	As Directed

Note : The Contractor will have to take necessary material test other than above test as per I.S. code for above material or other than above material, if required and as directed by the STRUCTURAL CONSULTANT / SBI as his own cost.

MATERIALS MINIMUM SPECIFICATIONS/ REQUIREMENTS

- (1) Material shall be of best approved quality obtaining and they shall comply with the respective Indian Standard Specification.
- (2) Samples of all materials shall be got approved before placing order and the approved sample shall be deposited with the Structural Consultant.
- (3) In case of non-availability of materials in metric sizes the nearest size in FPS units shall be provided with prior approval of the Structural Consultants for which neither extra will be paid nor
- (4) shall any rebates be recovered.
- (5) If directed, materials shall be tested in any approved Testing Laboratory and the test certificates in original shall be testing including charges for repeated tests, if ordered, shall be borne by the Contractor.
- (6) It shall be obligatory for the Contractor to furnish certificate, if deemed by the Structural Consultants, from manufacturer or the material supplier that the work has been carried out by using their material and as per their recommendations.
- (7) All materials supplied by the Employer / any other Specialist Firms shall be properly stored and the Contractor shall be responsible for its safe custody until they are required on the works and till the completion of the work.
- (8) Unless otherwise shown on the Drawings or mentioned in the "Schedule of Quantities" or special specification, the quality of materials, workmanship, dimensions, etc., shall be as specified as hereunder.
- (9) All equipment and facilities for carrying out field tests on materials shall be provided by the Contractor without any extra cost.

a) Cement:

Cement shall comply in every respect with the requirements of the latest publications of IS: 269 and unless otherwise specified ordinary Portland cement shall be used.

The weight of ordinary Portland cement shall be taken as 1440 kg. Per CuM. (90 lbs. Per Cu.ft.). Cement shall be measured by weight and in whole bags, and each undisturbed and sealed 50 kg. bag being considered equivalent to 35 liters (1.2 Cu.ft.) in volume care should be taken to see that each bag contains full quantity of cement. When part bag is required cement shall be taken by weight or measured in measuring boxes.

No other make of cement but that approved by the Structural Consultants will be allowed on works and the source of supply will not be changed without approval of Structural Consultant in writing. Test certificates to show that cement is fully complying the specifications shall be submitted to the Structural Consultants and notwithstanding this, the Structural Consultant may at his discretion, order that the cement brought on site and which he may consider damaged or of doubtful quality for any reason whatsoever, shall be re-tested in an approved testing laboratory and fresh certificates of its soundness shall be produced.

Cement ordered for re-testing shall not be used for any work pending results of re-test.

Cement shall be stored in weather-proof shed with raised wooden plank flooring to prevent deterioration by dampness or intrusion of foreign matter. It shall be stored in such a way as to allow the removal and use of cement in chronological order of receipt i.e., first received being used first used. Cement deteriorated and or clotted shall not be used on the work but shall be removed at once from the site. However, allowing use of warehouse set cement shall be determined by the Structural Consultant.

b) Lime: Lime shall comply in every respect with the requirements of IS: 712 and shall be made from approved lime stone or kankar and properly burnt. It shall be free from excess of unburnt kankars or lime stone ashes or other extraneous materials and shall be stored in weather-proof sheds. Lime which has damaged by rain, moisture, or air slacking shall not be used but shall be removed from the site of work forthwith. Lime shall be slacked with fresh water and screened through appropriate screens and stored and used within 14 days provided it is protected from drying out. Field tests according to IS: 1624 shall be carried out from time to time to determine the quality of lime.

c) River Sand:

River sand shall conform to IS: 383 and relevant portion of IS: 515. It shall pass through a I.S. sieve 4.75 mm. (3/16 B.S.) test sieve, leaving a residue not more than 5%. It shall be from natural source i.e. only river or crushed stone screenings, if allowed, chemically clean, sharp, hard durable, well graded and free from dust, pebbles, clay, shale, salt, organic matter, loam, mica or other deleterious matter. The sum percentages of all deleterious substances to acceptable limits. River sand shall not contain any trace of salt and it shall be tested and river sand containing any trace of salt shall be rejected.

The fine aggregate i.e. river sand for concrete shall be graded within limits as specified in IS: 383 and the fineness Modules may range between 2.60 to 3.20.

The fine aggregate shall be stacked carefully on a clean hard dry surface so that it will not get mixed up with deleterious foreign materials. If such a surface is not available a platform of planks or corrugated iron sheets or brick floor or a thin layer of lean concrete shall be prepared.

d) Fine & Coarse Aggregate:

Shall consist of crushed or broken stone 95% of which shall be retained on 4.75 mm. IS tests sieve. It shall be obtained on crushing Granite, Quartzite, Trap, Basalt, or similar approved stones from approved quarry and shall conform to IS:383 and IS 515. Fine & Coarse aggregate shall be chemically inert when mixed with cement and shall be cubical in shape and be free soft, friable, thin, porous, laminated or flaky pieces. It shall be free from dust and any other foreign matter.

