भारतीय स्टेट बैंक
State Bank of India

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

NOTICE INVITING TENDER
Comprising of Pre-Qualification Bid (PQ),
Technical Bid (TB), Price Bid (PB) & Drawings.

FOR THE PROPOSED COMPOSITE INTERIOR WORKS COMPRISING OF CIVIL, INTERIOR, HVAC, ELECTRICAL, NETWORKING, SECURITY & FIRE FIGHTING WORKS AT 5TH FLOOR A & B-WING SBI GITC CBD BELAPUR.

(Volume – 2)

RFP No. SBI/GITC/Estate/2026-27/02

Last date for submission of Tender : 14.30 hrs. (IST) on 04.08.2026
Opening of PQ and Technical Bid : 15.00 hrs. (IST) on 04.08.2026

RFP Submitted By :
Name of Bidder : _____
Address of Bidder : _____
_____
GSTN No. of Bidder : _____
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.**	**Architect and Project Management Consultant:** **M/S Architects Approach,** 20, Shridhar Building, Hanuman Road, Vile Parle (East), Mumbai 400057. Email: architectsapproach@gmail.com Tel. No. 022 35113986, 02235113988 Mobile No. 9820158656

Sign & Stamp of Authorized Signatory

2. Index

Sr. No.	*Description*	*Page No.*
1	COVER PAGE	1
2	INDEX	2-3
2.1	NOTICE INVITING TENDER	4-8
2.2	PRE – REQUISITE FOR E – TENDERING	9
3	BRIEF PARTICULARS OF THE WORK	10
4	INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-BIDDING	11-23
5	SAMPLE BUSINESS RULE DOCUMENT	24-26
6	PROCESS COMPLIANCE STATEMENT	27-28
7	LETTER OF TRANSMITTAL	29-30
8	GENERAL CONDITIONS OF CONTRACT (GCC)	30-59
9	ARTICLES OF AGREEMENT	60-63
10	SPECIAL CONDITIONS OF CONTRACT (SCC)	64-81
11	SAFETY CODE	82-84
12	TECHNICAL SPECIFICATIONS	85-98
12.1	TECHNICAL SPECIFICATIONS FOR CIVIL & INTERIOR WORKS	
12.1.1	CIVIL WORKS	88 - 126
12.1.2	INTERIOR WORKS	127 - 140
12.1.3	MODE OF MEASUREMENT	141 - 145
12.1.4	LIS OF MATERIAL MANUFACTURERS	146 - 149
12.2	TECHNICAL SPECIFICATION FOR ELECTRICAL WORKS	150 - 169
12.3	TECHNICAL SPECIFICATION & SCOPE OF HVAC WORKS	170 - 175
12.4	SCOPE OF WORK OF FIRE FIGHTING & PA SYSTEM WORKS	176 - 184

Sign & Stamp of Authorized Signatory

12.5	SCOPE OF WORK OF DATA CABLING	185
12.6	SCOPE OF SECURITY SYSTEM WORK & ACCESS CONTROL WORKS	186 - 192
13.0	PROFORMAS/TABLES OF VARIOUS TESTS	193 - 215
14.0	DECLARATION	216

Sign & Stamp of Authorized Signatory

2.1) NOTICE INVITING TENDER

Percentage Base Item Rate e- Tender comprising of *PQ document*, Technical Bid & Price Bid are invited by M/S Architects Approach for and on behalf of SBI for the Composite interior renovation works for the Proposed Composite Interior Works comprising of Civil, Interior, HVAC, Electrical, Networking, Security & Fire Fighting Works at 5th Floor A & B-Wing SBI GITC CBD Belapur.

(One sets of hard copies uploaded PQ Bid & its application form, Technical Bid along with all relevant documents are to be submitted (Except Price Bid /Offer), duly spirally bounded, with all pages signed & stamped, in addition to documents to be submitted.

The details of Tender are as under:

(Price Bid shall be opened of only those Contractors who are eligible and approved in Pre-Qualification Bid & Technical Bid.)

Sr. No.	Particulars	Description
1	Name of the work	Proposed Composite Interior Works comprising of Civil, Interior, HVAC, Electrical, Networking, Security & Fire Fighting Works at 5th Floor A & B-Wing SBI GITC CBD Belapur.
2	Time allowed for Completion of Work	4 Months Including Monsoon from the 15th day of the date of award of work. Refer Brief Particulars of the Work.
3	Earnest Money Deposit (EMD)	**₹. 4,40,000.00 (Rupees Four Lakh Forty 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, Part-II (TB) or EMD to be deposited on or before the time and last date of submission of the technical bid.
4	Security Deposit (SD)	As per Clause No 6 Information and Instruction to Bidders Part- B
5	Date of availability of pre-qualification document on Service Provider's website	From 13.07.2026 to 04.08.2026 up to 14.30 Hrs. Available at https://sbi.co.in/ web/sbi-in-the-news /procurement-news, or http://www.tenderwizard.com/SBIETENDER.
6	Pre – Bid Meeting (Date, time & Place of Meeting)	On 23.07.2026 at 1500 Hrs. at the following address: 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.
6.1	Last date and time for receipt of Pre-bid queries from the perspective bidders (Only through Email to dgmit.fnoa@sbi.co.in)	**Up to 1600 Hrs on** 22.07.2026. Note: 1. All queries must be sent in the prescribed format as an attachment in the Excel format as per Table XVIII (Technical Bid). 2. Only queries received through email by the

Sign & Stamp of Authorized Signatory

		stipulated date and time will be considered for discussions/clarifications in the Pre-bid Meeting. No other point shall be considered.
6.2	Prior Intimation for participation in Pre-Bid Meeting	Applicant has to share name & contact no. of their representatives on email 24 hours prior to date & time of Pre-Bid meeting. dgmit.fnoa@sbi.co.in/dgmcivil.gitc@sbi.co.in The OTP shall be sent on their mobile no. for the meeting & no other persons shall be permitted to attend it. Maximum two persons per bidder allowed for meeting.
7	Last date & time for submission of EMD of tender document	Up to 1430 Hrs. on 04.08.2026 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://sbi.co.in/ web/sbi-in-the-news /procurement-news, or http://www.tenderwizard.com/SBIETENDER. Mentioning UTR no. / transaction ID.
8	Place, Time & Address for submission of hard copy of documents as per clause 3.2 of section- II of pre-qualification bid,	up to 1400 Hrs on 04.08.2026 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. Tel. No. 022 27577386, 7725/7412/7428
9	Last date & time for submission of Online PQ Bid.	Up to 1430 Hrs on 22.07.2026 at https :// sbi.co.in/ web/sbi-in-the-news /procurement-news, or http://www.tenderwizard.com/SBIETENDER
10	Date and Time of opening of Online PQ	1500 Hrs on 04.08.2026.
11	Date and Time of opening of Online Price Bid	Approx. within 30 Days of opening of PQ and TB. Will be communicated through email to the qualified bidders, separately.
12	Defects Liability period	As per Clause No. 1.1.11 (a) of GCC of Technical Bid
13	Liquidated Damages	As per Clause No 8 of GCC of Technical Bid
14	Validity of Bids	As per Clause No. 5 of Information and Instruction to Bidders Part-A of Technical Bid.
15	Value of Interim Certificate	Minimum Rs. 1 Crore (Excluding GST). No advance on plant/ Material / machinery or mobilization advance shall be paid under any circumstances.

Sign & Stamp of Authorized Signatory

16	**Eligible Taxes**	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 for Maharashtra State – 27AAACS8577K2ZO.
17	**Electronic Payment**	Electronic payment shall be preferred. All the contractor must furnish details such as 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.
18	**Submission of PQ Bid**	1) Contractors shall download the entire PQ & technical Bid to get acquainted with the terms and conditions and shall upload them along with the Mandatory bid Documents 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.) 2) Failing to upload as stated above, the tender will be rejected. 3) Bidder shall submit the **original copy to be sealed in an envelope and mark the envelope as "PQ & 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.
19	**Additional Security Deposit**	As per Clause 1.2 (d) of GCC of Technical

Sign & Stamp of Authorized Signatory

	(ASD)	Bid
20	**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. Antares Systems Limited Registered
	Address	'Honganasu', #137/3, Bangalore Mysore Road, Opp. To Metro Pillar #P-696, Kengeri, Bengaluru – 560 060, India
	Bidder Support	For e-Tender Support for Bidders: Kushal Bose – 9674758719 kushal.b@antaressystems.com Helpdesk Numbers: 9073677150 / 9073677151 / 9073677152 / 9674758723 / 9674758726 / 9674758506
	Email Address	kushal.b@antaressystems.com
	Website Address	http://www.tenderwizard.com/SBIETENDER

21. The contractor must 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. The SBI reserves the right to cancel or postpone or modify the E-Tender at any stage without assigning any reason.

22. Tender can be downloaded from the bank's website at https://sbi.co.in/ web/sbi-in-the-news /procurement-news, or http://www.tenderwizard.com/SBIETENDER. It shall be responsibility of the contractor to arrange and ensure that all pages of Tender Documents are properly arranged and in order. Submission of bids in improper manner may lead to disqualification.

23. The contractor shall sign and stamp each page of the Tender document thereby ensuring the number and sequence of all pages.

24. No conditions other than mentioned in the Tender will be considered, and if given they will have to be withdrawn.

24.1 Any letter, document and /or terms & Condition attached with Tender Submission other than mentioned in Tender and /or Corrigendum, shall not be entertained and such letter, document and /or terms and conditions shall be treated null and void.

25. The SBI reserve their rights to accept or reject any or all the e- Tender Applications, either in whole or in part without assigning any reason for doing so and any claim / correspondence shall be entertained in this regard.

26. In case the date of opening of e-tenders is declared as a holiday, the Bids will be opened on the next working day at the same time.

27. SBI has the right to accept / reject any / all e-tenders without assigning any reasons and no correspondence shall be entertained in this regard.

28. 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.

29.. For any clarifications regarding E-Tendering procedure, System requirements etc. please contact M/s. Antares Systems Limited Registered, Bengaluru, whose address is mentioned in the NIT.

30. Any letter, conditions attached with the tender submission, other than as requested in the RFP/tender (and as per Corrigendum, if any), shall not be entertained, nor considered and shall be treated as null & void.

Yours Faithfully,

.....

Sign & Stamp of Authorized Signatory

2.2) Pre – Requisite for e – Tendering

All documents related to the E-Tender are available on the e-tendering portal at https://sbi.co.inweb/sbi-in-the-news/procurement-news, or http://www.tenderwizard.com/SBIETENDER . Bidders must note that this, being E-tender, Bids received online, on E-tendering portal shall be considered. In addition to it, two sets of hard copies of application form along with all relevant documents are to be submitted (Except Price Bid /Offer), duly spirally bound securely and in serial order containing all pages duly signed by authorized signatory with company seal and date to this Office on or before due date & time. To participate, Bidder(s) is/are advised to register with following steps:

Step 1: Bidder's Registration

•	Go to website: at https://sbi.co.in/ web/sbi-in-the-news /procurement-news, or http://www.tenderwizard.com/SBIETENDER
•	Click on "Register for e-Tender" button.
•	Create your desired User ID and fill in Company Details.
•	Vendor in possession of DSC Class III may insert Digital Signature Certificate token in computer's USB drive, and click on "Update Digital Signing Certificate Serial No. From USB token". A new PKI based "Signer Certificate" window will open. Browse your Signer Certificate, enter token password and click on Register.
•	For those without DSC, it is advised to apply for the DSC.
•	Do not enter special character(s) in any field except "Email Address", "Website (URL)" and "Alternative Email Address".
•	Then click on "Create profile".
•	You will be forwarded to "Document Upload" screen. Upload documents as specified in previous page. After uploading is completed, click on "Finish Upload".
•	The User ID and system generated password with payment confirmation
•	will appear on the next screen which can be printed for future reference.
•	Check registered email ID. Click in the link "Click to verify" to validate the email ID.
•	To enable the User ID, forward the registration acknowledgement copy to helpdesk from registered email ID.

Step 2: Digital signature (known as "Digital Signature Certificate")

•	Applying Class III Digital Signature Certificate: (token issued upon registration)
•	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).
•	Bidder's manual & system requirement is available on website http://www.tenderwizard.com/SBIETENDER
	Bidders may contact e-tendering representative at (7666563870 / Landline- 080-4598 2100) for any assistance.

E-Tender for the "Composite works of Interior, Civil, Electrical, AC, Telecom, Networking, Fire Fighting, Security and Structural Repair Work at 5th Floor A & B-Wing SBI GITC CBD Belapur and Allied Services"

3. BRIEF PARTICULARS OF THE WORK

a. SBI proposes for composite interior work of 5th Floor A & B-Wing SBI GITC CBD Belapur.

b. **Brief Scope of Work**: The scope of work comprises of Composite Interior Renovation Works which should include Interior, Civil, Furnishing, HVAC, Electrical, Networking, CCTV, Access control, Fire Fighting & Detection System, Sprinkler System Work at 5th Floor A & B - Wing SBI GITC CBD Belapur. (All the components executed under single contract) executed for Commercial premises, IT/ITES offices, Institutional premises & offices.

c. The proposed work must be completed in all respects w. r. t. to all drawings, RFP, specifications, obtaining statutory approvals if required. The **time allowed** for completion of the project is **90 days for fit-out works + 30 additional days for structural repair works** if any including monsoon period as per Work Order (WO) & RFP.

d. SBI intends to pre-qualify the competent Contractors having requisite qualifying experience and infrastructure and financial capability to undertake the work as specified in the pre-qualification documents for completion of the project in the prescribed scheduled time.

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

PART-A

1. DISCLAIMER:

i. 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.

ii. This RFP is not an offer by State Bank of India, but an invitation to receive responses from the eligible Bidders.

iii. 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.

iv. 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.

v. 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.

vi. 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.

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

i. Bidder requiring any clarification on RFP may notify the Bank in writing strictly as per the format given in Table-XVIII at the address/by e-mail within the date/time mentioned in the Notice Inviting Tender (NIT).

ii. 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.

iii. 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.

iv. 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.

4.0 MODIFICATION AND WITHDRAWAL OF BIDS:

i. 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 eProcurement portal, prior to the deadline prescribed for submission of Bids.

ii. No modification in the Bid shall be allowed, after the deadline for submission of Bids.

iii. 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.

5.0 PERIOD OF BID VALIDITY AND VALIDITY OF PRICE QUOTED BY BIDDER:

1. Technical Bid shall remain valid for duration of 180 days from the date of submission of Bid.

2. Price quoted by the Bidder shall remain valid for duration of 180 days from the date of submission of Bid
3. In exceptional circumstances, the Bank may solicit the Bidders' consent to a 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.

6.0 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.

7.0 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.

8.0 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.

9.0 CODE OF INTEGRITY AND DEBARMENT/BANNING:

i. 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.

ii. 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.

iii. 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.

iv. 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 anticompetitive 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.

v. 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 empaneled 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 9 (iv) 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.

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

PART -B

1.0 Scope of work

As per Clause No. 1 of NIT.

1.1 Site and its location

"5th Floor, A & B Wing at State Bank Global IT Centre, C.B.D. Belapur, 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, labor, 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 labor 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 Bank/ 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 Bank/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 GITC, SBI, CBD Belapur 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. EMD to be deposited before the last date of submission of the technical bid.

4.2 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.

4.3 No interest will be paid on the EMD.

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

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

4.6 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 / 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 SBI 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 amount of ISD shall be 2% of accepted value of tender including the EMD. Balance of ISD (i.e., excluding EMD) is to be submitted in the form of D/D drawn on any scheduled Bank and shall be deposited within 15 days from the date of letter of acceptance of tender.

5.1 **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 fulfilment 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

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

6.0 Security Deposit / Retention amount:

6.1 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.

6.2 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 Validity of Tender

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

10.0 Liquidated Damages

Please refer Clause No 8 of GCC.

11.0 Rate and prices: In case of Percentage Rate Tender

11.1 The tenderer shall quote a single percentage (%) Above (+), Below (-), or At Par (0%) on the total estimated cost of the work, both in figures and words. The quoted percentage shall be uniformly applicable to all items of the Bill of Quantities (BOQ), unless otherwise specified in the tender document.

The rates payable for individual BOQ items shall be derived by applying the accepted percentage uniformly to the estimated rates of the respective items.

Conditional tenders or item-wise percentage variations shall not be accepted and are liable for rejection.

11.2 The tenderer shall not change, modify or delete the description of any BOQ item. If any ambiguity, discrepancy or omission is noticed in the tender documents, the same shall immediately be brought to the notice of SBI before submission of the bid. No claim arising out of failure to do so shall be entertained later.

11.3 Each page of the BOQ/Price Bid shall be signed by the authorized signatory of the tenderer. Any cutting, overwriting or correction shall be duly authenticated with the signature of the authorized person.

11.4 The tenderer shall quote only the percentage above, below or at par on the estimated cost. The tender amount shall be calculated accordingly. In case of any

arithmetic error, the quoted percentage shall prevail.

11.5 The quoted percentage shall be deemed to include the cost of all materials, labour, plant & machinery, tools & tackles, transportation, loading, unloading, scaffolding, temporary works, wastage, testing, quality control, watch & ward, insurance, royalties, cess, duties, levies, local taxes (excluding GST), contractor's overheads, profit, statutory obligations and all incidental expenses necessary for complete execution of the work during the contract period, including any approved extension of time. GST shall be paid separately as applicable against valid tax invoices.

11.6 SBI reserves the right to accept or reject any tender, wholly or partly, without assigning any reason. SBI also reserves the right to split the work, reduce or increase the scope of work, execute the work in phases or omit any portion of the work without any liability for compensation. No claim or correspondence in this regard shall be entertained.

11.7 If SBI decides to delete, reduce or defer any item(s) or part of the scope of work during execution, the Contractor shall not be entitled to any compensation, loss of profit or damages on that account. SBI may also issue separate work orders for different locations or phases of work, and the Contractor shall execute the same at the accepted percentage rates without any claim for escalation, provided such work is within the scope of the tender.

11.8 The accepted percentage quoted by the Contractor shall remain firm and fixed throughout the contract period, including any approved extension of time, unless otherwise specifically provided in the tender conditions.

11.9 Payment shall be made based on the actual measurements of work executed at site and the rates derived after applying the accepted percentage to the estimated rates of the BOQ items. No payment shall be made for any work executed without the written approval of SBI.

12.0 Nil

13.0 Pre-bid conference: As per clause no 3 Part-A of Information and Instruction to Bidders for e-Bidding. (IIBeB)

14.0 The bid submitted shall become invalid if:

1. The bidder does not deposit EMD as per given mode.

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

15.0 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's 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 of NIT.	Technical Bid as per Clause No. 18 of NIT.
2	Corrigendum, if any	Corrigendum, if any
3	Scan copy of duly executed original Declaration form (on the Last page of TB)	Copy of duly executed original Declaration form (on the Last page of TB)
4	Scan copy of Proof of remittance of EMD	Copy of Proof of remittance of EMD
5	Scan copy of Duly executed original LETTER OF TRANSMITTAL	Copy of Duly executed original LETTER OF TRANSMITTAL

15.1 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 in formation. 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) 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.