Gravel / Shingle of desired grading may be permitted as a substitute in part or full in plain cement concrete if the Structural Consultant is otherwise satisfied about the quality of aggregate. For all the R.C.C. works the size of coarse aggregate shall be 20 to 25 mm. and fine aggregate shall be 10 to 15 mm.

e) Reinforcement:

Reinforcement shall be of mild steel tested quality conforming to I.S.: 432-1966 and any other I.S. applicable or deformed bar conforming to IS:1786 and Is:1139 or hard drawn Fe 415 (Tor Steel) steel wire fabric conforming to IS:1566;1967.

All finished bars shall be free from cracks, surface flaws, laminations, jagged and imperfect edges.

f) Bricks:

Bricks shall generally comply with IS:1077 except in size which shall be classified as 1st and 2nd class. 1st class bricks shall be the best quality locally available table moulded, well burnt but not over burnt, have plain rectangular faces with parallel sides and sharp right-angled edges, have a fine compact and uniform texture. The bricks shall be free from cracks, chips, flaws, stones or subsequent to soaking in water. It shall emit a clear ringing sound on being struck and shall not absorb water more than 20% by weight. Common building bricks shall have a compressive strength of 35 kg. / sqm unless otherwise specified for first class bricks.

g) Surkhi:

Shall be made by grinding well burnt bricks, brick bats, burnt clay balls, etc., the brick etc., to be used shall be prepared from selected clay. The quality shall confirm to IS:1344.

Bricks bats, etc., shall be ground in mechanical disintegrator to a fine powder passing through IS Sieve No. 9 (2.36 mm.) with a residue not exceeding 10% by weight.

Surkhi for lime surkhi plaster shall be ground to fine powder in a mortar mill to pass through IS Sieve 150 micron (No. 100).

Surkhi shall be stored in a weather-proof shed on a brick pave platform.

h) Water:

Water for mixing cement / lime / surkhi mortar or concrete shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil, acid and injurious alkali, salts, organic matter and other deleterious materials which will either weaken the mortar or concrete or cause efflorescence or attack the steel in reinforced cement concrete. Water shall be obtained from sources approved by the Structural Consultant. Potable water is generally considered satisfactory for mixing and curing concrete, mortar masonry, etc., where water other than main source is used this shall be tested in an approved testing laboratory to establish its suitability. All charges connected therewith shall be borne by the Contractor.

i) Timber:

Timber shall be well seasoned and of the best quality Indian Teak of specified species viz., Dandeli, Balarshah, Melabar, C.P.

Timber shall be considered as well seasoned, if its moisture content does not exceed the following limits.

a) Timber for frames 14%

b) Timber for planking, shutters, etc. 12%

The moisture content of timber shall be determined according to method described in paragraphs 4 of IS:287 for Maximum permissible moisture content of timber used for different purpose in different climatic zones.

In measuring cross-sectional dimensions of the frame pieces tolerance up to 1.5 mm. shall be allowed for each planed surface.

j) Superior quality Indian Teak Wood:

Superior quality Indian Teakwood means Dandeli, Balarshah, and Malabar Teak. It shall be of good quality and well-seasoned. It shall have uniform colour, reasonably straight grains, and shall be free from large. Loose, dead knots, cracks, shakes, warp, twists, bends, borer holes, sap-wood or defects of any kind. No individual hard and should knots shall be more than 1 cm. in diameter and aggregate areas of all knots shall not exceed ½% of area of the piece. There shall not be less than 6 growth rings per 2.5 cm. width.

k) 1st Class Indian Teakwood:

1st Class Indian Teakwood means C.P. and Bulsar teak of good quality and well-seasoned. It shall have uniform colour, reasonably straight grains and shall be free from large. Loose dead knots, cracks, shakes, warp, twists, bends, sap-wood or defects of any kind. No individual hard and should not shall be more than 2.5 cm. in diameter and aggregate areas of all the knots exceed 1% areas of the piece. There shall not be less than 5 growth rings per 2.5 cm. width.

l) 2nd Class Indian Teakwood:

Shall be similar to first class Indian teak wood except that knot up to 4 cm. diameter and aggregate area of all knots up to 1 ½% of the area of the piece shall be allowed. There shall not be sapwood up to 15% is allowed.

m) Flush Doors:

All flush doors shall be solid core exterior grade unless otherwise specified and it shall generally confirm to IS:2202 and shall be fabricated as described under specification.

n) Steel Windows and Doors:

Steel windows and doors shall be fabricated of steel sections conforming to IS:226. They shall conform to IS 1038. Unless otherwise specified the details of construction etc., shall be as described under specification.

o) Floor Tiles:

Designer pre-cast concrete tiles and interlocking paver block, plain cement tiles, chequered tiles, mosaic tiles terrazzo tile shall conform to IS:1237. For neutral shade tiles grey cement shall be used. Tiles shall be compacted by mechanical vibration and hydraulically pressed. It shall be of choice shade and shall have desired pattern of chip distribution. The sizes of chips to cement in terrazzo or mosaic floor shall be as specified in IS:1237. The size and thickness of tiles shall be as approved by the Structural Consultant.

p) Ceramic / Vitrified Tiles:

White or coloured glazed tiles shall comply with IS:777 or relevant or latest I.S. code. It shall be from an approved manufacturer and shall be flat and true to shape. They shall be free cracks, crazing, spots, chipped edges and corners. The glazing and colour shall be uniform shade and unless otherwise specified the tiles shall be 6 mm. thick.

q) Marbles:

Marble slabs for flooring, dado veneering etc., shall be of kind specified in the item such as white or pink, Makrana, Chittoor black, Bhanslana black, Jaisalmer yellow, Baroda green, Patiala (Pepsu) grey, etc., Marble from which slabs are made shall be selected quality, hard, sound dense and homogenous in texture and free from cracks, weathering, decay and flaws. Before starting the work, the contractor shall get the sample of Marble slabs approved by the Structural Consultant. The slabs shall be machine cut and machine polished.

r) Kotah / Shahabad / Cuddupah / Granite:

Shall be of selected quality, hard, sound, dense, and of homogeneous texture, free from cracks decay, weathering and flaws. Stone slabs shall be of uniform colour as approved by the Structural Consultant. They shall be machine cut and machine polished where specified and shall confirm to the required size. Thickness shall be specified in the respective items.

s) Glazing:

Glass used for glazing shall be float glass of best quality, free from flaws, specks bubbles and shall be 2.9 mm. thick up to 0.60 x 0.60 mm. size and for larger size it shall be minimum 4 mm. thick unless otherwise specified in the Schedule of Quantities.

The following type of glasses shall be used: -

- 1) For Office Building Clear glass or as specified in the Schedule of Quantities.
- 2) Office (toilets) Clear or frosted
- 3) Partitions Frosted

t) Asbestos Roofing & rain Water Pipes:

All Asbestos pipes and fittings shall comply with IS:459 and shall be free from cracks, chipped edges of corners and other damages.

u) MPI. Sheets:

MPI. Sheets shall be of a gauge specified in the description of the item and shall conform to the IS:277. The sheets shall be free from cracks, spilt edges, twists, surface flaws, etc. They shall be clean bright and smooth. Galvanizing shall be uninjured and the perfect condition. The sheet shall show no sign of rust or white powdery deposits on the surface. The corrugations shall be uniform in depth and pitch and parallel.

v) Paints:

Lime for lime wash, dry distemper, oil bound distemper cement primer, oil paint, enamel paint, flat oil paint, plastic emulsion paint, anti-corrosive primer, red lead, water-proof cement paint and exterior grade Acrylic Emulsion paint, cement paint, sand-tex matt shall be from an approved manufacturer and shall conform to the latest Indian Standard for various paints. Ready mixed paints as received from the manufacturer without any admixture shall be used, except for addition of thinner, if recommended by the manufacturer.

w) Mortar:

1) Lime Surkhi Mortar: Lime and surkhi shall conform to the specifications. It shall be composed of approved lime and surkhi in proportion of 1 lime to 2 surkhi mixed thoroughly. The ingredients shall be accurately gauged by measure and shall be well and evenly mixed together on a platform and water added to make it homogeneous. When large quantities are required the mortar shall be mixed in a mechanical grinder.

2) Cement Mortar: Cement mortar shall be of proportions specified for each type of work in the schedule. It shall be composed of Portland Cement and sand. The ingredients shall be accurately gauged by measure and shall well and evenly mixed together in a mechanical pan mixer, care being taken not to add more water than is required. No mortar that has begun to set shall be used. River sand shall be used unless otherwise specified.

If hand mixing is allowed, then it shall be done on pucca water-proof platform. The gauged materials shall be put on the platform and mixed dry. Water will then be added and the whole mixed again until it is homogenous and of uniform colour. Not more than one bag of cement shall be mixed at one time and which can be consumed within half an hour of its mixing.

3) Composite Lime, Cement, Sand Mortar: The mortar shall be of proportions specified for each type of work in the schedule of quantities. It shall comprise of Portland cement, lime and sand. Lime shall be measured in gauge boxes similar to one used for measuring cement and sand to the proportion specified and sufficient water then added to it to form a thick slurry thus obtained shall then be added to dry cement and sand mixture and thoroughly mixed to make a workable homogenous mortar of uniform colour by adding more water if necessary. Mechanical mixers shall generally be used for mixing such mortars. If hand mixing is allowed it shall be done on pucca platform.

WORKMANSHIP

FLOORING, SKIRTING, DADO AND STONE VENEERING

All flooring, skirting, dado and stone veneering etc., shall be executed strictly as per relevant IS Specification and in workman-like manner.

Indian Patent Stone:

Selection of materials, method of mixing, placing and compacting shall generally conform to the specifications under plain and reinforced cement concrete described earlier. A stiff mix consistent with workability shall be used.

Preparation of Surface:

Before the operation for laying topping is started the surface of base concrete shall be thoroughly cleaned of all dirt, loose particles coked mortar droppings and laitance if any, by scrubbing with coir or steel wire brush. Where the concrete has hardened so much that roughening of surface by wire brush is not possible, the surface shall have roughened by chipping or hacking at close intervals. The surface shall then be cleaned with water and kept wet for 12 hours and surplus water shall be removed by mopping before the topping is laid.

Laying:

The screed strips shall be fixed over the base concrete dividing it into suitable panels. Before placing the concrete for topping, neat cement slurry shall be thoroughly brushed into the prepared surface of the base concrete just ahead of the finish. Concrete of specified proportion and thickness shall be laid in alternate panels to required level and slope and thoroughly tamped.

Finishing the Surface:

After the concrete has been fully compacted it shall be finished by troweling or floating with neat cement rendering. Finishing operations shall start shortly after the compaction of concrete and the surface shall be troweled three times at intervals so as to produce a uniform and hard surface. The satisfactory resistance of floor to wear depends largely upon the care with troweling is carried out. The time intervals allowed between successive troweling is very important. Immediately after placing cement rendering, only just sufficient troweling shall be done to give a level surface. Excessive troweling in the earlier stages shall be avoided as this tends to bring a layer rich in cement to the surface. Sometime, after the first troweling, the duration depending upon the temperature, atmospheric conditions and the rate of the set of cement used, the surface shall be re-troweled to close any pores in the surface and to bring to surface and to scrape off any excess water in concrete or laitance. No dry cement shall be used directly on the surface to absorb moistures or to stiffen the mix. The final troweling shall be done well before the concrete has become too hard but at such time that considerable pressure is required to make any impression on the surface.

If directed by the Structural Consultant, approved mineral pigment shall be added to the rendering to give desired colour and shade to the flooring at no extra cost.

When instead of 1:2:3 or 1:2.5:3.5 mix, 1:2:4 is specified the topping shall be rendered with 1:1 cement mortar with a suitable mineral pigment, if directed, instead of cement only. If specified in the Schedule of Quantities, the flooring shall be machine polished as per the Structural Consultant's instructions. Wherever the patent stone flooring is used as finishing on roof the joints shall be filled with an approved bitumastic filler in workman like manner.

Ironite Topping:

Instead of finishing the top with rendering coat of 1:1 cement mortar, the top shall be finished with 12 mm. thick ironite topping. Unless otherwise specified, one part of ironite and four parts of ordinary cement by weight shall be mixed dry thoroughly. This dry mixture shall be mixed with stone grit 6 mm. (1/4") and down size or as otherwise directed in the ratio of 1:2 by volume and well turned over. Just

enough water shall be added to this dry mix and mixed thoroughly well and laid to uniform thickness of 12 mm. and compacted. After initial set has started the surface shall be finished as directed.

Plain and Coloured Cement Tiles, Marble Mosaic and Terrazzo Tiles Flooring:

The tiles shall conform to IS : 1237 having the colour approved the Structural Consultant and the rate shall include provision of border tiles and tiles of different colours in pattern if directed. The mosaic topping of lighter shade tiles shall be made of White Cement with an approved shade pigment and neutral shade shall be of Grey cement with an approved shade pigment. The type of tiles shall be as specified in respective items.

The sub-grade shall be thoroughly wetted after cleaning of all dirt, laitance, and loose material. A bed of lime mortar consisting of one part of lime and two parts of sand shall be laid and properly leveled to an average thickness of 25 mm. and the surface shall be kept slightly rough to form a satisfactory key for tiles. Neat cement paste of honeylike consistency shall be spread over mortar bed, over such area at a time as would accommodate about 20 tiles. Tiles shall be soaked in water for 15 minutes and allowed to dry for the same duration. Tiles shall then be fixed with a thin coat of cement paste on back of each tile and then each tile being gently tapped with a wooden mallet till it is properly bedded and in level with adjoining tiles. Joints shall be fine and as imperceptible as possible.