(f) The Bidder may also be asked to give presentation at no extra cost to the Bank for the purpose of clarification of the Bid.

(g) The Bidder must provide specific and factual replies to the points raised in the RFP.

(h) 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.

(i) All the enclosures (Bid submission) shall be serially numbered.

(j) 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.

(k) 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.

(l) The Bank reserves the right to reject Bids not conforming to above.

15.2 Evaluation of Technical Bids:

I) The bidders who submit above documents without any conditions shall be

treated as technically qualified bidders if fulfilling the criteria.

II) Price Bid shall be opened of only of those bidders who qualify as per clause no. 16 below.

16.0 Award criteria and Award of contract:

The price bids of technically qualified vendors will be opened. The contract will be awarded to contractor on L-1 Basis

5. 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 empaneled contractors with SBI under appropriate category who are invited by the Bank/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 mentioned in para / clause 4.6 of INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-BIDDING (IIBeB) Part B For 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. Antares Systems Limited Registered 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. Antares Systems Limited Registered, 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 Banks.

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 empaneled bidders who receive NIT from the Bank 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. Antares Systems Limited Registered. The Bidders are requested to change the Password after the receipt of initial

Password from M/s. Antares Systems Limited Registered 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-paneling 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. Antares Systems Limited Registered

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

6. PROCESS COMPLIANCE STATEMENT

To,
M/s. Antares Systems Limited Registered
'Honganasu', #137/3, Bangalore Mysore Road,
Opp. To Metro Pillar #P-696, Kengeri,
Bengaluru – 560 060, India

AGREEMENT TO THE PROCESS RELATED TERMS AND CONDITIONS FOR THE ONLINE E-TENDERING FOR "PROPOSED COMPOSITE INTERIOR WORKS COMPRISING OF INTERIOR CIVIL, INTERIOR, HVAC, ELECTRICAL, NETWORKING, SECURITY & FIRE FIGHTING WORK AT 5TH FLOOR A & B-WING SBI GITC CBD BELAPUR"

Dear Sir,

This has reference to the Terms & Conditions for the E-tendering mentioned in the Tender document

This letter is to confirm that:

i. The undersigned is authorized representative of the company.

ii. 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.

iii. We also confirm that we have taken the training on the E-tendering tool and have understood the functionality of the same thoroughly.

iv. We confirm that SBI and E-Procurement 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.

v. We confirm that we have a valid digital signature certificate issued by a valid Certifying Authority.

vi. We, hereby confirm that we will honor 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

M/s. Antares Systems Limited Registered	State Bank of India
'Honganasu', #137/3, Bangalore Mysore Road, Opp. To Metro Pillar #P-696, Kengeri, Bengaluru – 560 060, India Helpdesk Numbers: 9073677150 / 9073677151 / 9073677152 / 9674758723 / 9674758726 / 9674758506 Name : Kushal Bose – 9674758719 E-mail : kushal.b@antaressystems.com Contact No : 9674758719	Civil related Works: The Dy. General Manager (Civil), Estate Department, State Bank Global IT Center, Navi Mumbai. Officer Name : Mr. Zakir Shah Department : Estate Contact No : 022 2757 - 7412 The Dy. Manager (Civil) State Bank of India, Navi Mumbai. Officer Name : Mr. Abhijeet Kumbhar Department :Estate Contact No 022 2757 - 7428 Electrical related Works: The Assistant General Manager (Electrical), State Bank of India, Navi Mumbai. Officer Name : Mr. Rajan P.V. Department : Estate Contact No : 022 2757 - 7421 Firefighting & Security related Works: The Chief Manager (Security)/AM (Fire) State Bank of India, Navi Mumbai. Officer Name :Mr. Venunath G. / Mr. Vipin Palliwal Department :Estate Contact No 022 2757 – 5901/5903 Networking related works: The Dy. Manager (Telecommunication) State Bank of India, Navi Mumbai. Officer Name : Mr. Shivanand Department :Estate Contact No 022 2757 - 7306

7. LETTER OF TRANSMITTAL

(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	Work As per Clause No. 1 of NIT.
(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 shall start from third 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.

1) 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.

2) 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.

3) 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)

8.GENERAL CONDITIONS OF CONTRACT (GCC)

1.0 Definitions: -

"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 Banks/ 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 '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.

1.1.3 'Drawings' shall mean the drawings prepared by the Banks 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.

1.1.4 'Specifications' shall mean the specifications referred to in the tender and modifications thereof as may time to time be furnished or approved by the Bank

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.

1.1.8 (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 Banks Site Engineer / BANK 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) SBI Engineer (Telecom, Fire Officer, Security Officer)

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

a) **Earnest Money Deposit -**

Refer Clause No. 4, of Information and Instruction to Bidders - Part B

b) **Initial Security Deposit (ISD)**

Refer Clause No.5, of Information and Instruction to Bidders - Part B. No interest shall be paid to the amount retained by the Bank as Security Deposit.

c) **Additional security Deposit (ASD)**

Refer Clause No. 5.1, of Information and Instruction to Bidders - Part B

d) **Retention Money/ security Deposit: -**

As per Part B - Point 6 of Information and Instruction to Bidders - Part B.

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:

a) In case of difference between rates written in figures and words, the rate in words shall prevail.

b) Between the duplicate / subsequent copies of the tender, the original tender shall be taken as correct.

4.0 **Scope of Work:**

1. The work comprises comprehensive interior fit-out of a bare shell premises, including Structural repair, civil and masonry works, flooring, false ceiling, partitioning, doors, painting and polishing, Modular Furniture, electrical installations, lighting, LAN and data cabling, HVAC, fire detection and firefighting modifications, signage, window treatments, testing, commissioning, cleaning, and handing over the premises in complete operational condition, including defects liability during the warranty period.
2. The contractor shall carryout complete and maintain the said work in every respect strictly accordance with this contract and with the directions of and to the satisfaction to be communicated. The Bank's Engineer in charge at the directions of the SBI from time-to-time issue further drawings and / or write instructions, details directions and explanations which are here after collectively references to as Bank's instructions in regard to the variation or modification of the design, quality or quantity of any work or the addition or

omission or substitution work. Any discrepancy in the drawings or between BOQ and / or drawings and / or specifications. The removal from the site of any material brought thereon by the Contractor and any substitution of any other materials therefore the removal and / or re-executed of any work executed by him. The dismissal from the work of any person engaged thereupon.

5.0 i) **Letter of Acceptance:**

Within the validity period of the tender the SBI shall issue a letter of acceptance directly or through the Bank 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/ Bank, 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.

6.0 **Ownership of drawings**:

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

7.0 **Detailed drawings and instructions:**

The work shall be executed in conformity therewith and the contractor prepare a detailed programme 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

7.1 **Copies of agreement**

Two copies of agreement duly signed by both the parties with the drawings shall be prepared by the contractors.

8.0 **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.

9.0 **Materials, Appliances and Employees**

Unless or otherwise specified the contractor shall provide and pay for all materials, labor, 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 he shall be removed from the site immediately.

10.0 **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 BANK. 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.

11.0 **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 BANK 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 BANK the contractor shall be responsible for the same ad shall his own expenses rectify such error, if so, required to satisfaction of the SBI

12.0 **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 25.0 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

13.0 **Inspection of work:**

The SBI 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/BANK and their representatives necessary for inspection and examination and test of the materials and workmanship. No person unless authorized by the SBI 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.

14.0 **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 Bank and no undertaking shall relieve the contractor from the responsibility of the contractor from active & superintendence of the work during its progress.

15.0 **Quality of materials, workmanship & Test**

i) All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Bank's instructions and shall be subject from time to time to such tests as Bank 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 Bank.

ii) **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 Bank/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 BANK the contractor shall proceed with the procurement and installation of the material / equipment. The approved samples shall be the signed by the BANK for identification and shall be kept on record at site office until the completion of the work for inspection / comparison at any time. The Bank/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.

iii) **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.

iv) **Costs of tests not provided for**

The Contractor shall arrange to carry out the tests in accordance with the relevant Indian Standards Specifications in an approved laboratory and the test reports in original be submitted to Bank. The entire cost of testing shall be borne by the

Contractor.

16.0 **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.

17.0 **Contractor's Superintendence**

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

18.0 **Quantities**

i) 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.

19.0 **Works to be measured**

The Bank/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 Bank 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 BANK 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 BANK 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.

20.0 **Variations**

No alteration, omission or variation ordered in writing by the BANK vitiates the contract. In case the BANK 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 BANK 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 BANK and the value of such extras, alterations, additions or omissions shall in all cases be determined by the BANK and the same shall be added to or deducted from the contract value, as the case may be.

21.0 **Valuation of Variations**

No claim for an extra shall be allowed unless it shall have been executed under the authority of the BANK 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 BANK 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 BANK 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 Bank/Consultant) the workman’s name and materials employed be delivered for verification to the Bank /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, labor 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.

22.0 Final measurement

The measurement and valuation in respect of the contract shall be completed within three 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.

23.0 Virtual Completion Certificate (VCC)

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

a) Clear the site of all scaffolding, wiring, pipes, surplus materials, contractor's labor equipment and machinery.

b) Demolish, dismantle and remove the contractor's site office, temporary works, structure including labor 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 Bank and shall clear, level and dress, compact the site as required by the 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 SBI

f) All defects / imperfections have been attended and rectified as pointed out by the Banks to the full satisfaction of SBI

Upon the satisfactory fulfillment by the contractor as stated above, the contractor is entitled to apply to the BANK is satisfied of the completion of work. Relative to which the completion certificate has been sought, the BANK shall within fourteen (14) days of the receipt of the application for completion certificate, issue a VCC in respect of the work for which the VCC has applied.

This issuance of a VCC shall not be without prejudice to the SBI's rights and contractor liabilities under the contract including the contractor's liability for defects liability nor shall the issuance of VCC in respect of the works or work at any site be construction as a waiver of any right or claim of the SBI against the contractor in respect of or work at the site and in respect of which the VCC has been issued.

24.0 Work by other agencies

The BANK 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.

25.0 Insurance of works

25.1 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 affected 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 Bank the policy if insurance and the receipts for payment of the current premiums.

25.2 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 claims 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.

25.3 **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.

25.4 **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 BANK in this behalf.

25.5 **Third Party Insurance**

25.5.1 Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under clause 25.0 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 25.0 thereof.

25.5.2 **Minimum amount of Third-Party Insurance**

Such insurance shall be affected 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 Bank the policy or policies of insurance cover and receipts for payment of the current premiums.

25.6 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.

25.7 **Accident or Injury to workman:**

25.7.1 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.

25.7.2 **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 Bank 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 Bank /consultant when such policy of insurance and the receipt for the payment of the current premium.

25.7.3 **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.

25.7.4 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 damages 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.

25.8 **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 BANK proper **Contractor All Risk Insurance Policy** for an amount 1.25 times the contract amount for this work, with BANK as the first beneficiary. The insurance shall be obtained in joint names of BANK and the Contractor (who shall be second beneficiary). Also, he shall indemnify the BANK from any liability during the execution of the work. Further, he shall obtain and submit to the SBI/, a **third-party insurance policy** for maximum Rs. 10 lakhs for each accident, with the BANK as the first beneficiary. The insurance shall be obtained in joint names of BANK 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 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. (Table-XIX).

26.0 **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/Banks.

27.0 **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 **120 Days 90 days for fit-out works + 30 additional days for structural repair works including Monsoon,** as per work order. If required in the contract or as directed by the Bank / 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.

28.0 **Extension of time**

If, in the opinion of the Bank/consultant, the work be delayed for reasons beyond the control of the contractor, the Bank/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 Bank' 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 Bank/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.

29.0 **Rate of progress**

Whole of the materials, plant and labor 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 BANK should the rate of progress of the work or any part thereof be at any time be in the opinion the. BANK too Slow to ensure the completion of the whole of the work the prescribed time or extended time for completion the BANK shall thereupon take such steps as considered necessary by the BANK to expedite progress so as to complete the works by the prescribed time or extended time. Such communications from the BANK 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.

30.0 **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 Bank / 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 Bank / 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 BANK 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.

31.0 **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 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 BANK 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 BANK shall be final.

32.0 **Suspension of work**

i) The contractor shall, on receipt of the order in writing of the 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 Bank /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 Bank / 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.

33.0 **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 BANK 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 – BANK 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 labor 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 labor and materials cost of such labor and materials as worked out by the Bank/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 Bank /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 Banks / 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 BANK 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.

34.0 **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 BANK that he is able to carry out and fulfill the contract, and to dye security therefore if so required by the BANK 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 Bank/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 BANK 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 BANK that the said materials were condemned and rejected by the Bank/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 Bank'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 Bank / 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 BANK 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 BANK 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 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.

35.0 **Certificate of payment**

The contractor shall be entitled for the certificates to be issued by the BANK within 15 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 BANK during progress of works or completion shall not have effect as certificate of satisfaction relieve the contractor from his liability under clause.

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

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

The SBI shall modify the certificate of payment as issued by the BANK 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 Contractor shall get the various trades of work in his Bill certified by respective trade/ specialized Engineer/Officer. He shall then consolidate the whole Bill and submit it for payment with Tax Invoice.

The final bill may be submitted by contractor within a period of one month from the date of virtual completion and BANK 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.

36.0 **A. 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 Bank 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 Bank, 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.

37.0 **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 Bank / consultants.

ii) The contractor shall make alternative arrangements for the supply of water if the arrangement made by the contractor for procurement of water in the opinion of the Bank is unsatisfactory.

iii) In case contractor is permitted to use SBI's source of water i.e. Municipal connection, Borewell (existing or new) etc., the SBI may consider recovering @0.5%

of Bill amount from the final bill of contractor.

38.0 **Power Supply**

The contractor shall make his own arrangements for power and supply / distribution system for driving plant or machinery for the work and for lighting purpose at his own cost, The cost of running and maintenance of the plants are to be included in his tender prices, He shall pay all fees and charges required, by the power supply and include the same in his tendered rates and hold the owner free from all such costs. He has to obtain necessary approval from the appropriate authorities, if required. Bank will charge 0.5 % of Bill amount from the final bill of contractor for electrical power consumed by contractor.

39.0 **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.

40.0 **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 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 specification, Chapter 12 – Technical Specification; clause 12.1.3 of this document

41.0 **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 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 labor

42.0 **Force Majeure**

42.1 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.

42.2 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.

42.3 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.

42.4 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 wore the two parties, shall each other to decide regarding the future execution of this agreement.

43.0 Local laws, Acts Regulations:

The contractor shall strictly adhere to all prevailing labor laws inclusive at contract labor (regulation and abolition act of 1970) and other safety regulations. The contractors should comply with the provision of all labor 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 labor 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
ix) Shop and establishment act
x) Any other act or enactment relating thereto and rules framed there under from time to time.
xi) Prevailing Indian Electricity rules & act.

44.0 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 Bank / 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.

45.0 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.

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

7. 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.

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

46.0 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 Table XVIII to the Bank within 30 days of the hindrance on account of which he desires such extension.

ii) The Site Engineer 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 Table- XII). They shall thereafter forward their comments/recommendations to the Banks. The Banks 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/BANK and Banks 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 Banks 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.

47.0 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 Banks 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.

48.0 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, labor 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 labor
- Bad treatment of sub-contractors (piece workers) and unbusiness 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.

- a) Placing embargo on issue of tenders or temporary suspension from the Bank's approved list.
- b) 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 prequalification.

- Record of disqualification action taken against contractors shall be maintained in a separate file as also in the concerned contractor's dossier.

49.0 SAFETY CODE:

Safety code to be followed as per mentioned in individual technical specifications

50.0 Observance of Contract Labor Act 1970

Various provisions of the Contract labor 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 labor. A workman shall be deemed to be employed as contract labor 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- (I) 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 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 labor in his establishment unless he registers under Section 7 of the Act.

(ii) 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 Labor (Regulation & Abolition) Control Rules 1971.

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.

d) The annual return in duplicate in Form No. XXV 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.

(iii)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 labor employed by the contractor and recover the amount so paid from amounts payable to the contractors.

(iv)Welfare measures (Sections 16 to 19)

The welfare measures like canteen, rest rooms and other facilities to the contract labor 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 labor. 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.

(v) 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.

The Site Engineer/BANK 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 labor. Note : The contractor has to meticulously comply with para 50 about the Observance of Contract Labor Act 1970 and its updated version/ amendments time to time.

51.0 Programme 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 Bank or Site Engineer.

ii) The monthly progress chart as given in Table-V 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/BANK to concerned Department of the Bank before 10th of the following month.

52.0 Co-ordination and Monitoring:

i) It is the prime responsibility of the Banks to ensure that execution of the work progresses smoothly in accordance with the programme and in proper co-ordination among different agencies.

ii) The Banks 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 Bank/BANK /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 Banks 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.

53.0 Nil

54.0 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/BANK in a prescribed form. Instructions should be prepared in triplicate and serially numbered. A copy of these instructions can be given to the contractor and Bank 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/BANK. 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/BANK as well as Bank and Bank's officials visiting the site.
iv) The site order book shall be kept in the custody of the Site Engineer/BANK 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 upto 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.

55.0 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 / BANK therein when these occur and all recordings shall be signed jointly by the Site Engineer/BANK 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.

56.0 Site Register:

The following registers are to be maintained at site office (if required by the Bank):

i) Daily Progress record
ii) Site order book
iii) Hindrance register

These registers and a set of latest drawings shall be kept in the safe custody of the Site Engineer/BANK
Other than above registers, more may be required to be maintained at site as per project

requirements.

9. ARTICLES OF AGREEMENT

Agreement for _____
Between

State Bank of India

And

_____

Date of Commencement: _____

THIS Agreement is made on ____day of ……2026 (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:

2.1 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.

3.1.1 _____[1]

3.1.2 _____

3.2 Payments

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

[1] Please provide the payment details.

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 of 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 **……**

By_____ By_____
Authorized Signature Authorized Signature

Name_____ Name_____

Designation_____ Designation_____

Date: _____ Date: _____

Witness: _____ Witness: _____

10. 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 28.02.2022 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 SBI

2) The work shall be carried out in accordance with the Architectural drawings, structural drawings & MEP drawings, relevant codes, specifications etc. before commencement of any item of work, the contractor shall correlate all the relevant Architectural 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 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 BANK, 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 BANK. 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 BANK, 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 BANK, 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 BANK. 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) Existing Storm water drains around periphery of site shall be maintained by the Contractor free of cost by regular cleaning, repairing, protecting, Debris removing, making smooth path for the flow of storm water.