After tiles have been laid in a room or a day's fixing work is completed, surplus cement grout that may have come out of the joints may be wiped off gently and joints cleaned. A thin slurry of coloured cement matching to the colour of tiles shall be spread over it and rubbed so as to seal even a thinnest joint between the tiles and make it impervious and the flooring cured for 7 days. The tiles shall be polished and finished according to IS:1443.

Dado, Skirting and Risers:

Tiles shall conform to IS:1237 and shall be of approved design. The tiles shall be fixed near cement grout on a blacking coat consisting of 1:4 cement sand plaster of 15 mm. thick. The top and bottom junctions of tiles shall be rounded off neatly as directed. The joints shall be filled with matching shade coloured cement slurry. The surface shall be kept wet for 7 days and then polished with carborandum stone to obtain smooth surface and fine polish.

Shahabad / Tandur / Kotah / Cuddupah Stone Flooring:

The flooring shall be either with rough stone or machine cut and machine polished as specified in respective items and shall be of specified thickness and of approved quality and size, free from cracks and flakes and shall be uniform in colour with straight edges. The sides of machine cut and machine polished stone shall have perfect right angles and surface smooth. The stone slabs shall be laid and finished as described under plain cement or colour cement tiles on a bedding of 1:2 lime mortar 25 mm. (Average) thickness. The finished stone surface thus laid shall then be polished to the required degree as approved by the Structural Consultant.

In Dado, Skirting, Risers etc.:

Stone slabs shall be laid on backing plaster of cement mortar 1:4 of 15 mm. to 20 mm. thick and finished as described under plain and coloured cement tile dado.

Marble mosaic / Terrazzo in situ work in flooring, dado, skirting etc.:

The terrazzo / mosaic finish shall be laid on an under layer of thickness as specified in the respective items. The topping shall consist of a layer of marble chips of selected sizes, colour and design approved by Structural Consultant, mixed with cement with desire shade of pigment. For lighter shade mosaic. terrazzo white cement shall be used and for neutral shade, grey cement shall be used. The proportion of terrazzo mix shall be three parts of cement one part of marble powder by weight. For every part of cement marble powder mix, the proportion of marble aggregate by volume shall be 1.5 parts unless otherwise specified. The topping shall be mixed and laid in panels as described in IS:2114

and as per decorative designs prepared by Structural Consultants. The dividing strips of panels shall be Aluminum or as specified in the Schedule of Quantities. It shall be polished as specified in IS: 2114.

Broken Mosaic Flooring:

Broken mosaic finish shall be laid on an underlayer of thickness as specified in the item. Pieces of mosaic tiles shall be obtained from broken marble mosaic tiles of approved shade conforming to IS:1257. The sizes of pieces shall be suitable to obtain the desired pattern of flooring as shown on the drawings or as approved by Structural Consultant.

Broken pieces shall be thoroughly wetted before fixing them. Ordinary or coloured cement grout shall be spread on the bedding. Mosaic tile pieces shall be fixed piece by piece to the desired pattern. The flooring shall be laid to correct level and slopes and compacted by straight screed tamper. The grout shall cream up to the surface. The junctions of the flooring and the wall shall be rounded and the flooring shall be extended along the wall to about 15 cm. (6"). After the day's work, the surplus cement grout that may have come out of the joints shall be cleaned off. The flooring shall be cured for seven days and then polished with a machine as stipulated in IS:1443.

Broken China Mosaic:

Broken China Mosaic flooring shall be exactly as per broken mosaic tile flooring except that the broken pieces shall be of China of approved colour and manufacturer and the floor shall not be polished.

Marble Flooring:

Marble slabs shall be of the best Indian marble of White or other approved colour as specified in the item. They shall be hard, dense, uniform and homogeneous in texture. They shall have even crystalline grain and free from defects and cracks. The surface shall be machine polished to an even and perfectly plane surface and edges machine cut true to square. The rear face shall be rough enough to provide a key for the mortar. No slab thinner than the specified thickness at its thinnest part. The sizes of the slabs shall be as specified in the respective items.

The slabs shall be laid as described under mosaic tile flooring in every respect.

White Glazed / Ceramic Tiles / Vitrified Tiles in Flooring and Dado:

White Glazed Tiles from an approved manufacturer conforming to IS:777 shall be used. They shall be of specified size and thickness. All specials viz. coves, internal and external angles, corners, beads etc., shall be used wherever directed. Under layer of specified thickness and mortar of stipulated proportion shall be laid as described in marble mosaic flooring. Tiles shall be washed clean and set in cement grout and each tile being gently tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. The joints shall be kept as thin as possible and in straight lines or to suit the required pattern. After the tiles have been laid, surplus cement grout shall be cleaned off.