8) The contractor shall be responsible for the watch and ward / guard ofthe 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.

9) The entire work up to the plinth level, as required for obtaining approval up to the plinth (Further commencement certificate after plinth level) from the local authority, shall be completed by the Contractor simultaneously. Work above plinth shall be allowed to be carried out only after obtaining approval from the local body. No delay shall be allowed on this ground and also no claim whatsoever on account of any delay in approval at plinth level by the local body shall be entertained from the Contractor.

10) 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.

11) For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required, the same shall be responsibility of contractor. Nothing extra shall be paid on this account.

12) 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

13) 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.

14) The cost of water for construction and labors (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.

15) The Contractor shall arrange to give all notices as required by any statutory / regulatory authority for labor licenses, registration with EPFO, ESIC and BOCW Welfare Board etc. and shall pay to such authority all the fees, cess, labor 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.

16) 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.

17) 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.

18) 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.

19) 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

20) 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.

21) 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 Residential Colony at Sector 13, Nerul & 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.

22) 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.

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

24) 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 BANK. 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 BANK,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 BANK. 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 firsthand information of site constraints. They should quote their rates accordingly.

25) The quoted rates shall also be inclusive of all ancillary/enabling and incidental works required for execution of work like labor camp, stores, fabrication yard, 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, watch and ward security, vehicles, labs, water storage tanks, arrangement for temporary connection for electricity, telephone, water etc. including their consumption charges, protection works, barricading, providing testing facilities / laboratory at site of work for various field and laboratory tests or any other activity which is necessary for execution of work and as directed by BANK. Before start of the work, the Contractor shall obtain approval of the BANK,before locating various temporary structures/ site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.

26) The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labor laws and other regulations applicable, at his site office.

27) 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 SBI and other Contractors to suit the overall completion schedule.

vi) Resolve the disputes with another Contractor amicably and the 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

28-29) NIl

30) 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.

31) 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 BANK. 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 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 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.

32) 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.

33) If at any time, it appears to the BANK, 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

34) The submission for approval by the BANK 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 BANK, to take action against the contractor as per terms and conditions of the agreement.

QUALITY ASSURANCE & TESTING OF MATERIALS

35) The contractor shall establish field laboratory at site including all necessary equipment for field tests as given in tender document. All the relevant and applicable standards and specifications shall be made available by the contractor at his cost in the field laboratory.

Quality Assurance Engineer of the contractor shall be responsible for carrying out all mandatory field/ laboratory tests. The contractor shall so provide adequate supporting staff as his cost for carrying out field tests, 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 register shall be issued to the contractor by the BANK. All the entries in the test register will be made by the designated engineer of the contractor and same shall be regularly reviewed by the BANK, or his authorized representatives at site.

36) 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 BANK. In exceptional cases, where such approval is required, the decision of BANK, 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 BANK.

37) All materials shall be got checked by the BANK, or his authorized supervisory staff on receipt of the same at site before use.

38) 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 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.

39) 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.

40) 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.

41) BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the BANK, 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 BANK, 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.

42) 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.

43) 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 SBI the charges for testing of materials shall be borne by the Contractor.

44) 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.

45) Contractor shall submit minimum "Quality Assurance" plan within 45 days after award of work which shall be consisting of:

46) Lot size, number of required tests and frequency of testing.

47) 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 BANK, from the prescribed limits.

48) 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.

49) The Contractor shall allow access to Third Party Quality Assurance (TPQA) Agency if any appointed by SBI or any other Committee related to 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 BANK, or his authorized representative. All arrangements for transporting and getting them tested shall be made by the Contractor.

50) 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.

51) 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 BANK, or his/her representative at any time. The daily report of receipt of material shall be sent to Project Manager / Project Bank of BANK or his/her representative.

52) 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.

53) 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 BANK, and should be used at site. This check list should be shown to the BANK, 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.

54) 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 BANK, along with every running account bill for record and reconciliation of material issued, consumed and balance.

55) These measurements shall then be 100% checked & verified by the authorized representatives of the BANK. Subsequently measurements shall be checked by SBI engineer as per SBI guidelines along with BANK. 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 BANK.

56) The Computerized Measurement Book shall be allotted a serial number as per the Register of Computerized Measurement Books and processed for payment.

57.0 WATERPROOFING WORKS

The Contractor has to submit 5 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 5 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.

58.0 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.

59.0 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 Labor, 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.

iii) 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 SBI

iv) Lighting: The contractor shall provide sufficient lighting at project site, during periods of insufficient natural light, if required.

60.0 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 Bank /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 topsoil from erosion by collection storage and reapplication of top soil, constructing sediment basin, contour trenching, mulching etc.

ii) No excavated earth shall be removed from the campus unless suggested otherwise by SBI. All subsoil shall be reused in backfilling/landscape, etc. as per the instructions of the SBI. The surplus excavated earth shall be disposed of by the contractor for reuse.

A certificate of reuse as required by the SBI shall be submitted by the contractor.

iii) The contractor shall not change the natural gradient of the ground unless specifically instructed by the 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 SBI.

iv) The contractor shall not carry out any work which results in the blockage of natural drainage.

v) 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 BANK.

vi) Contractor shall reduce pollution and land development impacts from automobiles used during construction.

Vii) 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.

Viii) Preserve and Protect Landscape during Construction

ix) 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.

x) The contractor shall take steps to protect trees or saplings identified for preservation within the construction.

xi) Contractor should limit all construction activity within the specified area as per the Construction Management Plan (CMP) approved by SBI.

Xii) 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.

Xiii) The contractor shall ensure that maintenance activities during construction period shall be performed as needed to ensure that the vegetation remains healthy.

Xiv) 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.

xv) 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.

xvi) The contractor shall provide potable water for all workers.

xvii) 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.

Xviii) 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:

xix) Clear vegetation only from areas where work will start right away.

xx) Vegetate / mulch areas where vehicles do not ply.

Xxi) Apply gravel / landscaping rock to the areas where mulching /paving is impractical.

Xxii) 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%

xxiii) 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.

Xxiv) Water spraying shall be done on:
Any dusty materials before transferring, loading and unloading

Area where demolition work is being carried out any un-paved main haul road

xxv) 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.

Xxvi) 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.

Xxvii) 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

xxviii) Provide hoardings of not less than 3m high along the site boundary, next to a road or other public area

xxix) Provide dust screens, sheeting or netting to scaffold along the perimeter of the building

xxx) Cover stockpiles of dusty material with impervious sheeting

xxxi) Cover dusty load on vehicles by impervious sheeting before they leave the site

xxxii) 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).

Xxxiii) 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 BANK, 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.

Xxxiv) The contractor shall ensure the following activities for construction workers safety, among other measures:

Guarding all parts of dangerous machinery.

Precautionary signs for working on machinery

Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.

Durable and reusable form work systems to replace timber form work and ensure that form work where used is properly maintained.

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.

Provide protective equipment; helmets etc. -

Provide measures to prevent fires. Fire extinguishers and buckets of sand to be provided in the fire-prone area and elsewhere. Provide sufficient and suitable light for working during night time

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.

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.

Contractor shall collect & submit the relevant material certificates
for materials with high recycled (both post-industrial and postconsumer) content, including materials like RMC mix with fly-ash, glass with recycled content, calcium silicate boards etc.

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.

The providing & fixing Safety nets at various levels of Buildings as per instruction from BANK. 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 fastner (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.

No extra payment shall be done against all such safety measures.

61.0) WATER USE DURING CONSTRUCTION

I) Contractor should spray curing water on concrete structure 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.

62.0) 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 BANK. 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, Banks, 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 BANK.

63.0) Make in India Policy

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

64.0) 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 into work premises	All Employees	Safety Helmet, Safety Shoes & Reflective Jacket
Signaling	Security/marshal	Reflective Jacket
Working at Height – Morethan1.8 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 Woodworkers	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

65.0 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 BANK, 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.

66.0 PRODUCT DELIVERY, STORAGE AND HANDLING OF CHEMICALS

I) The contractor shall construct storage space for Chemical's 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)

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 BANK,and not in bigger capacity containers, say 200 liter (kg) drums unless otherwise specifically permitted by the BANK. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the BANK.

v) 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.

vi) 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 BANK.

Vii) 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 BANK,and a copy of the same shall be kept in record.

viii) The Name of manufacturer's, 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.

ix) 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.

x) All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.

xi) 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 BANK.

Xii) All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.

Xiii) 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.

Xiv) 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.

xv) The chemicals shall be tested in an independent laboratory as approved by the BANK, at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in- Charge of BANK. Nothing extra shall be payable on this account.

67.0 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.

68. Conditions specific to Project:

a) In response to the tenders invited by Bank, 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 labor 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 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 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.

11. SAFETY CODE

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 ¼ to 1 (¼ 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 up to 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's. 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 as 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.
14. Further refer trade wise safety measures if mentioned in the technical specification.

12. TECHNICAL SPECIFICATIONS

SECTION-1: Brief Scope of Work:

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 Repairing, Civil, Interior, Electrical, Telecommunication and Networking, Air-conditioning, Fire Alarm, CCTV, P.A. System, 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 Civil, Interior, Electrical, Data cabling, Security and Firefighting 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 structure shall be provided with dash fasteners.

d) On award of the work, Contractor shall submit a schedule of Work as Per clause of the agreement for approval of the BANK. 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.

e) Since the said Building is occupied hence the Contractor has to take utmost care for the safety of men, material, building, vehicles etc thereat and shall indemnify the Bank from any claims/penalty raised thereat.

v) Completion drawings

On completion of work, Contractor shall submit three complete set of “As built drawings” for Various Trades of Work to the SBI. These drawings shall have the following information.

1. Location of all mechanical equipment with layout and piping connections and mechanical equipment.

2. All shop drawings shall be updated from time to time for the purpose of making completion drawings.

3. No completion certificate shall be issued unless the above drawings are submitted. Piping and drainage works shall be tested as specified under the relevant clauses of specifications.

4. Contractor or his associate agency engaged to do this work must hold a valid required license by the municipal authority or other competent authority under whose jurisdiction the work falls.

vi) ALL NOC's/Permissions/Approvals required before/after completion of any/all specialized Works like, tree cutting permission/Garden NOC, Plumbing, Water Supply, Drainage, and 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 BANK /Bank in related documentation, if required, for getting the completion certificate, stability certificates as per the cases.

vii) Development works

The work is to be carried out complete in all respect including services.

viii) 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.

ix) 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.

X) 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.

Xi) 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 BANK, of that component, whose decision shall be final and binding.

Rate Analysis

The L1 contractor shall provide detailed Rate Analysis for all items of works within 3 days of opening of Price Bid Rate analysis shall include break up of materials, labor, 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: 1. 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).

2. 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 their form. 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 BANK. Nothing extra shall be payable on this account.

3. 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.

12.1 TECHNICAL SPECIFICATIONS FOR CIVIL & INTERIOR WORKS

12.1.1 CIVIL WORKS

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 Bank.

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 Banks for which neither extra will be paid nor shall any rebates be recovered.

4) 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.

5) It shall be obligatory for the Contractor to furnish certificate, if deemed by the Banks, from manufacturer or the material supplier that the work has been carried out by using their material and as per their recommendations.

6) 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.

7) 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.

8) 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 cu.m. (90 lbs.per c.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 c.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 Banks will be allowed on works and the source of supply will not be changed without approval of Bank in writing. Test certificates to show that cement is fully complying the specifications shall be submitted to the Banks and notwithstanding this, the Bank 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 Bank.

b) **Lime:** Lime shall comply in every respect with the requirements of IS: 712 and shall be made from approved line 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 confirm to IS: 383 and relevant portion of IS: 515. It shall pass through 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 confirm 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 Bank 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 confirming to I.S.: 432-1966 and any other I.S. applicable or deformed bar confirming to IS: 1786 and IS: 1139 or hard drawn Fe 415 (Tor Steel) steel wire fabric confirming to IS: 1566; 1967.

All finished bars shall be free from cracks, surface flaws, and 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 find 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) **Neeru:**

Shall be made of Class “C” Lime (i.e. pre-fat lime) as mentioned in IS: 712. It shall be slaked with fresh water then sifted and reduced to a thick paste by grinding in a mill. Neeru thus prepared shall be kept moist until used and no more than that can be consumed in 15 days shall be prepared at time.

h) **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 find 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.

i) **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 affluence or attack the steel in reinforced cement concrete. Water shall be obtained from sources approved by the Bank. 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.

j) **Timber :**

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

Timber shall be considered as well seasoned, if its moistures 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.

k) **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 knot 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.

l) **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 knot 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 tings per 2.5 cm. width.

m) **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.

n) **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.

o) **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.

p) **Floor Tiles :**

Designer pre-cast concrete tiles and interlocking paver block, plain cement tiles, chequred 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 Bank.

q) **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.

r) **Marbles :**

Marble slabs for flooring, dado veneering etc., shall be of kind specified in the item such as white or pink, Makrana, Chittor 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 Bank. The slabs shall be machine cut and machine polished.

s) **Kotah / Shahabad / Kadapa / 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 Bank. 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.

t) **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

u) **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.

v) **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.

w) **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 pains as received from the manufacturer without any admixture shall be used, except for addition of thinner, if recommended by the manufacturer.

x) **Mortar :**

1) Lime Surkhi Mortar: Lime and surkhi shall confirm 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, and 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.

y) AAC Blocks:

AAC (Autoclaved Areated Concrete Blocks All units shall be sound and free of cracks or other defects which interfere with the proper placing of unit or impair the strength or performance of the construction. Minor chipping resulting from the customary methods of handling during delivery, shall not be deemed grounds for rejection.

Where units are to be used in exposed wall construction, the face or faces that are to be expelled shall be free of chips, cracks, or other imperfections, except that if not more than 5 percent of a consignment contains slight cracks or small chippings not larger than 25 mm, this shall not be deemed grounds for rejection.

The maximum variation in the length of the units shall not be more than 5 mm and the maximum variation in the height and width of unit, not more than ±3 mm

The drying shrinkage shall be not more than 095 percent for Grade 1 blocks and @ 10 percent for Grade 2 blocks when tested as per table no 9.4 of IS 2185 -3(1984).

z) UPVC Windows

The cross section of the profile must confirm to the shape and dimensions of the manufacturer’s specification and drawing maximum tolerance on outer surface shall

not be more than ±0.5 mm and glazing and seal grooves shall not deviate more than ±0.3 mm.

The straightness of the profile as measured on the surface shall not deviate by more than 1.0 mm/meter.

The weight of the profile section per meter shall not be less than 3% of normal value.

WORKMANSHIP

Leveling Course:
It shall be either plain cement concrete of leaner mix or lime concrete which shall be proportioned as stipulated in the relevant item and mixed and placed in position confirming to line and level show on the drawing and compacted by approved means and cured adequately.

Lime concrete shall be prepared by mixing sand and slaked lime in proportion of three parts of sand and one part of lime and ground in a suitable mill and the mortar so prepared shall be added to six parts of the brick bat passing through 50 mm. mesh, mixed well and placed in position and compacted by approved means. The concrete shall be cured adequately.

PLAIN & REINFORCED CEMENT CONCRETE

A) VOLUMETRIC BASIS: -

General: Except where they are varied by the requirements of this specification due provision of Indian Standard Specification IS-456-1964 for plain and reinforced concrete and IS-432 part I and II for Mild and Medium Tensile steel Bars and hard drawn steel wire for concrete reinforcement and any other relevant ISS applicable together with the latest amendments shall be held to be incorporated this specifications. It shall be intent of these specifications to ensure that all concrete placed at various location of the job should be durable, strong enough to carry design, loads, it should wear well and practically be impervious to water. It should be free from such defects as shrinkage, cracking and honeycombing.

Proportioning the Mix:

In ordinary concrete, excluding controlled concrete, proportions of cement to fine and coarse aggregate shall be as specified in the respective items and shall be accurately measured as in table “A” below. These proportions are based on assumption that the aggregates are dry. If aggregates are moist allowance shall be made for bulking in accordance with IS: 2386/-. Allowance shall also be made for surface water present in aggregate when computing water contents. Surface water present shall be determined by one of the field methods described in IS: 2386/- (Part III). In the absence of exact data, the amount of surface water may estimate by the value given in table “B” below (Table “A” and “B”).

Mixing:

Concrete of 1:2:4 or richer mix shall be mixed in an approved mechanical mixer. The mixer and mixing platform shall be suitably protected from wind and rain. Aggregates shall be accurately measured out in boxes and mixed dry along with cement, water shall be then added in measured quantity and mixing shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and in consistency but in no case shall he mixing be done for less than 2 minutes.

When hand mixing is permitted with the approval of the Bank it shall be carried out on water-tight mixing platform and care shall be taken to ensure that mixing is continued until mass is uniform in colour and consistency.

Consistency:

Quantity of water for making reinforced concrete shall be sufficient so as to ensure that concrete shall surround and properly grip all the reinforcement. The best consistency shall be that, which will flow sluggishly without flattening out and without separation of coarse aggregates from the mortar. The degree of plasticity shall depend on the nature of work and atmospheric temperature and whether the concrete is vibrated or hand compacted. The slumps shown in table “C” obtained by standard slump test carried out in accordance with the procedure laid down in IS: 119-1959 shall be adopted for different types of work.

Admixtures:

The usage of admixtures is allowed only if approved by the structural consultant and his decision in this regard shall be final.

Placing and Compacting:

Concrete shall be placed in layers of suitable thickness or in strips and compacted before initial setting commences and should not be subsequently disturbed. Method of placing shall be such as to preclude segregation and as far as practicable the placing shall be continuous. Special care shall be taken in accordance with IS: 456 while laying concrete under extreme weather.

Concrete shall be thoroughly compacted during the operation of placing and thoroughly working around the reinforcement, embedded fixtures and spaded against corners of the form work and by punning, rodding, mechanically vibrating or by any other approved means. In addition, form work shall be tapped lightly by using wooden mallet at the pouring head. The number and type of vibrator to be used shall be subject to the approval of the Banks and in general immersion type vibrators shall be used. External vibrators shall also be used whenever directed.

The intensity and duration (of vibration shall be sufficient to cause complete settlement and compaction without any stratification of successive layers or separation of ingredients or formation of laitance. Vibrator shall be inserted vertically in the concrete at points not more than 45 cm. apart and withdrawn very slowly when air bubbles no longer come on the surface. Over vibration or vibration of very wet mixes is harmful and should be avoided. Care shall be taken to utilize the vibrator only to compact the concrete and not to spread it, sufficient number of reserve vibrator in good working condition shall be kept on hand at all times, so as to ensure that there is no slackening or interruption in compacting.

Construction Joints:

Concreting shall be carried out end to end continuously as far as possible and when construction joints are totally unavoidable, it shall be located in a predetermined position approved by the Bank. The joints shall be kept at places where the shear force is the minimum and these shall be straight and at right angles to the direction of main reinforcement. When the work has to be resumed, on a surface which has hardened, such surface shall be roughened. It shall be swept clean, thoroughly wetted and covered with a 13 mm. layer of mortar composed of cement and sand in the same ration as the cement concrete mix. This 13 mm. layer of mortar shall be freshly mixed and placed immediately before the placing of the concrete.

Where the concrete has not fully hardened, all laitance shall be removed by scrubbing the Wet surface with wire or bristle brushes, care being taken to avoid dislodgment of particles of aggregate. The surface shall then be coated with neat cement grout. In horizontal joints the first layer of concrete to be placed on this surface shall not exceed
15 cm. thickness and shall be well rammed against old work, particular
attention being paid to corners.

Expansion Joint:
Expansion joint shall be provided where required as shown on the drawings or as directed by the Bank / Consultant. The joints shall be filled by the approved quality filler.

Curing:
Concrete shall be carefully protected during first stage of hardening from harmful effects of
excessive heat, drying winds, rain or running water. It shall be covered with a layer of sacking, sand canvas, hessian, or similar absorbent materials and kept constantly, wet for ten days from the date of placing of concrete. Alternatively, the concrete being thoroughly wetted and covered by layer of approved water-proof material which should be kept in contact with it for seven days.

Form Work:
The form work shall conform to the shape, lines and dimensions as shown on the plans and be so constructed as to remain sufficiently rigid during the placing and compacting of the concrete and shall be sufficiently watertight to prevent loss of cement slurry from the concrete. Form work or centering shall be constructed of steel or timber and adequately designed to support the full weight of wet concrete without deflection and retain its form during laying, ramming and setting of concrete. Timber used shall be properly seasoned so as to prevent deformation when wetted.

All props shall be straight and of full height and no joints shall be allowed. Props shall be braced with thin bamboos or wooden battens and where additional staging is necessary, extra care shall be taken to use bigger diameters props with bracing at 4 or 5 levels. All props shall be supported on sole plates and double wedges. At the time of removing props these wedges shall be gently eased and not knocked out.

All rubbish, chippings, shavings and saw dust shall be removed from the interior of the forms before the concrete is placed and the form work in contact with the concrete shall be cleaned and thoroughly wetter or treated with non-staining mineral oil or any other approved materials is kept out of contact with the reinforcement.

All form work shall be removed without shock or vibration and shall be eased off carefully in order to allow the structure to take up its load gradually. Forms shall not be disturbed until concrete has adequately hardened to take up superimposed load coming on it and in no circumstances shall forms be struck until the concrete may be subjected at the time of striking.

In the normal circumstances (generally where temperatures are above 21 degrees centigrade) and where ordinary cement is used, forms may be struck after expiry of following periods:

a)	Walls, Columns and Vertical sides of beam}	48 hours
b)	Bottom of slab up to 4.5 m. span.	7 days.
c)	Bottom of slab up to 4.5 m. span.	14 days.
d)	Bottom of beams and archrib over 6 m. Span.	21 days.

However, this period may be increased or decreased at the discretion of Banks. Special care shall be taken while striking the centering of cantilevered slab canopies, portal frames, folded plate construction and period of striking centering shall be as determined by the Bank. If directed, form shall be given an upward camber to ensure that the beams do not have any sag. Surface that becomes exposed on removal of forms shall be carefully examined and any fins, burrs, projections etc., that are detected shall be removed. Any honeycombing of minor nature shall be finished neatly with cement mortar 1:2.

Any work showing signs of damage through premature or careless removal of centering or shuttering, shall be reconstructed by the contractor at his own cost.

Strength:

Concrete mixed in the proportion desired shall have compressive strength after placing, not less than the following:

Concrete mixed in the proportion desired shall have compressive strength after placing, not less than the following:

No	**Concrete Mix.**	**Minimum compressive strength @ 7 days**	**Minimum compressive strength @ 28 days**
1	1:1:2	160 Kg. / Sq.mtr. (2250 Lbs. / Sq. inch).	250 Kg. / Sq.mtr. (3500 Lbs. / Sq. inch).
2	1:1½:3	132 Kg. / Sq.mtr. (1875 Lbs. / Sq. inch).	200 Kg. / Sq.mtr. (2850 Lbs. / Sq. inch).
3	1:2:4	106 Kg. / Sq.mtr. (1500 Lbs. / Sq. inch).	150 Kg. / Sq.mtr. (2250 Lbs. / Sq. inch)

Tests:

Tests on concrete shall be carried out in accordance with IS-456/- and any other is applicable. The frequency of work test shall be at such intervals as ordered by the Bank and subject to that every 150 cu. m. of concrete placed or part thereof and for a day's concrete exceeding 30 cu.m. a batch of 6 cubes shall be made for every sample and 3 of them tested after 7 days and the remaining 3 cubes shall be tested after 28 days. The criteria for acceptance of a concrete as confirming to a specified proportion / grade of concrete shall be in accordance with IS: 456 and the Contractor shall entirely re-do the rejected work at his own cost. Strength of 28 days shall alone be considered for acceptance.

The Contractor shall arrange to carry out the tests in accordance with the relevant Indian Standards Specifications in an approved laboratory and the test reports in original be submitted to Bank. The entire cost of testing shall be borne by the Contractor.

Steel Reinforcement:

Reinforcement shall be accurately fabricated, placed and adequately maintained in position as shown on the drawings or as directed by the Bank. All finished bars shall be free from cracks, surface flaws, and laminations, jagged and imperfect edges. Cement mortar blocks shall be used to give requisite cover as shown be firmly tied with binding wire of 16 to 18 gauge. Reinforcement shall be bent in accordance with the procedure stipulated in IS: 2502-1963 and will not be straightened in a manner which will injure the material.

All reinforcement shall immediately before placing in concrete be thoroughly cleaned of loose mill scale, loose rust, oil and grease or other deleterious matter that would destroy or reduce bond. Reinforcement in reinforced concrete members shall not be connected by welding or coupling except in accordance with relevant ISS and with the previous approval of the Bank. Overlaps and joints shall be staggered and located at points, along the spans where neither shear nor bending moment is maximum.

Cover:

Reinforcement shall have cover as shown on the R.C.C. drawings and where not specified the thickness of cover shall be as follows. Cement mortar blocks in C.M. 1:1 shall be used for making cover blocks.

a) At each end of reinforcing bar not less than 25 mm. not less than twice the diameter of such rod or bar.

b) For a longitudinal reinforcing bar in a column not less than the diameter of such rod or bar. In the case of columns of minimum of 20 mm. or under whose reinforcing bars do not exceed 13 mm. the cover of 25 mm. may be used.

c) For longitudinal reinforcing bar in a column not less than 25 mm. not less than diameter of such rod or bar.

d) For tensile, compressive, shear or other reinforcement in a slab not less than 13 mm. nor less than diameter of such reinforcement, and

e) For any other reinforcement not less than 13 mm. not less than the diameter of such reinforcement.

B) WEIGH-BATCHING BASIS i.e. (DESIGN MIX CONCRETE):

Workmanship of Design Mix Concrete shall be carried out in accordance with I.S:456 – 2000 and any other I.S. Code is applicable.

TABLE – A

No	Nominal Mix.	Quantity of aggregates required per 50 kgs of cement.	Quantity of water required per 50 kgs of cement. Vibrated Unvibrated (For dry aggregate)

		Fine Cu.m. Coarse Cu.m.			
1	1:1:2	0.035 (1.2 C.ft.)	0.070 (2.4 C.ft.)	22 lit. (4.8 gal.)	27 lit. (6 Gal.)
2	1:1½:.3	0.052 (1.8 C.ft.)	0.106 (3.6 C.ft.)	23 lit. (5 Gal.)	30 lit. (6 Gal.)
3	1:2:4	0.070 (2.4 C.ft.)	0.138 (4.8 C.ft.)	27 lit. (6 Gal.)	32 lit. (7 Gal.)
4	1:3:6	0.105 (3.6 C.ft.)	0.210 (7.2 C.ft.)	28 lit. (6.25 Gal.)	34 lit. (7.5 Gal.)
5	1:4:8	0.150 (4.8 C.ft.)	0.280 (9.6 C.ft.)	-- --	45 lit. (10 Gal.)

TABLE – B

No.	Type of Work	SLUMPS When vibrated When not vibrated
1.	Mass concrete in R.C.C. foundation footings.	2.5 cms. 5 cms. (1") (2")
2.	Beams, slabs, columns with simple	2.5 cms. to 5 cms. 5 cms. to 10 cms.
	reinforcement.	(1" to 2") (2" to 4")
3.	Thin sections with congested reinforcement.	5 cms. to 10 cms. 10 cms. to 15 cms. (2" to 4") (4" to 6")

BRICK AND STONE MASONRY

General:

All brick work should be carried out as shown on the drawings with setbacks, projections, cuttings things, etc. Wherever the proportion of cement mortar has not been specifically mentioned, cement mortar in the proportion of 1:6 shall be used. Flat bricks arches shall be provided wherever required without any extra cost. Brick work shall be kept wet while in progress, till mortar has properly set. On holidays or when work is topped, top of all unfinished masonry shall be kept wet. Should the mortar become dry, white or powdery, for want of curing work shall be pulled down and rebuilt at the Contractor's expense.

Brick Work 1stClass:

Bricks shall be thoroughly cleaned, well wetted and soaked for at least twelve hours in fresh water before being used on the work. Bricks shall be of locally, available best quality. English bond shall be used throughout in walling. A good bond shall be maintained throughout the work, both laterally and transversely. In walling, the courses shall be kept perfectly horizontal and in plumb with the frogs facing upwards. Vertical joints shall not exceed 10 mm. thickness and shall be full of mortar. No broken bricks shall be used except as closers. After day's work all joints shall be raked to 12 mm. depth to provide for proper key to plastering.

Mortar used shall be as specified in respective items and every third course of brick work shall be flushed with mortar grout.

Whole of the masonry work shall be brought up at one uniform level throughout the structure; but where breaks are unavoidable, joints shall be made in good long steps. All junctions of walls and cross walls shall be carefully bounded into the main walls. The rate of laying masonry may be up to a height of 60 cm. per day if cement mortar is used and 45 cm. per day if lime mortar is used. Greater heights may be built only if permitted by the Bank. During rains, the work shall be carefully covered to prevent mortar from being washed away. Should any mortar or cement be washed away, the works shall be removed and rebuilt at the Contractor's expenses.

Bricks Work 2ndClass:
Shall be similar to 1st class brick work except that 2nd class bricks shall be used and joints shall be 10 mm. t0 12 mm. thick.

Half Brick Masonry:
Shall be set in cement mortar as specified. Hoop iron bands of 2.5 cm. x 0.16 (1" x 1/16") shall be embedded in every fourth course with thick mortar band or 2 Nos. 6 mm. (1/4") dia. bars shall be used in every sixth course otherwise as specified under item.

Timber used shall conform to specifications described under Materials, Doors, Windows, Ventilators, walls, Paneling, False Ceiling, etc., shall be in accordance with Bank's drawing in every detail and all joiner's work shall be accurately set out, framed and finished in a proper workman-like manner, frames of doors, windows and ventilators etc. and shutter styles and rails shall be best solid teak of quality specified in the schedule of quantities. The scantlings shall be accurately planed smooth, rebates, rounding and mouldings shall be made as shown on the drawings, patching or plugging of any kind shall not be allowed. Joints shall be simple, neat and strong. Framed joints shall be coated with suitable adhesive like glue or synthetic resin before the frames are put together. All mortise and tenon joints shall be fit and fully and accurately without wedging on filling. The joints shall be pinned with hard wood or bamboo pins of 10 mm. to 12 mm. dia. or rust resisting star shaped metal pins 8 mm. after the frames are put together and pressed in position by means of press. The frames are put together and pressed in progress of work by suitable boxing. All portions of timber abutting against or embedded in masonry or concrete shall be treated against termites by giving a coat of any approved wood preservative.

Unless otherwise specified all doors, frames shall have six M.S. flat hold fasts and window frames shall have four hold fasts shall be provided to the ventilators, if directed. Size of hold fasts shall be 30 mm. x 40 mm. x 6 mm. M.S. flat bent to shape worth fish tail end and it shall be fixed to frame with sufficient number of screws as directed. When door / window frames are to be fixed to R.C.C. column or R.C.C. wall, hold fasts shall be substituted by suitable arrangements such as coach crews, rawl bolts etc., to secure frames to R.C.C. column or R.C.C. wall as directed by the Bank.

Frames and shutter shall not be painted or erected before being approved by Bank.

Paneled Shutter:
Panels shall be of pattern and size as shown on the drawings or as directed by Bank. Solid teak wood panels shall be in one piece wherever possible. Where two or more pieces are permitted, they shall be of equal width. Panels shall be framed into grooves made in styles and rails to the full depth of groove and faces shall be closely

fitted to sides of groove.

Where panels specified are block board, it shall be solid core with teak internal lipping and of approved make.

Partly paneled and partly glazed shutter shall be similar to paneled shutters except that such parts as are directed shall be glazed with plain or ground glass as specified. Styles and rails shall be rebated 12 mm. to receive glass. Sash bars shall be moulded and rebated and mitered on sides to receive the glass which shall be fixed with putty and beads.

Hardware Fittings:

Unless otherwise specified all hardware, fittings and fixtures shall be supplied by the employer free of charge. However, the cost of fixing fittings shall be included in the rate quoted. The fixing shall be done in the best workman-like manner in accordance with the manufactures specifications. The Contractor shall be held responsible for working of all moving parts dependent on proper fixing. He will also be responsible for any breakage due to negligence during fixing or lack of protection before the building is handed over. The Contractor shall also take delivery of all hardware fittings etc., as and when supplied and arrange for safe storage etc.

Hardware required for fixing false ceiling, wall paneling etc., shall be arranged by the Contractor at his cost. Apart from the hardware fittings required for the joinery items, the Contractor shall have to fix all other items of hardware fittings to be supplied by the employer viz. coat / picture hooks, numerical, letters to denote buildings, hanging rods etc., as directed by the Banks.

Painting and polishing of wood work shall be as per specifications under respective heads.

Flush Doors:

All flush doors shall be solid core unless otherwise specified. It shall conform to the relevant specifications of I.S. 2202 and shall be obtained from approved manufactures. The finished thickness of the shutter shall be mentioned in the items. Face veneers shall be of the pattern and colour approved by the Bank and an approved sample shall be deposited with the Bank for reference.

The solid core shall be wood laminae prepared from battens of well-seasoned and treated good quality wood having straight grains. The battens shall be of uniform size of about 2.5 cm. width. Theses shall be properly glued and machine pressed together, with grains of each piece reversed from that of adjoining one. The longitudinal joints of the battens shall be staggered and no piece shall be less than 50 cm. in length. Alternatively, the core shall be of solid teak particle board. Edges of the core shall be lipped internally with 1st Class teak wood battens of 4 cm. (1.5”) minimum depth, glued and machine pressed along with the core.

The core surface shall then have two or three veneers firmly glued on each face. The first veneer (called cross band) shall be laid with its grains at right angles to those of the core and the second and the third veneers with their grains parallel to those of the core. The under veneers shall be of good quality, durable and well-seasoned wood. The face veneers shall be of minimum 1 mm. thickness and of well-matched and seasoned 1st class teak, laid along with grains of the core battens. The combined thickness of all the veneers on each face shall not be less than 4 mm. Thermosetting synthetic resin conforming to I.S. 303 or moisture-proof plywood grade MPF.I. Shall be used in manufacture. In addition to internal lipping all doors

shall have external lipping all round.

Frames for windows, ventilators etc., shall be square and flat. Both fixed and openable frames shall be constructed of section which have been cut to length, mitred and welded at corners. Sub-dividing bars shall be tenoned and rivetted into the frames. All frames shall have corners welded to a true right angle. For side hung shutters, hinges shall normally be of projecting type made of Aluminum alloy and rivetted / welded to frames. Handles, peg stays etc., or approved quality Aluminum or its alloy conforming to IS Specifications.

All types of shutters shall be fabricated, supplied and fixed as specified in the IS: 1948. The rate shall include supplying and fixing all fittings and fixtures required for proper and safe operation.

The doors shall be fabricated by using standard aluminum alloy extruded sections as specified in IS: 1948. The rate shall include supplying and fixing all fittings and fixtures including approved locking arrangement as directed.

All aluminum fabricated work shall be anodized to the British Standard 1616:1961 to give an anodized film of 25 micron.

The Contractor shall take to stack the fabricated frames etc., on site under cover. They shall be handled with care, stacked on edge on level bearers and supported evenly. Before erecting, the frames coming in contact with concrete, masonry, plaster of dissimilar metals shall be coated with a coat of Zinc Chromate conforming to IS: 104-1950. The Contractor shall cover all anodized finish work with a thick layer of clear transparent lacquer based on methacrylate or cellulose buy rate to protect the surface from wet cement during installation. This coating shall remove on completion. Before handing over, the aluminum work shall be washed with mild solution of non-alkali soap and water.

Glazing: Glazing shall be approved especially quality glass of specified thickness and unless otherwise directed it shall be provided the exterior with metal beading.

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 Bank, 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 Bank'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 Colored Cement Tiles, Marble Mosaic and Terrazzo Tiles Flooring:

The tiles shall conform to IS: 1237 having the colour approved the Bank 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 carborundum stone to obtain smooth surface and fine polish.

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 paid as described under mosaic tile flooring in every respect.

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

The tiles shall be square or rectangular of nominal sizes such as: 600 x 600 mm; 900 x 900 mm or as per tender schedule / drawings or as directed by the Engineer-in-Charge. Thickness shall be as per recommendations of the approved manufacturers. Technical specifications of the tiles shall be generally conforming to the following standards:
TECHNICAL SPECIFICATIONS FOR VITRIFIED TILES
NO PROPERTY EXPECTED STANDARDS
1 Deviation in length (+/-) 0.6%
2 Straightness of sides (+/-) 0.5%

3 Rectangularity (+/-) 0.6%
4 Surface flatness (+/-) 0.5%
5 Water absorption < 0.50%
6 Mohs. hardness > 6
7 Flexural strength > 27 N / mm²
8 Abrasion resistance < 204 mm²
9 Skid resistance (friction coefficient) > 0.4
10 Glossiness Min. 85% reflection
The tiles shall conform to the relevant standards in all respects. Samples of tiles shall be got approved from the
Engineer-in-charge before bulk procurement for incorporation in the work.