The joints shall be cleaned off the grey cement grout with a wire brush or trowel to a depth of 5 mm. (3/16") and all dust and loose mortar removed. Joints shall then be flush pointed with white cement. The floor shall then be kept wet for seven days. After curing, the surface shall be washed with mild hydrochloric acid and clean water. The finished floor shall not

PLASTERING

Scaffolding:

Scaffolding for carrying out plastering work shall be double steel scaffolding having two sets of vertical supports so that the scaffolding is independent of the walls.

Preparation of surface:

All put log holes in brick work and junction between concrete and brick work shall be properly filled in advance. Joints in brick work shall be raked about 10 mm. if not raked out while constructing brick masonry work and concrete surface hacked to provide the grip to the plaster, if not hacked earlier projecting burrs of mortar formed due to gaps at joints in shuttering shall be removed. The surface

shall be scrubbed clean with wire brush / coir brush to removed dirt, dust etc., and the surface thoroughly washed with clean water to remove efflorescence, grease and oil etc., and shall be kept wet for a minimum of six hours before application of plaster.

Neeru Plaster:

Cement mortar of specified proportion and thickness shall be prepared in small batches and applied to the wall surface / ceiling. The ensure proper thickness, gauged patches shall be made at 1.5 to 2 m. apart and the surface plastered true to line, level and plumb taking special care to finish jambs of windows, doors, wall returns, corners, junctions etc.

Sand-faced Plaster:

The surface shall be prepared as above.

The coat of cement mortar in proportion of 1:4 or as specified, shall be applied uniformly all over the surface to a thickness of 12 mm. and finished true to level and line and keys shall formed on the surface. The surface shall be kept moist till the finishing coat is applied.

The finishing coat shall be applied a day or two after. The proportion of mortar for finishing coat shall be one part of cement and three parts of selected, well graded and washed sand, or as specified under item and it shall be applied in a uniform thickness of 6 mm. (1/4").

The surface shall be tapped to uniform grained texture by using sponge pads as directed. Curing shall start after 24 hours and the surface kept wet for seven days.

Rough coat plaster with colour finish:

This finish shall be similar to Rough cast plaster above except a high-grade mineral pigment of approved shade shall be mixed with white cement instead of ordinary grey cement while preparing the mortar.

Water-proofing Treatment:

Unless otherwise specified, the Contractor shall carry out waterproofing treatment of basements, terrace and water retaining structures through reputed firms having specialization in the line and approved by the Structural Consultants. The Contractor shall also furnish full details of such treatment to the Structural Consultants and provide all information / proof etc., regarding the effectiveness of the treatment when called upon to do so. All such treatment shall have to be guaranteed in the form approved by the Employer for a minimum period of ten years. Any defects / leakages noticed during the guarantee period shall have to be rectified free of cost by the Contractor including reinstating the surface to its original condition and finish.

Type 1: Water-proofing of sunk portions of floor slabs for baths, W.C. and kitchen mories etc., in residential buildings, unless otherwise specified, shall be done as specified in the schedule and shall generally comprise of:

- a) A coat of hot bitumen, min. 6 mm. thick screened with stone grit.
- b) Min. 20 mm. thick cement plaster in cement mortar 1:3 with approved water-proofing cement compound as per manufactures specifications. The plaster shall be cured by pounding for seven days.

The rate for the above treatment shall include drying and cleaning surfaces free of dust etc. and wiping with kerosene before application of bitumen. The vertical faces and returns shall also be treated similarly. The actual area treated including vertical faces and returns shall be measured and paid for. The work should be done in such a way that the finished flooring in bath has a minimum slope of 20 to 25 mm.

Type 2: The methodology for the waterproofing work for areas is as follows:

Surface preparation: Cleaning and preparation of surface with the help of wire brush or grinder. Wash the roof with clean water. Remove all loose concrete, grease, oil using wire brush, and scrubber. Repair and fill all cracks, joints and annular space, bore pack around G.I. pipes are sealed with non-shrink grout of approved company 10M or by preparing polymer modified mortar mixed with approved chemical URP in the ratio of 1:3 by adding polymer 10% by weight of the cement.