PREPARATION OF SURFACE FOR FLOORING: Following procedure shall be followed:

1) Sub grade concrete or RCC slab or side brick wall / or plastered surfaces on which tiles are to be laid shall be cleaned, wetted and mopped as specified for terrazzo tile flooring.
2) Mortar and bedding: Cement mortar for bedding shall be prepared of mix 1:4 or as specified in the schedule of items, to a consistent paste and shall conform to the specification for materials, preparations etc. as specified under cement mortar. The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles. Before spreading the mortar bed the base shall be cleaned off all dirt, scum or laitance and loose materials and well wetted without forming any pools of water on
The surface. The mortar of specified proportion and thickness shall then be evenly and smoothly spread over the base by use of screed battens to proper level or slope.
3) Once the mix is prepared, no further water be added and the same shall be used within one hour of adding water. Apply on an average 20 mm thick bedding of mortar over an area of 1 sqm. at a time over surface of the area for laying tiles, in proper level and allowed to harden sufficiently to offer a fairly good cushion for the tiles to set.

LAYING OF TILES FOR FLOORING: The tiling work shall be done as per the pattern shown in the drawing or as directed by the Engineer-in-Charge. As a general practice laying of tiles shall be commenced from the center of the area and advanced towards the walls. Cut tiles, if any, shall be laid along wall with necessary border pattern as shown/ directed by the Engineer-in-Charge. Tiling work shall be completed by pressing tiles firmly into place along the wall / floor. A white cement slurry to the back of the tile to be applied to ensure proper and full bedding. The tiles shall be laid on the bedding mortar when it is still plastic but has become sufficiently stiff to offer a fairly firm cushion for the tiles. Tiles, which are fixed on the flooring adjoining the wall, shall be so arranged that the surface on the round edge tiles shall correspond to the skirting or dado. Press gently the tile with wooden mallet for even adherence at the back of the tile. Do not use an iron hammer or some heavy material to press the tile. The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles.
There shall be no hollows in bed or joints. The joints shall be kept as close as possible and in straight line.
Unless otherwise specified, joint-less tiling shall be done butting the tiles with each other. If joint is specified, the same shall not exceed 1.00 mm. in width. The joint shall be grouted with white / matching colour cement slurry. After fixing the tiles, finally in an even plane or slope, the flooring shall be covered with wet sand and allowed undisturbed for 14 days.

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

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

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

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

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

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

CLEANING AGENTS FOR VITRIFIED TILES

STAINS CLEANING AGENT: Robin Blue Household detergent / Warm water, **Marker ink** Turpentine / Acetone / Trichloroethylene, **Pen ink** Acetone / Isopropyl alcohol Methylene blue Isopropyl alcohol / Acetone, **Sauce** Ammonia solution **Cement** Turpentine / Acetone / Trichloroethylene / Conc. HCL, **Tea** Hydrochloric acid / Bleaching powder, **Coffee** Sodium hydroxide / Potassium hydroxide, **Beer** Sodium hydroxide / Potassium hydroxide, **Diesel** Acetone / Petrol, **Lab indicator** Acetone / Isopropyl alcohol

Cement and grouting Hydrochloric acid
Pencil mark Benzene or Toluene or Xylene
Plaster of Paris (POP) Ammonium sulphate solution Iodine (Tincture iodine) Sodium hydroxide / Potassium hydroxide
Hair dye Per chloric acid
Pan Lemon juice or citric acid Marker pen Acetone

WALL CARE PUTTY

SCOPE OF WORK:

Wall care putty consists of white cement, high quality polymers and specialty chemicals and mineral fillers and is formulated to make it suitable to apply even on damp surfaces. Being cement based putty, it has better compatibility with the base plaster and forms a durable base for paints. It can be applied on both, Interior and exterior plastered surfaces. It is a water resistant base coating to the plastered surfaces to provide fine leveling and a protective base for the surfaces to be painted.

GENERAL:

Wall care putty shall have superior water resisting properties to prevent paint from flaking even if the walls are damp. It should fill-up fine pores in walls and ceilings to get the smooth and dry surface for painting. Wall care putty shall have better properties in terms of water-resistance, adhesive strength and durability as compared to the ordinary putties. The putty shall provide a breathable surface and allow any trapped moisture to move out keeping the wall dry and clean.

MATERIAL:

Wall care Putty shall be in dry free flowing powder form. Required quantity of Wall care putty shall be procured from the reputed manufacturers like M/s. Birla White Wall Care Putty / M/s. Walplast Products Pvt. Ltd. or equivalent approved manufacturers, or from their authorised dealers. The putty shall conform to the International standards (Water-resistant properties).

The putty shall be procured in the form of FINE or COARSE (MATT) finish as specified in the description of the item.

PREPARATION OF SURFACE:

Surface should be clean of loose particles, dirt, grease and traces of foreign material. Sand papering or chipping shall be done if so required.

Loose plastered areas/defective materials shall be removed & surface re-plastered and cracks filled-up properly.

Uneven ceiling/wall surfaces shall be made even by re-plastering.

Surface should be pre-wetted prior to application. This helps in providing a strong bond with substrate.

MIXING:

12 to 16 litres of clean water shall be required for a bag of 40 kg of wall care putty. Required quantity of putty (which is required to be used at a time) shall be added to the water in right proportion. (considering pot life of the mix as 60 minutes).

Mix shall be stirred continuously by using an electric mixer or by hand to obtain a homogeneous lump-free paste.

The paste shall be allowed to stand for about 10 minutes for the additives to dissolve.

The paste shall be re-mixed again for about 2 minutes.

This mix should be used within 60 minutes.

APPLICATION:

The plastered surface shall be dampened with clean water and excess water shall be allowed to be drained off. Using a steel trowel/blade, the above mix shall be applied to a thickness of about 1 – 2 mm. Then the surface shall be levelled and smoothened. This first coat shall be cured lightly after it dries-up.

Then second coat shall be applied after first coat is fully dried and set. Second coat shall be cured lightly for two days.
Over plastered / Coarse putty substrate, fine wall care putty of about 1 to 1.5 mm thickness shall be applied, to smoothen the surface with a steel trowel. Finished surface of wall care putty shall not require any dressing by Emery Paper but if at all it is done, the paper should not be less than 500 number.

The thickness of each coat should not exceed 1.5mm and total wall putty thickness should not exceed 3mm.

If specified in the description of item, coarse wall care putty of about 6 to 10 mm thickness shall be applied to remove the undulations and level the surface. More number of coats of coarse putty shall be applied to cover up undulations, only after approval of the Engineer-in-Charge.

Coverage of wall care putty depends upon surface quality. However, approximate coverage for fine wall care putty shall be 20-22 Sqft/kg and for coarse wall care putty, it shall be 9-10 Sqft/kg.

Application of primer before painting is not necessary over the surfaces finished with wall care putty.

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 racked 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 burns 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. A thin layer of neeru shall then be applied and rubbed into surface and finished by means of trowel until the surface is even and smooth. The surface shall be kept moist for seven days and then given a coat of white wash.

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 Cast Plaster:
Except for the finishing coat the surface shall be prepared and base coat of plaster applied as under sand-faced plaster.

Finishing coat mortar shall be in proportion of one part of cement and one part of specially selected and graded sand and one part of gravel of 3 to 6 mm. size. It shall be flung upon the first coat with large trowel to form an even and decorative coat. The work shall generally conform to clause 16.5 of IS: 1661-1960. The thickness of the coat shall be about 12 mm. (1/2"). It shall be cured 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 Banks. The Contractor shall also furnish full details of such treatment to the Banks 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:

1. 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.

2. 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.

3. 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.

4. 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 slops, 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 direct 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 Banks 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 form the Banks.
Colour wash shall be applied as specified under white wash.

Dry Distemper:
Shade shall be got approved from the Banks before application of distemper.
The surface shall be prepared as specified earlier. A primer coat using approved primer or sizing shall be applied. Distemper prepared as per manufacturer's directions shall be applied and each coat shall be allowed to dry before subsequent coat is applied. The finished surface shall be free form chalking when rubbed, even uniform and shall show not brush marks. If additional coats are necessary, they shall be given at no extra cost.

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 s 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 Bank 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 cost 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 mouldings 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 of if directed, it shall be stippled with a stippling brush.

GLAZIER:

All glass to be of approved manufacturer complying with IS 3548-1966 as per approved quality and sample to be of the selective qualities specified and free from bubbles, smoke, air holes and other defects.

Polished plate glass shall be “glazing glass” (G. G.) quality and that for mirrors shall be “silvering quality” (S.G.) conforming to IS 3438-1965 or as per approved sample and quality.

The compound for glazing to metal is to be a special non-hardening compound manufactured for the purpose and of a brand and quality approved by the Competent Authority.

While cutting glass, proper allowance be made for expansion. Each square of glazing to be in one whole sheet. On completion of work clean all glass inside and cut, replace all cracked scratched and broken panes and leave in good condition.

Transparent Colored Polyurethane (Melamine)

This shall be applied where natural grain of the wood is required to show. Polyurethane gives tough surface which resist chipping, scratching and boiling water.

Application:

Clean off all grease and wax with an abrasive and white spirit, this should not be applied in humid conditions. Apply the first coat, preferably of clear hard glaze with a cloth pad. Leave this to dry for at least six hours, then apply further coats with a paintbrush. If you wait for longer than 24 hours between coats, rub down the previous coat with fine glass paper or a medium grade of steel wool. Obtain a matt finish, if required, by giving a final coat of clear Reseal Matt coat.

Miscellaneous Items of Work:

The rates quoted by the Contractor for all miscellaneous items of work viz. Cooking platforms, mories, 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 Banks.

METHODOLGY FOR REPAIRS OF RCC ELEMENTS

(PMM & Micro Concrete Works)

A. The methodology for the repair of 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 boning 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 loose 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 center 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.

B. 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-25shall 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 M25, sufficient offset around column shall be casted with M-40. Sufficient carpenters along with supervisor shall inspect the behavior 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.

C - METHODOLOGY FOR STRENGTHNING OF SLAB 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 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 by using Lock fix of 'FOSROC' make
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 core are not possible so we prefer 3 holes in that grid.)
m	DE shuttering 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 :

S. No.	Activity Detail	Yes	No	Sign of Contractor's Engineer	Sign of Bank	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 ipnet RB / nitozinc 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

Sr. No	Description	Date	Completed		Area as per Tender Item Unit	Checked by	
			Yes	No		Contractor's 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						
a)	Steel Fixing work						
b)	Shear Connector fixing						
9	Grouting Work (Epoxy grout)						
10	Application of Polymer modified mortar						
a)	Up to 15mm thick						
b)	Beyond 15 mm to 30mm thick						
11	Application of corrosion inhibitor to existing surface						
12	Application of Epibond to concrete surface column						
13	Shuttering column by using waterproof plywood shuttering						
14	Micro Concrete work						
15	Plaster 1st Coat & 2nd Coat						

MEASUREMENT FORM

M/s _____

Name of the Work : Page No.:

Date :

S. No.	Description	Unit	No.	Length	Breadth	H/Depth	Qty.	Remarks

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 Banks / 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 Bank'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 Material
		b) Particle Size Distribution
3	Cement Concrete RCC Mix Design	a) Slump
		b) Cube Strength
		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 Strength
		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 BANK.

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 Efflorescence		40,000 40,000	For 40,000 or part. One test per Source.
8	Marble	Moisture absorption Mho's scale hardness	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 Type3 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 BANK / SBI as his own cost.

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.	1:2:4 (1 Cement: 2 Sand :4 Graded Aggregate).	6.40 Bags.	Cubic Meter
b.	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
c.	String or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills and the like moldings in cornices, window sills etc.	7.62 Bags.	Cubic Meter
d.	White Cement Mortar 1:2 (1 White Cement : 2 Marble Dust)	13.60 Bags.	Cubic Meter
2.	**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
3.	**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
4.	**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 (1Cement: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.	Molding 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	

No	Description of item of work.	Quantity of cement to be used per Unit Quantity of work.	Unit.
e.	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	
f.	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	
5.	**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)
6.	**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.	
7.	**Cement Concrete 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
8.	**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
9.	Tile Flooring:		
a.	Cement mortar1:4 (1 Cement:4 Coarse Sand)		

No	Description of item of work.	Quantity of cement to be used per Unit Quantity of work.	Unit.
b.	Light shade using white cement.	0.258 Bags Per Square Meter (Grey Cement) 0.132 Bags Per Square Meter (White Cement)	
c.	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)	
d.	Dark shade using grey cement.	0.39 Bags Square Meter (Grey Cement)	
10.	**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	
11.	**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 Cement :4 Sand)	5.48 Bags per 100 Square Metre	
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	
12.	**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	

No	Description of item of work.	Quantity of cement to be used per Unit Quantity of work.	Unit.
13.	**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)	
14.	**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	

12.1.2 INTERIOR WORKS

1. GENERAL

This specification is for work to be done, item to be supplied and materials to be used in the works as shown and defined on the drawings and described herein, all under the supervision and to the satisfaction of the Competent Authority. Competent authority means Banks / Engineer in charge.

1.1 The workmanship is to be the best and of high standard, use must be made of special trade's men in all respects of the work and allowances must be made in the rates for doing so.

1.2 The materials and items to be provided by the contractor shall be approved by the Competent Authority in accordance with any samples which will be submitted for approval by Contractor and generally in accordance with the Specifications Also if products are specified in the catalogue reference, the contractor will be required to obtain the approval of the Competent Authority before using a material. The Contractor shall produce all invoices, vouchers or receipts for any material if called upon to do so by the Competent Authority.

1.3 Samples of all materials are to be submitted to the Competent Authority for approval before the Contractor orders or delivers the materials at site. Samples together with their packing are to be provided free of charge by the Contractor and should any materials be rejected; they will be removed from the site at the Contractor's expense. All samples will be retained by the Competent Authority for comparison with materials, which will be delivered at the site. Also, the Contractor will be required to submit specimen finishes of colours, fabrics etc. for the approval of the Competent Authority before proceeding with the work.

1.4 The contractor shall be responsible for providing and maintaining and boxing or other temporary coverage required for the protection of dresses or finished work if left unprotected. He is also to clean out all shelving's, out ends and other waste from all parts of the works before coverings or in-fillings are constructed.

1.5 Templates, boxes and moulds shall be accurately set out and rigidly constructed so as to remain accurate during they are in use.

1.6 All unexposed surface of timber e. g. false ceiling, backing fillets, backs of door frames, cupboard framing, grounds, etc. are to be treated with two coats of approved timber preservative before fixing or converging.

1.7 Only first-class workmanship will be accepted. Contractor shall maintain uniform quality and consistency in workmanship throughout.

2. JOINERY:

2.1 Joinery is to be prepared immediately after the placing of the contract, framed up, bonded and waged up. Any portions that are wrapped or found with other defects are to be replaced before wedging up. The whole of the work is to be

framed and finished in a workmen-like manner in accordance with the detailed drawings wrought and wherever required, fitted with all necessary metal ties, straps, belts, screws, glue etc. Running beaded joints are to be cross-tongued with teak wherever 1(1/2) thick double cross tongued. Joiners work generally to be finished with fine sand/glass paper.

2.2 Joints: All joints shall be standard mortise and tenon, dowel, dovetail, and cross halved. Nailed or glued butt joints will not be permitted, screws, nails etc. will be standard iron or wire of oxidized nettle fold tenon should fit the mortises exactly.

2.3 Nailed or glued butt joints will not be permitted except in exceptional cases with approval of Competent Authority.

2.4 Where screws shown on a finished surface, those will be sunk and the whole plugged with a wood plug of the same wood and grain of the finished surfaces will be neatly punched and the hole filled with wood filler to match the colour.

2.5 Should joints in joiner's work open, or other defects arise within the period stated for defect liability in the contract and the clause thereof, be deemed by the Competent Authority to be due such defective joinery shall be taken down, and refilled, redecorated and/or replaced if necessary and any work disturbed shall be made good at the Contractor's expense.

2.6 Nails spikes and bolts shall be of lengths and weights approved by the Competent Authority. Nails shall comply with is 1959-1960 or equivalent approved quality sample. Brass-headed nails are to comply with B. S. 1210. Wire staples shall comply with B. S. 1494 or equivalent.

2.7 The contact surface of dowels, tennons wedges etc., shall be glued with an approved adhesive. Where glued, joinery and carpentry work is likely to come into contact with moisture, the glue shall be waterproof.

3.0 HARDWARE AND METALS:
The hardware throughout shall be of approved manufacture or supplier well-made and equal to in every respect to the samples to be deposited with the Competent Authority. The contractor may be required to produce and provide samples from many different sources before the Competent Authority takes decision and he should allow his rates for doing so.

3.1 Fittings generally shall be brass oxidized, unless otherwise specified and shall be suitable for their intended purpose. In any case, it will have to be approved by Competent Authority before the Contractor procures it at site of work.

3.2 Screws are to match the finish of the article to be fixed, and to be round or flat headed or counter sunk as required.

3.3 The contractor should cover up and protect the brass and bronze surfaces with a thick grease or other suitable productive material, renew as necessary and

subsequently clean off away on connection.

3.4 Aluminium and stainless steel shall be of approved manufacture and suitable for its particular application. Generally, the surface of aluminium shall have an anodized finish and both shall comply with the samples approved by the Competent Authority. All stainless-steel sheets shall be 304 S. S. Japan or equivalent with gauge as specified but not thinner than 16G.

3.5 All steel, brass, bronze, aluminium and stainless-steel articles shall be subjected to a reasonable test at the Contractor's expense.

3.6 All brazing and welds are to be executed in a clean and smooth manner rubbed down and left in the flattest and tidiest way, particularly where exposed.

3.7 Chromium plating shall be in accordance with I. S. Standard or as per approved specification for normal outdoor conditions and shall be on a base material of copper or brass.

4.0 GLAZIER:

4.1 All glass to be of approved manufacturer complying with IS 3548-1966 as per approved quality and sample to be of the selective qualities specified and free from bubbles, smoke, air holes and other defects.

4.2 Polished plate glass shall be "glazing glass" (G. G.) quality and that for mirrors shall be "silvering quality" (S.G.) conforming to IS 3438-1965 or as per approved sample and quality.

4.3 The compound for glazing to metal is to be a special non-hardening compound manufactured for the purpose and of a brand and quality approved by the Competent Authority.

4.4 While cutting glass, proper allowance be made for expansion. Each square of glazing to be in one whole sheet. On completion of work clean all glass inside and cut, replace all cracked scratched and broken panes and leave in good condition.

5.0 PAINT AND POLISHES:

5.1 All material required for the works shall be of specified and approved manufacturer, delivered to the site in the manufacturer's container's name or trade mark with a description of the contents and colour. All materials are to be stored on the site.

5.2 Spray painting with approved machines will be permitted only if written approval has been obtained from the Competent Authority prior to painting. No spraying will be permitted in the case of priming costs nor where the soiling of adjacent surfaces is likely to occur. The buzzle and pressure to be so operated as to give an even coating throughout to the satisfaction of the Competent Authority.