JOINT TREATMENT: Providing and applying 2 coats of acrylic polymer modified cementitious coating Dr. Fixit Fastflex of M/s Pidilite Industries having elongation at break 120%; 5 Bar resistance to positive water pressure, Adhesive Strength ASTM D 7234- 1 N/mm², Water Vapor Transmission as per ASTM E96 of 0.7 Perms and Crack bridging ability as per EN 1062-7 up to 2mm. Apply two coats of Dr. Fixit Fastflex slurry @ coverage of 0.42 - 0.50 M² / Kg of mix slurry. Allow the first coat to dry for 6 to 8 hours. Then, apply the second coat at a direction perpendicular to first coat. Apply the coating up to 300 mm height on vertical surfaces, sprinkle the quartz sand / fine sand over the second and final coat when it is still wet for vertical wall application for creating a firm key for plastering to ensure complete waterproofing. Allow the coating to air cure for 4-5 days.

BRICK BAT COBA FOR PROTECTION AND SLOPE: Providing & laying brickbat coba of minimum 120 mm thick laid over a bed of cement mortar (1:4), including integral waterproofing admixture, approved chemical conforming to IS 2645:2003@ 200 ml per bag of cement. The surface should be neatly finished with the help of wooden / steel hand trowel with false marking of 300 mm x 300 mm square. The vertical surfaces of the adjoining walls are to be treated up to a height of 300mm including rounding of junction, groove cutting, pointing, coving etc. The curing should be done for 2 weeks.

CHINA MOSAIC OVER BRICK BAT COBA FOR TERRACE: Finishing the surface with 20 mm thick cement mortar of mix 1:4 (1cement:4 coarse sand) admixed with water proofing compound (conforming to IS: 2645) at the rate of 1 Kg per bag, Including laying in required position flooring of broken China Mosaic (broken pieces of China Chips) of approved colour and pattern including neat cement float, giving proper slopes, compaction, curing, finishing preparing.

PAINTING

General:

Wherever scaffolding is necessary, it shall be double scaffolding. The surface shall be thoroughly brushed free from mortar droppings and foreign matter. All steel work shall be cleaned of loose rust, mill scales etc. so as to expose the original surface. All broken edges, cracks, loose plaster and wavy surface shall be brought up either by patch plaster work or by plaster of paris.

All materials viz., dry distemper, oil bound distemper, oil paint, flat oil paint, synthetic enamel paint, plastic emulsion paint, cement primer, red lead and other primers and metallic paints shall conform to respective I.S. specifications and shall be obtained from approved manufactures. All paints shall be brought on site in sealed thins in ready mixed form and shall be applied directly with the addition of thinner, if recommended by the manufacturers.

White Washing:

White was shall be prepared from lime slaked on spot, mixed and stirred with sufficient water to make a thin cream. This shall be allowed to stand for 24 hours and shall be screened through clean cloth. Four kg. gum dissolved in hot water shall be added to each cubic meter of the cream (115 gm. per cft.). Blue shall be added to give required whiteness. The approximate quantity of water to be added in making cream shall be five liters per kg. of lime.

White wash shall be applied in specified coats by using flat brushes or spray pumps. Each coat shall be allowed to dry before next coat is applied. If additional coats than what have been specified, are necessary to obtain uniform and smooth finish, it shall be given at no extra cost. The finished dry surface shall not show any signs of cracking and peeling nor shall it come off readily on the hand when rubbed.

If directed by the Structural Consultants one coat of chalk and glue shall be applied before application of white / colour wash at no extra cost.

Colour Wash:

Colour wash shall be prepared by adding mineral colours not affected by lime to white wash. No colour wash shall be done until a sample of the colour wash to the required tint or shade has been got approved from the Structural Consultants. Colour wash shall be applied as specified under white wash.

Oil Bound Distemper:

The surface shall be prepared as specified above. A primer coat of either cement primer or any approved distemper primer shall be applied. After the primer coat has dried, the surface shall be lightly sand papered and dusted to make to smooth to receive distemper.

Distemper shall be prepared as per the directions of the manufacturer and conforming to shade approved. It shall be applied in specified coats, taking care to allow for drying of each coat before subsequent coats are applied.

Water-proof Cement Paint / Sand-tex matt Paint:

The surface shall be prepared as specified above and thoroughly wetted with clean water before water-proof cement paint is applied.

The paint shall be prepared strictly as per manufacturers specifications and in such quantities as can be used up in an hour of its mixing, as otherwise the mixture will set and thicken, affecting flow and finish.

The paint thus prepared shall be applied on clean and wetted surface with brush or spraying machine. The solution shall be kept stirred during the period of application. It shall be applied on the surface which is on the shady side of the building so that the direct heat of the sun on the surface is avoided. The completed surface shall be watered after the days work. Number of coats shall be as specified in the item.