The paint used for spraying is to comply generally with the specification concerned and is to be specially prepared by the manufacturer for spraying. Thinning of paint made for brushing will not be allowed.

5.3 Wood preservative shall be Solignum or other equal and approved impregnating wood preservative and all concealed woodwork shall be treated with wood preservative.

5.4 All brushes, tools, pots kettles etc. used in carrying out the work shall be clean and free from foreign matter and are to be thoroughly cleaned out before being used with a different type of class of materials.

5.5 All iron or steel surfaces shall be thoroughly scraped and rubbed with wire brushes and shall be entirely free from rust, mill scale etc. before applying the priming coat.

5.6 Surfaces of now wood work which to be painted are to be rubbed down, cleaned, down to the approval of the Competent Authority.

5.7 Surfaces of previously painted woodwork which are to be painted are to be cleaned down with soap and water, detergent solution or approved solvent to remove dirt, grease etc. Whilst wet the surfaces shall be flatted down with a suitable abrasive and then rinsed down and allowed to dry. Minor areas of defective paint shall be removed by scraping back to a firm edge and the exposed surface touched in with primer as described and soaked with putty. Where woodwork has been previously painted or polished and it is to be newly polished, with scrapping, burning off or rubbing down and making surface properly.

5.8 Surfaces of previously painted metal which shall be painted are to be cleaned down and flattened down as described in surfaces of any rust and loose scale shall be removed completely by chipping, scrapping and wire brushing back to the bare metal and touched in with primer as described.

6.0 UPHOLSTERY:

6.1 This will be of first-class standard workmanship with webbing, no-sag springs, coiled springs, padding and filling as specified on drawing. Covering fabrics will be seen, tufted, and corded as shown on the drawing and as approved by the Competent Authority.

6.2 Cushion Vents: Brass “cushion Vents” should be installed at the back or under side or seat cushions (especially those covered in leather vinyl plastic or very tightly woven fabric) to allow air to escape easily and to prevent torn seems.

6.3 Materials: Finished timber shall be of the type specified. Furnishing fabrics, colour, pattern, substance to be as specified, no variations of this will be permitted unless with prior approval of the Competent Authority.

7 POLISH:

7.1 French polish: The basic material shall be shellac dissolved in mentholated spirit.

Preparation:

The timber must be well sanded and cleaned and the grain filled with grain filler. Any staining must be done before applying the polish.

Equipment:

The polishing rubber the most important implement in French polish shall consist of a pad of cotton wool, which acts as a reservoir for the polish, and a cover of soft white linen of cotton fabric, similar to a well-worn handkerchief which acts as a fitter. The rubber must never be dipped into the polish; it should be charged by pouring the polish on to the pad with the cover removed.

Application:

Work evenly over the surface with a slow figure-of-eight motion until the timber is coated with a thin layer of polish. The object is to apply a series of thin coats, allowing only a few minutes for drying between the coats. When a level and even-bodied surface is obtained the work is ready for the second stage i.e. spiriting off.

Allow the work to stand for at least eight hours, then take a fresh rubber with a double thickness of cover material and charge it with mentholated spirit. The object of spiriting off into and remove the rubber marks and to give the brilliance of finish.

Finally, work in the direction of the grain and continue until the surface is free from smears and rubber marks then leave to harden off.

7.2 Wax polish:

Wax polish shall contain silicones and driers. A good silicon wax is to be used not a creamy or spray. The timber shall be sealed first with another finish such as Ron seal, before applying wax.

Application:

Apply coat of the sealer by brush or cloth direct to the unfilled timber, working it well in and finishing evenly with the grain. Allow to dry thoroughly then sand lightly with fine abrasive paper. Apply a heavy coat of wax by cloth on flat surfaces, with a stiff brush. Work it well into the timber and finish off by stroking with the grain before leaving to harden. Leave for four hours before rubbing up with a soft brush. Finally, buff the grain with a soft cloth.

7.3 Transparent Colored Polyurethane (Melamine)

This shall be applied where natural grain of the wood is required to show. Polyurethane gives tough surface which resist chipping, scratching and boiling water.

Application:

Clean off all grease and wax with an abrasive and white spirit, this should not be applied in humid conditions. Apply the first coat, preferably of clear hard

glaze with a cloth pad. Leave this to dry for at least six hours, then apply further coats with a paintbrush. If you wait for longer than 24 hours between coats, rub down the previous coat with fine glass paper or a medium grade of steel wool. Obtain a matt finish, if required, by giving a final coat of clear Reseal Matt coat.

8. TIMBER:

8.1 Only seasoned Teakwood to be used.

8.2 Use of Rose wood wherever specified.

8.3 All the wood shall be properly seasoned, natural growth and shall be free from worm holes, loose or dead knots or other defects, saw die square and shall not suffer warping, splitting or other defects.

8.4 The moisture content shall not exceed 12%.

8.5 All internal frame work shall be treated with approved wood preservative.

8.6 All wood brought to site should be clean shall not have any preservative or other coating/covering.

8.7 All rejected decayed, bad quality wood shall be immediately removed from site.

8.8 All wood brought to site must be stacked-stored properly as per instructions.

9.0 PLYWOOD:

Plywood/medium density fibre board/teak practical board/ Veneer shall be as specified in the approved list of manufacturers shall be used. Commercial ply shall confirm I. S. I. 303 of approved make. Marine plywood shall generally conform to generally I. S. 303 BWR or unless specified I.S.710-1980(BWP) Particle board shall be phenol formaldehyde bonded and generally conform to I. S. 30871965. Only 3mm to 4mm thick straight-grained groups matching approved veneers shall be used. No extra claim will be entertained for veneer if found of extra thickness. N B:

1. The contractor should obtain prior approval from Employer / Consultants before placing order for any specific materials. Employer may / delete any of the makes or brands out of the above list. The materials shall be only of the approved makes as specified in this. The Contractor shall submit samples of all the makes as specified in this list and the SBI.
   Engineer in Charge / Owner shall have the power to select any of them. The SBI Engineer in Charge / Owner decision in this regard shall be binding on the Contractor. In case any materials is not available for any one or all of these approved makes the consultant / Owner shall select and approve alternative make(s).

2. All materials should conform to relevant standards and codes of BIS.
3. Materials with I.S.I. Mark shall be used duly approved by the SBI Engineer/ Bank.

4. 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 Engineer in Charge. The same will not be considered for payment. All the materials to be ISI marked.

10. Technical Partition of wooden partitions

A plywood partition typically consists of a rigid structural framework (aluminum or wood), flanked by 12–18 mm plywood panels, and finished with decorative laminates or veneers.

10.1. Recommended Plywood Thickness & Grades

The plywood specification depends on your partition's function.

- Standard Room Dividers: 12 mm thickness is sufficient for simple, non-load-bearing dividers.
- Load-Bearing or Shelved Partitions: 18 mm to 25 mm thickness ensures rigidity and high screw-holding capability.
- Moisture Exposure: Use BWR (Boiling Water Resistant - IS:303) or BWP (Boiling Water Proof - IS:710) grades if the partition is near bathrooms, kitchens, or in coastal environments like Mumbai.

10.2. Framework Specifications

The structural framework gives the partition its strength and houses wiring.

- Material:
  - Aluminium: Most common, typically 50 mm × 50 mm or 50 mm × 25 mm sections (minimum 1.2–1.6 mm wall thickness).
  - Timber: Treated hardwood frames (e.g., 50 mm × 50 mm spaced at max 450 mm to 600 mm c/c vertically and horizontally).
- Support: Vertical framework members should securely anchor to the floor and extend up to the ceiling slab for full stability.

10.3. Acoustic & Insulation Requirements

- Sound Insulation: To reduce sound transmission, fill the internal cavity of the partition with Rockwool or Glass wool (typical density of 48 kg/m³, 50 mm thick).
- Double-Skin Application: Plywood is usually applied on *both* sides of the frame for optimal acoustics and a flush appearance.

10.4. Surface Finish & Edge Banding

- Decorative Finish: The plywood surface is typically finished with 1.0 mm thick decorative laminate (e.g., Merino, Greenlam) or a 3.5 mm wood veneer.
- Edge Treatment: Exposed edges must be finished with PVC edge-banding or solid wood *beading* to prevent moisture ingress and de-lamination.

10.5. Services and Installation

- Conduit Routing: Provide pre-drilled holes through the aluminum or timber studs for electrical wiring and networking cables before sealing the second plywood skin

- 10.6 Dry Interiors (Commercial Offices)
- For basic separation, room dividers, and office cabins where direct water exposure is non-existent, use Moisture Resistant (MR / IS:303) or cost-effective Calibrated plywood.

A budget-friendly, commercial-grade hardwood ply with balanced strength.

- *Thickness:* 12 mm for standard partitions; 18 mm if anchoring heavy items like wall-hung TVs.
- *Tech Spec:* Glue Line Protection (GLP) to ensure high resistance against wood borers and termites.

A zero-gap, calibrated plywood offering flat surface uniformity ideal for seamless partition laminates.

- *Thickness:* 12 mm or 18 mm sheets.
- *Tech Spec:* Low VOC / E0 emission compliance, ensuring safe indoor air quality in sealed air-conditioned offices

Tech Spec: Manufactured with 100% Phenol Formaldehyde synthetic resin, passing rigorous 72-hour boiling water immersion tests without losing structural integrity. It provides a high screw-holding strength of >200 kg

100% gapless calibrated hardwood utilizing Nano-particle chemical VPT (Vacuum Pressure Treatment) providing Fire Retardant (FR) properties alongside E-0 eco-compliance.

Combines high moisture threshold with active safety properties.

- *Thickness:* 18 mm.
- *Tech Spec:* Conforms to IS:5509 standards; treated with organic phosphorus chemicals to delay flame penetration, reduce smoke generation, and lower the rate of burning.

11. Technical specifications for mineral fiber false ceiling

11.1 General & Physical Properties

- Material Composition: Wet-formed mineral fibers combined with binders, clay, perlite, and cellulose.
- Standard Dimensions: Typical sizes include 595 × 595 mm for metric grid modules and 600 × 600 mm. (For larger areas, 600 × 1200 mm sizes are also used).
- Thickness: Ranges between 12 mm to 20 mm, depending on required durability and acoustic performance.
- Surface Finish: Factory-applied, multiple coats of vinyl latex paint (usually smooth, pin-perforated, or fine-fissured).
- Edge Details: Square Edge (for visible grid systems) and Tegular or Bevelled Edge (for dropped or semi-concealed grid systems).

11.2 Acoustic Performance

- Noise Reduction Coefficient (NRC): Measures sound absorption, typically ranging between 0.50 to 0.85 (higher is better for open-plan spaces like call centres).
- Ceiling Attenuation Class (CAC): Measures the tile's ability to block sound between adjacent rooms, generally rated from 33 dB to 35 dB+.

11.3. Safety & Durability

- Fire Performance: Classified as Class A / Class 0 (BS 476 Part 6 & 7) or A2-S1.d0 (EN 13501), ensuring non-combustibility and low smoke development.
- Humidity Resistance: High-performance tiles feature over 95% to 99% Relative Humidity (RH) resistance, preventing sagging in humid environments like Mumbai.
- Light Reflectance: ≥ 85% to 90%, which helps maximize the efficiency of ambient interior lighting.

11.4. Suspension Grid System

- Grid Type: Exposed T-grid system (commonly Prelude 15/16 or 9/16 system) made from hot-dipped galvanized steel.
- Load Bearing Capacity: ≥ 14 kg/m² to accommodate tiles, lighting fixtures, and standard duct diffusers

12.00 Technical specifications for gypsum board false ceiling

12.1. Gypsum Board (Plasterboard)

- Thickness: Typically, 12 mm for standard applications (also available in 9.5 mm for curves or 15 mm for sound/fire insulation).
- Board Dimensions: Standard panels are 1200 mm × 2400 mm.
- Edge Type: Tapered edges (to allow for seamless jointing and taping).
- Density: Ranges between 6.5 to 8.5 kg/m².
- Core Types:
  - Standard Board: For regular living/office spaces.
  - Moisture-Resistant (WR): Ideal for bathrooms, kitchens, and high-humidity areas.
  - Fire-Resistant: Impregnated with glass fibers; used for commercial spaces or near HVAC vents.

12.2. Galvanized Iron (GI) Framework

The suspension system is constructed using cold-rolled galvanized steel sections (conforming to IS: 277 standards) and suspended from the structural soffit.

- Perimeter Channel: Placed along the walls; 0.5 mm thick, size 20 mm × 30 mm × 27 mm.
- Intermediate Channel: Suspended from the ceiling using ceiling angles; size 45 mm × 15 mm × 0.9 mm spaced at a maximum of 1200 mm centers.
- Ceiling Section (Furring Channel): The main holding sections for the boards; size 80 mm × 26 mm (with 10.5 mm lips) at 0.5 mm thickness, spaced at 450 mm centers.
- Ceiling Angle / Hangers: 25 mm × 10 mm × 0.5 mm angle sections used to hang intermediate channels from the RCC soffit using heavy-duty ceiling cleats and Rawl plugs.

12.3. Fasteners & Hardware

- Drywall Screws: Black, chemically treated, rust-resistant screws of size 3.5 × 25 mm, spaced at maximum 230 mm intervals along the grid.
- Fasteners: Heavy-duty steel expansion fasteners or 4 mm diameter GI wire for rawl plugs.

12.4. Jointing & Finishing

- Jointing Compound: A proprietary premix used to fill and cover gaps between boards.
- Fiberglass/Paper Tape: Applied over joints and embedded in the compound to prevent cracking.
- Surface Finish: Minimum of 2 to 3 coats of jointing compound, sanded flat, followed by a primer and acrylic emulsion paint

13.0 Technical specifications for pet board false ceiling

13.1. Material & Physical Specifications

- Composition: 100% Polyester Fiber (PET) made from recycled post-consumer plastics.
- Panel Dimensions: Typically available in 1220 × 2440 mm (8 ft × 4 ft) sheets, as well as pre-cut baffle or plank dimensions (e.g., 150 mm or 300 mm widths).
- Thickness Options: 9 mm, 12 mm, 15 mm, and 24 mm (with 9 mm and 12 mm being standard for standard acoustic tiles).
- Density: Standard densities range from 135 kg/m³ to 200 kg/m³ depending on desired rigidity.
- Surface Finish: Non-woven, matte, felt-like texture. Available in a wide variety of colors.

13.2. Acoustic Performance

- Noise Reduction Coefficient (NRC): Typically between 0.75 and 0.90, absorbing 75% to 90% of striking sound energy.

- Reverberation Control: Highly effective at eliminating echoes, standing waves, and flutter, ideal for home theatres, auditoriums, and office spaces.

13.3. Safety & Environmental

- Fire Rating: Class-A or B-s1, d0 as per EN 13501-1/ASTM E84 standards (inherently flame retardant).
- Emissions: Formaldehyde-free and zero to low VOC (Volatile Organic Compounds) for safe indoor air quality.
- Eco-Friendliness: 100% recyclable material with significant LEED eligibility.

13.4. Installation & Framework

- Mounting Type: Can be installed using standard Concealed/T-grid suspension, direct screw-mounting, or suspended as vertical acoustic baffles utilizing aircraft cables.
- Grid System: If using a drop-ceiling, standard lightweight Galvanized Iron (GI) or aluminium T-grids (e.g., 600 × 600 mm or 600 × 1200 mm grids) are utilized.]
- Weight: 9 mm boards weigh roughly 1.5 to 2 kg per square meter, allowing for minimal stress on existing roof structures.
- Maintenance: Dust-resistant and non-allergenic; maintenance can be done via periodic vacuuming. It is fully moisture-resistant and immune to Mold and mildew.

14.0 Technical specifications for aluminium powder coated or anodised Partition

14.1 Base Material & Extrusions

- Alloy & Temper: Extrusions must be manufactured from structural-grade aluminium alloys, typically Alloy 6063-T6 or 6063-T5 (conforming to IS: 733 and IS: 1285).
- Profile Dimensions: Common structural sizes for vertical and horizontal mullions are 50 × 25 mm, 63.50 × 38.10 mm, or 100 × 45 mm depending on the partition height.
- Wall Thickness: Minimum structural wall thickness of 1.2 mm to 2.0 mm to prevent warping and support in-fill panels.

14.2. Surface Treatment

- Powder Coating:
  - Finish: Thermosetting Polyester or Epoxy/Polyester powder.
  - Thickness: Minimum Dry Film Thickness (DFT) of 50 to 80 microns (tested as per *IS: 6012* for eddy current).
- Anodising:
  - Finish: Sulphuric acid anodic coating, transparent or dyed (e.g., clear satin, bronze, black).
  - Grade: Minimum Grade AC 10 or AC 15 (conforming to *IS: 1868*).

14.3. Infill Panels & Glazing

- Glazing: Toughened / tempered float glass (conforming to *IS: 2553*) with a minimum thickness of 5 mm to 8 mm (or up to 10 mm for full floor-to-ceiling partitions).
- Solid Panels: For the lower solid panel, 12 mm thick pre-laminated particle board (conforming to *IS: 12823*, Exterior Grade) or high-density MDF is recommended.
- Gasketing & Beads: EPDM (Ethylene Propylene Diene Monomer) or high-grade neoprene rubber gaskets / beads to ensure acoustic insulation and weatherproofing.

14.4. Hardware & Assembly

- Fasteners: Self-tapping stainless steel or cadmium-plated (CP) brass screws. Dash fasteners are typically used for floor/wall fixing.
- Door Elements: If a door is integrated into the partition, sections must be a minimum of 114.3 × 44.45 mm (bottom rail). Hardware like floor springs, hinges, and locks should ideally be ISI-marked and made of stainless steel

14.5 Aluminium Framework & Surface Treatment

- Alloy & Temper: Extruded aluminium alloys (e.g., Jindal 6063-T6 or equivalent) conforming to IS 733 and IS 1285 for structural and chemical composition.
- Framework Profile:
  - Main Mullions/Transoms: Minimum 75 mm × 45 mm extruded box section (minimum thickness 1.5 mm).
  - Door Frame Profile: Heavy-duty stile sections, typically 60 mm × 35 mm or 100 mm × 50 mm depending on door weight.
- Surface Finish:
  - Powder Coating: Epoxy polyester powder coating to a dry film thickness (DFT) of 40–60 microns.
  - Anodising: Anodic coating grade AC 10 or AC 15 (minimum 15–20 microns) as per IS 1868, in clear satin, champagne, or matt black finishes.

14.6 Door & Floor Spring System

- Door Shutter: To match partition frame; typically made with 85 mm × 44.5 mm × 2 mm thick vertical members and reinforced bottom rail.
- Floor Spring: Heavy-duty, double-action hydraulic floor spring (e.g., Dorma or Ozone make). Must feature:
  - Adjustable closing speed (130° to 10° and 10° to 0°).
  - Maximum weight capacity: 85–120 kg.
  - Stainless steel (SS 304) cover plate.
- Hinges/Pivots: Heavy-duty top and bottom pivots or 4" stainless steel flush hinges.

14.7 Acoustic & Glazing Specifications

- Glazing: 10mm or 12mm thick toughened safety glass, or 10.52mm / 12.52mm laminated acoustic glass.
- Acoustic Seal:
  - Drop-Down Seal: Automatic retractable acoustic drop-down seals (e.g., Reddiplex or Enviro seal) fitted at the bottom of the door.
  - Perimeter Gaskets: EPDM (Ethylene Propylene Diene Monomer) rubber gaskets in aluminium beads to eliminate glass-to-metal rattling and block flanking paths.
- Sealants: All joints and junctions between the floor/ceiling and aluminium channels must be filled with non-hardening acoustic/fire-rated silicone sealant.

14.8 Panels & Hardware (If Applicable)

- Solid Infill: If partial solid partition is used, typically comprised of 12mm thick pre-laminated particle board or MDF on both sides with an inner cavity packed with 48kg/m³ rockwool.
- Ironmongery: SS 304 D-handle, mortise lock, and lever handle

15.0 MODULAR FURNITURE WORKS

Manufacture, supply and installation of factory finished Desk based Workstations as per the drawing. Enclosed with following specification as mentioned below. The shop drawing of the same will have to be got approved from the Architect before execution. The bidder who is quoting should submit the Modular furniture Manufactures name along with the certificate which complies all green norms in his material used for the workstation which Manufacture should submit the Necessary Certificates.

15.1 MODULAR FURNITURE WORKS GENERAL SPECIFICATIONS

Manufacture, supply and installation of factory finished Desk based Workstations as per the drg. Enclosed with following specification as mentioned below. The shop drawing of the same will have to be got approved from the Architect before execution.

The Architect/Bank will direct to lowest bidder to show mock-up of 4 workstations module with all accessories of any 3 companies from the list submitted by the Contractor in technical bid of approved list at their own cost within 7 days from the date of work order.

Once the Modular Workstations approved the Contractor should place the order to Manufacture within 7 days from the date of approval and contractor should submit th copy P.O. to the Architect/ Bank.

The Modular Mfg. Company should deliver the all workstation in 5 weeks and install the workstation as per the phased manner. Only those Mfg who gives 5 years performance guarantee in writing and also the contractor should submit his performance guarantee.

Work station general specification is as mentioned below.

1) product is manufactured using renewable / recycled materials which are environmentally friendly.
2) Anodized aluminium that blends seamlessly into steel, wood and high strength Acrylonitrile butadiene styrene (ABS)
3) High pressure aluminium die-casting and weld less technology Each piece is interchangeable and can easily be reconfigured in endless permutation.
4) With every work station includes such as privacy screens, Flip ups, trays, Raceways & Modesty Panel.
5) The extensive array of textile accent colors, laminate finishes, and vibrant choice of glass screens, makes for a fresh- and young-looking office space.
6) The Cable management raceway below work surface with Data and Power. Vertical raceway and tray system - can also be accessed from above with Flip ups.
7) Adequate privacy is offered with fixed/movable screens between workplaces.

Work surfaces:

1) Work top shall be made of 25mm thick prelaminated particle board (Interior grade as per IS : 12823). The bottom should be finished with 0.60mm thick laminate. 2mm PVC edge lipping on all exposed edges. provide metal inserts below work top to fix supporting brackets, wire manager etc. Provide access flap 450mm x 150mm with soft close & brush for cable movements.
2) Laminate shades / Glass screens / colour on legs is approved by the Architect / SBI Engineer.
3) Two work surfaces could be joined back to back to avoid joints
4) “clear & strong polycarbonate Spacers” between the under structure and the tabletop, to have a floating look.

Metal perforated modesty panel

Providing & fixing 0.8mm thk.450MM high Metal perforated modesty panel in angular form on aisle side and in the centre for back-to-back work station and front side of linear work station provide & fix 1.5mm thk single skin metal panel 450mm high with vertical stiffeners to be stopped welded with modesty panel. Between modesty panel & floor 100mm clear space to be provided on aisle side and 250mm on middle portion of back to back work stations and linear work stations. Necessary support for slanted legs to be provided as mentioned in the drawing.

Supports:

1) Leg is made of “D” shape ERW Tube 60mm x 30mm x 1.60mm thick (16g) +/- 5mm subject to approval of Architect/ Engineer, which gets connected at the top by high pressure aluminium die cast connectors and fitted at the bottom by leg bush & levellers made of Acrylonitrile butadiene styrene (ABS).
2) An aluminium extrusion of genuine 6063 grade & a 40x25x1.6thk +/- 5mm subject to approval of Architect/ Engineer ERW tube both put together form a Beam & connect two individual verticals of “D” shape tube to form a complete leg.

3) provide and fix connectors with dual beam to take care of the bending stress if the length of the work surface is more.
4) The end supports to be provided for back-to-back tables.
5) The intermediate supports (where two tables are joined) to be shorter for adequate leg room while working.
6) The Legs for linear workstations (non-sharing) to be straight and tapered.
7) The Cross Beams are made of 40x20 mm ERW tubes 16G. +/- 5mm subject to approval of Architect/ Engineer
8) The cross beams and Legs to be joined through aluminium die cast connectors by using Hi Tensile Allen bolts.
9) All metal components to be powder coated to 50–60-micron thickness.

Cable Management:

1) MS Powder Coated cable tray with separator clips for power and data, Switch plate to mount the switches / sockets as per requirement. Vertical wire entry cover with removable metal cover between the intermediate legs for wire uptake to MS Cable Tray from floor and 450mm Aluminium Flip Up for switch access. All metal components are ceramic nano coated confirming to furniture standards. Depth of cable tray will be 90mm
2) Provide separation between data and Power cables
3) Data cable channel should accommodate 50 to 60 CAT-6 cables
4) provide and fix "clip on" raceway covers with opening either side. The covers can be of CRCA or PLB and The Tray type raceways are fixed to the work surface.
5) The switch/sockets are mounted on the Raceway covers as per the requirement. (3 Sockets + 1 Switch for UPS, 1 Sockets + 1 Switch for Raw Power + 2 I.O. for Data + 1 I.O. for Telephone)
6) Provide and fix Flip up box 150mm x 150mm Flip up Arrangement on work surface so 1 Switch & 1 Socket can also be accessed from the top. The depth of flip up should not be less than 130 mm.
7) The Raceways to be 50-60 microns powder coated.
8) Cable Trays can also be provided in lieu of the Raceways when the cable access is required from the top through ‘Flip ups”.
9) The size of box required to fix on cable tray should accommodate (3 Sockets + 1 Switch for UPS, 2 I.O. for Data & 1 I.O. for Telephone) The depth of Box should not be less than 130 mm.
10) For entry of cables from the floor into the raceways, Wire Entry covers to be provided which links the floor junction box to the raceway. The number of entry covers could be more than one per cluster depending upon the requirement. The standard size of the wire Entry covers should be 200mm in width with clip on MS covers finish with 50–60-micron powder coated. The wire entry covers at intermediate shearing legs or as per the direction of Architect / SBI Engineer.

Screens:

1) The screens to offered in four options- Glass, fabric, magnetic and composite.
2) The Glass screens should be 8mm thick in 5 different colours- White, Orange, Blue, Green and yellow. (The colour provided for glass the same colour to be provided to the frames of legs)
3) In case if fabric screens/Magnetic screens the thickness should be 12/18mm thick as approved by the Architect/SBI Engineer.
4) The Glass and Fabric screens to be mounted on the work surface by means of specially designed die cast Studs or fasteners. In Studs provide a gap of 15 mm between the screen and the work surface. in case fasteners the screens will be flush with the work surface complete as directed by the Architect/SBI Engineer.
5) provide and fix 2/3 number of studs depend upon length of screen.
6) The length of the screen will be as per the design- Normally a gap of 25- 100 mm gaps are provided from the ends of the table. The standard gap between screens- 150 mm.

7) Glass /Fabric / Magnetic END (Aisle side) screens – 12thk. These are mounted by using a detachable type End screen holder which is a high pressure die cast part. In this arrangement there will be a gap of 15mm between the screen and the work surface.
8) Glass /Fabric / Magnetic screens – 12thk. These are mounted by using detachable type Intermediate screen holders which is a high pressure die cast part. In this arrangement there will be a gap of 4mm between the screen and the work surface.
9) Provide and fix 8/10mm thick 450mm high back painted colour glass as approved by the Architect /SBI Engineer.
10) The Glass and Fabric screens are mounted on the work surface by means of specially designed die cast Studs or fasteners. Provide 15mm gap between glass and top surface of work station. The height of the screens will be 450mm in height and final height of the screens will be decided by the Architect/SBI after mock-up presentation at site. The glass / sandwich glass screens should adhere to all safety standards. The colour of the glass is as selected by the Architect/SBI Engineer. The back painted glass should look uniform in all side.
11) Provide sufficient studs for fixing the glass.
12) Standard gap to be provided between the glass should be 150mm and gap of 25 to 100mm from the end of the table.

12.1.3 Mode of Measurements

The Bank/Architect/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 Bank/Architect 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 Bank/Architect / 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 Bank/Architect / consultant shall be final.

All authorized extra work, omissions and all variations made shall be included such measurement.

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:

i) When openings are less than 45 cm in both the directions and less than 45 cm dia on the surfaces.

ii) When beams & wall plates do not have bearing over entire thickness of wall.

iii) 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.

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.

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

3.0 STRUCTURAL STEEL WORK:

3.1 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.

4.0 DOORS, WINDOWS:

4.1 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.

5.0 FLOORING, SKIRTING AND DADO:

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

6.0 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.

7.0 PAINTING AND COLOUR OR LIME WASH:

NOTE: All woodwork 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.

7.1 Net area of surface painted shall be measured in sq. mts. 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.

b) 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)

c) **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)

Standard General Rules

- All linear measurements are taken to the nearest 0.01 meter.
- All area computations are rounded off to the nearest 0.01 square meter.
- All cubic contents are computed to the nearest 0.01 cubic meter.
- Any scaffolding, specialized shoring, or protection work required to conduct repairs is either included in the item rate or measured separately depending on its height/girth.

8.0 Structural repairs and maintenance work

Structural repairs and maintenance work are typically measured net in the decimal system based on the nature of the work. General units of measurement include volume (cubic meters) for thick/mass works, area (square meters) for surface and thin treatments, weight (kilograms) for steel, and numbers (jobs/pieces) for items like fixtures or specific localized interventions.

8.1 Concrete and RCC Repairs (IS 1200 Part 2)

- Structural repairs / Patching work: Measured in cubic meters (m^3). Length, breadth, and depth are measured to the nearest 0.01 meter.
- Dismantling defective concrete: Also measured in cubic meters (m^3) based on volume of concrete taken out.
- Hacking concrete surfaces: Measured in square meters (m^2) of the surface area roughened to receive the new mortar/concrete.
- Dubbing out / Mortar applications: Measured in square meters (m^2), or in cubic meters depending on thickness and CPWD specifications.

8.2 Steel Work and Reinforcement (IS 1200 Part 8)

- Reinforcement Steel (Replacing/Adding rebar): Measured by weight in kilograms (kg) or quintals. The length is measured to the nearest 0.01 meter and multiplied by standard unit weights.
- Structural Steel (e.g., beams, columns, jacketing): Measured by weight in tonnes or kilograms.

8.3 Masonry Work (IS 1200 Part 3)

- Brickwork/Stone Masonry: Measured in cubic meters (m^3).

- Half-brick / Partition Walls: Measured in square meters (m^2), with the thickness specifically stated in the description.

8.4 Plastering and Repairs (IS 1200 Part 12)

- Plastering / Mortar Application: Measured in square meters (m^2). Deductions for openings apply as per standard rules.
- Crack Repair / Grouting: May be measured in running meters (meters) if it involves linear crack stitching/grouting or enumerated by the number of injection ports used.

8.5 Concrete Jacketing of Columns and Beams

- Concrete / Micro-concrete Volume: Measured in cubic meters (m^3) for the actual volume of new material cast.
- Shuttering / Formwork: Measured in square meters (m^2) of the contact area between the formwork and the concrete surface.
- Surface Preparation: Measured in square meters (m^2) for hacking, chipping, or sandblasting the old concrete surface to ensure a proper bond.

8.6 Polymer Modified Mortar (PMM) / Patch Repairs

- Thin Layer Patching: Measured in square meters (m^2) when the repair thickness is uniform (e.g., 10 mm to 20 mm). The thickness must be explicitly stated in the item description.
- Deep Structural Patching: Measured in cubic meters (m^3) or liters if the depth of the spalled concrete varies significantly across the structure.

8.7 Pressure Grouting (Crack Injection)

- Drilling and Fixing Nipples: Measured by number (pcs) of injection ports/grout nipples drilled and fixed into the cracks.
- Grout Material Consumption: Measured by weight in kilograms (kg) of the chemical (epoxy, polyurethane, or cementitious grout) actually injected.
- Crack Sealing / Routeing: Measured in running meters (m) for sealing the surface of the crack with epoxy mortar before injection.

8.8 Guniting and Shotcreting

- Application Area: Measured in square meters (m^2) of the structural surface covered. The average thickness of the shotcrete layer (e.g., 40 mm, 50 mm) must be specified.
- Rebound Loss Allowance: Usually built into the square meter rate rather than measured separately.

8.9 Fiber Reinforced Polymer (FRP) Wrapping

- Carbon / Glass Fiber Sheets: Measured in square meters (m^2) of the structural element wrapped.
- Epoxy Primer and Saturant: Usually included in the per-square-meter rate of the fiber wrapping item, but if billed separately, measured in kilograms (kg).

8.10 Anti-Corrosion Treatment for Rebars

- Rust Removal / Wire Brushing: Measured in running meters (m) of the exposed steel reinforcement diameter-wise, or included in the concrete chipping item.
- Inhibitor / Zinc-Rich Primer Coating: Measured in running meters (m) of the bar coated, categorised by the diameter of the reinforcement bar.

12.1.4 List of material Manufacturers

(The make listed below Should Be Approved by the Bank before use in execution)

List Of Make for Structural Repairing Work

Sr. No.	Description Of Materials	Brand / Manufacturer Name

1	Rust cleaner for reinforcement	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent.
2	Anti-corrosive Protecting Coating system for reinforcement	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent.
3	Non shrink additive and water proofing compo	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent.
4	Corrosion Inhibitor	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent.
5	Anchorage material for fixing rebars	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent. HILTI HY 200
6	Injection Grouting to arrest porosity	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika / Dr. Fixit or equivalent.
7	Bonding Agent for Concrete	Krishna Conchem/ ENAM/ Infinite option/ Sunanda/ BASF/ Sika/ Fosroc/ Rossary/ JSR/ Dr. Fixit or equivalent.
8	Polymer modified mortar	Krishna Conchem/ ENAM/ Infinite option/ Sunanda/ BASF/ Sika/ Fosroc/ Rossary/ Dr. Fixit or equivalent.
9	Micro-concrete	Krishna Conchem/ ENAM/ Infinite option/ Sunanda/ BASF/ Sika/ Fosroc/ Rossary / Dr. Fixit or equivalent.
10	Steel (TOR/HCRM/CRS)	TATA/Zindal/Vizag or equivalent
11	Expansion Joints	Pedilite / Krishna Conchem / Sika/ Fosroc/ Dr. Fixit or equivalent.
12	Curing Compound Acrylic Water Based	Krishna Conchem/ BASF/ Fosroc/ Sunanda/ Sika or equivalent.
List Of Approved Make for Civil Work		
1	Cement	Ultratech, Gujarat- Ambuja, Birla, Jaypee, Vasavdatta, A.C.C., Coromandal, L&T or equivalent
2	Brick	Ghole Bricks of Metric System or equivalent
3	Flush Shutter	Century, Anchor, Kit ply, Green or equivalent
4	P.V.C. Shutter/ U.P.V.C. Shutter	Sintex, Cactus, Yashpoly, Godr, Splendoor or equivalent
5	R.C.C. door Frame	Supriya Wonder wood/ As approved or equivalent
6	Aluminium Section for Sliding Window	Jindal, Indal, Hindalco or equivalent
7	Steel Window Sections	Ahmadabad or equivalent As approved
8	White / Colour Glazed Tiles (1st quality)	Nitco, Kajaria, Jonson & Johnson, Somani, RAK, AGL. or equivalent As approved
9	Ceramic Tiles/ Vitrified tiles	Nitco, Kajaria, Johnson & Johnson, Somani, RAK, AGL. or equivalent As approved
10	Red Oxide	Asian paints, Shalimar, Nerolac / Burger Indigo/Jotun or equivalent As approved.