Painting – Oil / Enamel / Plastic Emulsion etc.:

Ready mixed oil paint, flat oil paint, plastic emulsion paint, ready mixed synthetic enamel paint, etc., shall be brought in original containers and in sealed tins. If for any reason thinner is necessary, the brand and quantity of thinner recommended by the manufacturer or as instructed by the Structural Consultant shall be used. The surface shall be prepared as specified above and a coat of approved primer shall be applied. After 24 hours drying approved or specified quality paint shall be applied evenly and smoothly. A filler putty coating may be given to give a smooth finish. Each coat shall be allowed to dry out thoroughly and then lightly rubbed down with sand paper and cleaned of dust before the next coat is applied. Number of coats shall be as specified in the item and if the finish of the surface is not uniform, additional coats as required shall be applied to get good and uniform finish at no extra cost. After completion no hair marks from the brush or clogging of paint puddles in the corners of panels, angles or moulding etc., shall be left on the work. The glass panes, floor etc. shall be cleaned of stains.

When the final coat is applied, if directed, the surface shall be rolled with a roller or if directed, it shall be stippled with a stippling brush.

Miscellaneous Items of Work:

The rates quoted by the Contractor for all miscellaneous items of work viz. Cooking platforms, moories, built-in cupboards, counters, partitions, railings, electrical meter, switchboard cupboards, etc., shall be for the work as described in the schedule of quantities and as show in detailed drawings and shall be to the entire satisfaction of the Structural Consultants.

Indicative Check List

Project

Column/Beam/Ceiling/Floor

Checklist No.

Sr. No.	Description	Date	Completed		Area as per Tender Item Unit	Checked By	
			Yes	No		Cont. Sign	Client Sign
1.	Fixing MS props Supports						
2.	Tapping Work						
3.	Breaking Work						
4.	Chipping loose concrete						
5.	Application of Rust removal of existing bars						
6.	Application of Anti-Corrosive coating to existing bars						
7.	Application of 2 coats KP 100 on entire concrete surface						
8.	Fixing Steel Work						
9.	Steel Fixing work						
10.	Shear Connector fixing						
11.	Grouting Work (Epoxy grout)						
12.	Application of Polymer modified mortar						
13.	Upto 15mm thick						
14.	Beyond 15 mm to 30mm thick						
15.	Application of corrosion inhibitor to existing surface						

MEASUREMENT SHEET

M/s. _____								
Name of Work: _____						Page No. _____		
Date: _____								
Sr.No.	Description	Unit	No.	Length	Breadth	H/Depth	Qty.	Remarks

Declaration
(To be typed & given on the letter – head of the Vendor)

I/We have inspected all the sites of the “**Proposed Structural Repair, Renovation and Retrofitting Works of C-01 & C-02 Buildings at SBI’s Residential Colony Sector-13, Nerul, Navi Mumbai**”, of State Bank of India and I/We have made me/ us fully acquainted with the local conditions in and around the sites of works and proposed layout drawings of works, drawings of each items, RFP, Technical bid & Price bid, etc. complete.

I/We hereby declare that I/ We have carefully gone through the conditions laid down in the Notice Inviting Tender, General notes, General Conditions of Contract, Special conditions, Schedule of approximate quantities and rates , Form of Agreement, General Specification, Approved manufacturers/ natural source of materials (i.e. all parts of Technical bid), Technical Specifications of schedule of quantities (i.e. all parts of Price bid), and clearly understood all the same and on the basis of the same I/ We have quoted our rates in the Schedule of Quantities/ Price Bid attached with the tender documents.

We accept all the terms and conditions of tender documents. We will abide by the technical specification mentioned in the tender. We here by undertake to use only specified material/ make as per the tender schedule.

I/ We hereby declare that, in particular during execution of all works at site; it will be my/ our sole responsibility to strictly adhere to/ meticulously follow the General Specification, Approved manufacturers/ natural source of materials; Safety, Health and Environmental (SHE) guidelines; Labour Laws; Technical Specifications of schedule of quantities, all drawings of layout and items.

For any type of deviation (to any of above or subsequent instructions), it will be my/our responsibility to obtain the written instruction of the Consultants /SBI, appropriate Government Authorities, local bodies for the same failing which it shall be deemed that I have carried out any such deviations at my own and I shall be duty bound to replace all the deviated material/ works from the site at my/ our cost as well as I shall be liable to penalized by the employer as deemed fit and for all such loses made thereof, I/ we shall not have any right to arbitrate in any manner.

I/ We hereby declare that I/ We shall obtain necessary clarifications, drawings of items from Consultants /SBI in time and also shall uniformly maintain such progress as may be directed by the Consultants /SBI to ensure completion of same within the target date/ time as mentioned in the tender document.

Date:

Signature and seal of Contractor/Tenderer

Witness:

1.

2.