11	Powder Distemper, Synthetic paint and O.B.D	First quality paint of Asian paints, Shalimar/ Nerolac /Burger/ Indigo / Jotun or equivalent as approved.
12	Water Proof Cement Paint	First quality paint of Asian paints, Shalimar/ Nerolac /, Indigo/Jotun / snowcem Topecem, Nitcocem or equivalent As approved.
13	Oil Paint	First quality paint of Asian paints, Shalimar/ Nerolac /Burger/ Indigo / Jotun or equivalent as approved.
14	Fully Acrylic Paint	First quality paint of Asian Paints / Shalimar / Nerolac /Berger/ Indigo / Jotun or equivalent as approved.
15	Neeru	Ishan gold with IS mark
16	T.M.T. bars	TISCO/ SRMB SAIL Rebars (Rastriya Ispat Nigam Ltd.)/ Vizag steel/ Jindal or equivalent as approved
17	Autoclaved Aerated Cement Block	Sipporex India, Aerocon, Ultratech Xtralite or equivalent
18	R.C.C. door Frame	Supriya Wonderwood or equivalent As approved
19	Admixture & Plasticiser	Cico/ Sica/ MYK Arment / kerakol / Fosroc or equivalent As approved
20	crack fillers	M/s Roff/Fosroc/pidilite or equivalent
21	White Cement	Birla, JK Cement or equivalent
22	Putty (Internal/ External)	Birla, JK White or equivalent
23	Ready mix Concrete	Lafarge /Godrej/ Ultratech or equivalent As approved
List Of Approved Make for Furnishing Work		
1	Toughened Glass	Saint Gobin/ Modi/ Asahi or equivalent
2	Door Hardware	Dorset/ Dorma/ Ozone/Enox/ Earl Bihari (EBCO) or equivalent
3	Toughened Glass Partition with Aluminium Frame (Modular)	Dorma, Otic, Jeb, Kubik, Redplus, Alloy or Equivalent as approved by the Architect / SBI Engineer.
4	Film On Glass Partition	3 M/ Garware / or equivalent
5	Commercial Plywood	Century, Anchor, Kitply, Green, Samrat, Kutirply or equivalent
6	Marine & BWP Plywood	Century, Anchor, Kitply, Green, Samrat, Kutirply or equivalent
7	Veneer	Century, Anchor, Kitply, Green, Samrat, Kutir ply Or Equivalent,
8	Sliding Folding Hardware	AS APPROVED BY THE ARCHITECT Dorma/Hettich/Hafle/Enox brand or equivalent

9	Cabin & Meeting Room Door	AS APPROVED BY THE ARCHITECT Dorma, Otic, Jeb, Kubik, Redplus, Alloy or Equivalent as approved by the Architect/ SBI Engineer.
10	2hr. Fire Rated Hollow Metal Doors	Matrix, Shakti met, Novair, JC FIRE or equivalent
11	Acoustic Decorative Tiles on Wall	Knauf, Armstrong, Saint Goblin or equivalent as approved by the Architect/ SBI Engineer.
12	Mineral Fibre False Ceiling	Knauf, AMF, Danoline or equivalent
13	Classic Axiom Perimeter Trim 50MM HT	Knauf, AMF, Danoline or equivalent
14	Gypsum False Ceiling	Saint Gobain, India Gypsum
15	40MM Thk Baffles in Multiple Colours	Saint-Gobain Ecophon, Gypsonite, Credence, Techno Acoustic, Acoustical Surfaces, or equivalent
16	Decorative Soundscape Clouds	Saint-Gobain Ecophon, Gypsonite, Credence, Techno Acoustic, Acoustical Surfaces, or equivalent
17	Roller Blind With Blackout	Honeycomb / Marvel / Vista / Mac / Gaalicha or Equivalent Make
18	False Flooring	Tankaria or Equivalent
19	Raceways Junction Boxes And Conduits	Bansali / Jindal / Dilwari or equivalent or as approved by the Architect/SBI Engineer.
20	Flush Shutter	Century, Anchor, Kitply, Green, or equivalent
21	P.V.C. Shutter/ U.P.V.C. Shutter	Sintex, Cactus, Yashpoly, Godrej, Splendoor, or equivalent
22	Aluminium Section for partitions Frame Work	Jindal, Indal, Hindalco, or equivalent
23	G.I. pipe	Tata, Zenith, Surya, Siddhartha, GNT Gujarat tubes, or equivalent
24	G.I. fittings	Tata, Zenith, Surya, Siddhartha, GNT Gujarat tubes , or equivalent
25	Night Latch	Godrej/ Yale/ Door safe or equivalent
26	Glass	Indo Asahi Glass/ MODI/ SAINT GOBAIN, or equivalent
27	Tapered Edge Gypsum Plain Board	India Gypsum or equivalent
28	ACP Panels	Aluco bond, ALU Décor, Alstrong, Alstone, or equivalent
29	Acrylic Sheets	Sanmati Acrylics, Acrylic Sheet India, Acry Plus, or equivalent
30	Wooden Flooring	Pergo, Xylox, Armstrong, Vista, or equivalent
31	Laminates	Archid, Aerolam, Greenlam, Century, Royal Touch, or equivalent
32	Wood	First Class C.P. Teak Unless otherwise specified or equivalent

33	Soft Wood	Kail Wood, Hollock or equivalent
34	Butt Hinges	ISI Marked Hinges
35	Cement Board/Partical	Bison Boards/Nowud boards or equivalent
36	GI / M.S Pipes (IS : 1239 and IS : 3589)	Jindal, Tata Steel, Hi-tech or equivalent
37	Pipe clamp & supports	Mupro, Kanwal Industrial, Corporation Mungo, or equivalent
38	Drawer Sliding Fittings	Earl Bihari (EBCO)/ Godrej/ Hettich/Heffle or equivalent
39	Floor Spring / Door Closure	Godrej /Hardwyn /Hyper or equivalent
40	Triple Computer monitor mount/stand arm	Vivo/ Dell/ HP or equivalent
41	Texturized Interior Paint	Asian, Sandtex Matt/ Dulux/ Berger or equivalent
42	Readymade Computer Drawer	Ebco/ Hettich/ Blum or equivalent
43	ACP Panels	Aluco bond/ ALU Décor/ Alstrong/Alstone or equivalent
44	Acrylic Sheets	Sanmati Acrylics/Acrylic Sheet India/ Acry Plus or equivalent
45	Mortice lock, Handle	Godrej/Doorset or equivalent
46	Door Closer, Floor Springs	Everite/Doorking/Hardwyn/Dorma or as approved by the Architect or equivalent
47	M.S / Brass Screws	Nattle fold or equivalent
48	Mild Steel for Fabrication	Tata/Sail or equivalent
49	Ceramic floor Tiles (antiskid)	Kajaria/Somany/ Johnson/ Nitco/Simpolo or equivalent
50	False Flooring	Unifloor /Flexi Access Floor/Armstrong or equivalent
51	Laminates (1.00mm thk.)	Royale touch/Century / Green lam/ Archid or Equivalent
52	Modular Furniture	Tran steel / Godrej/ Featherlite / SOS/ or Equivalent

Notes: -

1) Besides the above makes, Bank 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 BANK before placing order for any specific materials. BANK 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 BANK.

5) 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 BANK. The same will not be considered for payment.

12.2 TECHNICAL SPECIFICATION & SCOPE OF ELECTRICAL WORKS

SAFETY MEASURES:

1 First aid appliances including adequate supply of sterilized dressing and cotton wool shall be kept in a readily accessible place.

2 An injured person shall be taken to a public hospital without loss of time, in cases when the injury necessitates hospitalization.

3 Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from the ground.

4 No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm. (clear) and the distance between two adjacent running shall not be more than 30 cm. When a ladder is used an extra mazdoor shall be engaged for holding ladder.

5 The excavated material shall not be placed within 1.5 meters of the edge of the trench half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.

6 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 one meter.

7 No floor, roof or other part of the structure shall be so overloaded with debris or material as to render it unsafe.

8 Workers employed on mixing and handling material such as asphalt, cement, mortar, concrete and lime shall be provided with protective footwear and rubber hand gloves.

9 Those engaged in welding works shall be provided with welders' protective eye shield and gloves.

10. (i) No paint containing lead or lead products shall be used except in the form of paste readymade paint.

(ii) Suitable facemasks should be supplied for use by the workers when the paint applied in the form of spray or surface having lead paint dry rubbed and scrapped.

11. Overalls shall be supplied by the contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during cessation of work.

12 Hoisting machines and tackle used in the works including their attachments anchor and supports shall be in perfect condition.
The ropes used in hoisting or lowering material or as a means of suspension shall be durable quality and adequate strength and free form defects.

TECHNICAL SPECIFICATIONS FOR ELECTRICAL INSTALLATION WORK

SCOPE OF WORK: -

The Electrical Contractor's scope of work covers the following: -

Supply, testing prior to installation, testing after installation of electric meter/s and other installation and commissioning the complete Electrical Installation work associated with power supply system, lighting and domestic appliances, concealed wiring network as directed, earthing and lightning protection system, installing Heavy Gauge PVC / Black enamelled H.G. threaded conduits suitable for heavy mechanical stresses, concealed / open in slabs, walls / shafts, as required for Electrical wiring, telephones network and TV cable system for distribution in flats, basement, stilts etc., installing telephone and T.V. outlet boxes as required including fish wire. Telephone wires and co-axial cable for T.V. outlets from the shafts as directed, alternate Emergency Power Panel including stand-by Diesel Generator Set and power supply network from this alternate stand-by D.G.Set, installation of fixtures and fittings issued by the Client or as ordered in B.O.Q. after testing, including holding their safe custody until handing over of the installation to the Clients, power supply to Domestic water pumps, fire pumps and any other related works for completion of the Building for its occupancy, Liaisoning with Electric Supply Company and / or Concerned Authorities and getting the installation approved by them and installation of electric meter/s is also included in the scope of Contractors work.

DRAWINGS, SPECIFICATION AND DEVIATIONS: -

The drawings and specification lay down minimum standards of equipment and workmanship. Should the tenderer wish to depart from the provision of the specification and drawings either on account of manufacturing practice or for any other reasons, he should clearly draw attention in his tender to the proposed points of departure and submit such information, drawings and specifications as will enable the relative merits of the deviations to be fully appreciated. In the absence of such information on the deviations, it will be deemed that the tenderer is fully satisfied with intents of the specification and drawings and their compliance with the statutory requirements, all the relevant I.S. Codes, I.E. Rules, Local Codes as governed by the Concerned Electric Supply Company, N.E.C. Electrical Inspector, etc.

The Contractor shall prepare fabrication and working drawings as well as concealed / open conduits layout drawings which will be got approved from the Clients prior to execution and all work shall be to the approved working drawings. Approval of these drawings does not relieve the Contractor of his responsibility to meet the intents of specifications. All such drawings for approval are to be submitted in triplicate to the Bank.

After virtually completing the work, the Contractors should submit AS BUILT drawings of all systems in triplicate along with his Final Bill.

SCOPE: -

The Scope of work shall cover the supply, installation and commissioning of all the power panels, incorporating circuit breakers, switch fuse units, busbars, interconnections, earthing etc., meeting the requirements shown in equipment schedule and the drawings.

Entire works shall comply with the latest issue of following standards, rules, codes of practice, unless specified otherwise in the specific requirements.

STANDARDS:-

The following standards and rules shall be applicable:-

IS : 2516		Specification for A.C. circuit breakers.
IS : 4047		Specification for heavy duty air breaker switch gear and fuses for Voltage not exceeding 1000 V.
IS : 3072		Code of practice for installation and Maintenance of Switch gear.
IS : 3106		Code of practice for selection, installation and maintenance of fuses (Voltage not exceeding 650 V).
IS : 4237		General requirements for switch gear and control gear for voltage not exceeding 1000 V.
IS : 2607		Air brake isolators for voltage not exceeding 1000 V.
IS : 8623		Specification for factory-built assemblies of switch gear and Control gear for voltage up to and including 1000 V. A.C. and 1200 V. D.C.
IS : 375		Marking arrangement of switch gear bus-bars main connections and auxiliary wiring.
IS : 694		PVC insulated copper wires for 650 / 1100 Volts grade.
IS : 1554		PVC insulated (heavy duty) electric cables for working voltages up to and including 1100 Volts.
IS : 3961		Recommended current rating for cables.
IS : 732		Codes of practice for electrical wiring.
IS : 2274		Installation (system voltage not exceeding 650 Volts).
IS : 12360		Voltage bands for electrical installation.
IS : 2309		Protection of building and allied structures against lighting.
IS : 4648		Guide for electrical layout in Residential Building.
IS : 1646		Fire Safety of Buildings.
IS : 5216		Guide for Safety Procedures and Practices in Electrical Work.
IS : 3043		Code of practice for earthing.
IS : 4047		Climate proofing of electrical equipment.
IS : 2147		Heavy duty air-break switches and
IS : 4064		Composite units of air-break switches and fuses for voltages not exceeding 1000 Volts.
IS : 4237		general requirements of switchgear and control gear for voltages up to 1000 Volts AC or 1200 Volts DC.
IS : 2208		HRC cartridge fuse domestic and similar purpose.
IS : 5133(I)		Boxes for enclosures of electrical accessories.
IS : 3854		Heavy duty air-break switches and
IS : 3452		Switches for domestic and similar purpose
IS : 371		Three terminals ceiling roses
IS : 1293		Switch socket outlet.
IS : 8828		Miniature air-break circuit breaker for A.C. circuits
IS : 2312		Exhaust Fans
IS : 374		Ceiling fans and regulators
IS : 2082		Storage types electrical water heaters.
IS : 3725		Call bells and buzzers for indoor use.

IS : 2266		Luminaires, ballasts, maintenance and safety requirements.
IS : 1913		Tubular poles for overhead power lines & street lights.
IS : 2713		Danger notice plates
IS : 2551		Rigid PVC conduits for electrical wiring
IS : 9537		Part II : Rigid M.S. conduits
IS : 3480		Flexible steel conduits for electrical wiring.
TD-S-113-18		Code of practice by India Telephone – Department.
IS : 4984		HDPE pipe and fittings.
113B		PVC insulated, colour coded, twisted into paris, laid-up taped and overall.
BS : 6746		PVC sheathed telephone cables
IS : 1554		Revised code of practice for telephone wiring of multistoried Buildings – 1985.

TELEPHONES :

Codes of practice of Indian Standards or relevant British Standards in the absence of Indian Electricity Act and Rules National Electrical Code, Local Regulation prevalent in Maharashtra or the state which work-site exists, Regulations of Fire Insurance – Tariff Advisory Committee, Regulations and Standards of Mahanagar Telephone Nigam Ltd., etc.

SYSTEM DETAILS :

Entire electrification work and its associated accessories shall be designed for the system data given hereunder.

Rated System Voltage		415 Volts (+/-) 10%, 3 – Phase, 4 Wire.
Rated System Frequency		50 Hz (+/-) 3%
Rated System Fault level		35 MVA at 415 Volts symmetrical
Highest System Voltage		456 Volts r.m.s. line to line at 415 Volts.
Rated Lighting Control		250 Volts, 1 – Phase, 2 Wire and earth,
System Voltage		50 Hz
System Earthing		Effectively earthed neutral.

All material and its associated accessories shall also be designed to withstand for the desired services due to fluctuations in supply voltage and variation in frequency as permissible under Indian Electricity Act and Rules.

CUBICAL BOARDS:

All boards shall be combination of 14 & 16 SWG sheet steel, free standing, extensible totally enclosed. Dust-tight, vermin-proof cubical, flush dead front and modular construction suitable for 3 phase, 415 V, 4 Wire, 50 Hz system. All boards shall be accessible form the front for the maintenance of switches, Bus-bars, cable terminations, meters etc. Cables shall be capable of entering the board both from top as well as from bottom. All panels shall be machine pressed, with punched openings for meters etc. All sheet steel shall be rust inhibited through a process of degreasing, acid pickling, phase phating etc. The panels shall be finished with two coats of synthetic enamel paint of approved colour over one coat of red oxide primer. Engraved plastic labels shall be provided indicating the feeder details including the size of the incoming / outgoing cables, capacity and danger signs.

Earthling:

All switches' panels shall be provided with an earth bar as specified earthing of the switch boards shall be through the equipment earthing system provided in the

building. All meters shall be calibrated and tested through secondary injection tests.

All field tests shall be witnessed by Client's representatives; lost certificates shall be furnished by the Contractors.

Installation:

All panels shall be supported on MS Channels incorporated in the panel during the fabricating. All such supports shall be coated with primer followed by two coats of approved synthetic enamel colour paint. After completion of the work, all panels shall be touched up for damaged painting. All work shall be carried out as per IS: codes, I.E. Rules, NEC.

All panels shall be megarad at phase and phase to Neutral using 1000 V meggar with all outgoing feeders in closed position. The meggar value should not be less than 2.50 megohms between phases and 1.50 megohme between phase and neutral.

Fabrication drawings of all panels shall be submitted by the Contractor to the Clients in triplicate and they shall proceed for fabrication after Client's approval.

Testing and Inspection:

All switch boards shall be factory inspected before finishing and dispatch, with the Clients representatives.

Certificate for all routine and type tests for circuit-breakers in accordance with IS:2516-1963 shall be furnished from the manufactures. In addition, all panels shall be meggared phase to phase and phase to Neutral, using 1000 V meggar with all the switchgear in closed position. The meggar value should not be less than 2.50 megohms between phases and 1.50 megohms between phase and Neutral.

Distribution Board:

Scope:

The scope of work shall cover supply, installation, testing and commissioning of lighting and power distribution boards. Associated civil work required for the erection of the D.B.S. is also included in the scope of this contract.

Standards:
The following standards and rules shall be applicable:

1)	IS : 2675 – 1983		Enclosed distribution fuse boards and cutouts for Voltage not exceeding 1000 V
2)	IS : 375 – 1963		Marking and arrangement of switchgear busbars main connections and auxiliary wiring.
3)	IS : 8828 – 1978		Miniature circuit-breakers
4)	IS : 2607 – 1976		Air-break isolators for Voltage not exceeding 1000 V
5)	IS : 9926 – 1981		Fuse wire used in rewirable type Elec. fuses up to 650 V.
6)	Indian Electricity Act 1910 and Amendments issued there under		

All codes and standard mean the latest, where not specified otherwise, the installation shall generally follow Indian Standards Codes of Practice and the relevant British Codes of Practice in the absence of Indian Standard.

Distribution boards along with the controlling M.C.B.s, Fuse or Isolator as shown be fixed in an M.S. Box, suitable for recessed mounting and in wall. D.B.S. should be factory made from the standard “approved” manufactures and not fabricated by the tenderer. D.B.S. shall be made of 16 SWG sheet duly rust inhibited through a process of degreasing, acid pickling, phosphating and spray painted or powder coated to an approved colour over a coat of red oxide primer. Three phase boards shall have phase barriers and wire channel on three sides. Neutral bars shall be solid tinned copper bars with tapped holes and chase headed screws. For three phase D.B.S. 3 Nos. independent neutral bars shall be provided.

There shall be earth busbar of adequate size provided separately to terminate all outgoing circuit earth wire conduit knockouts shall be provided as required / shown on drawings and entire board shall be rendered dust and vermin proof and shall have conduit knockout entry.

MCBs shall have quick make and break non-welding self wiping alloy contacts both on the manual and automatic operation. Each pole of the breaker shall be provided with inverse time thermal overload and instantaneous over current tripping elements, with tripping must be on all the poles and operating handle must be common. Breakers must conform to MBS 3871 with facility for locking in off position. Pressure clamp terminals for stranded / solid conductor insertion are acceptable upto 4 sq.mm. aluminum of 2.5 sq.m.. copper conductors and for higher conductor sizes the terminal shall be suitably shrouded. Wherever MCB isolators are specified they are without tripping elements.

Distribution Boards shall have MCBs as shown on the drawing / schedule. D.B.S. shall meet with the requirements of IS:2675 and marking arrangement of Bus-bars shall be accordance with IS: 375, Bus-bars shall be suitable for incomer switch rating and sized for a temperature rise of 35 Centigrade over the ambient temp. circuit diagram indicating the distribution shall be pasted on the inside of the DB s instructed. One earthing terminal for single phase and two terminals for 3 phase D.B.S. shall be provided with an earth strip connecting these earthing studs / terminals and the outgoing ECC earth bar. All MCBs shall be with a minimum short circuit rating of 10 Kamps. All outgoing feeders shall terminate or by means of insulated single conductor copper wires.

All termination shall be carried out by using crimping type ferrules or reducer type terminal lugs.

Installation and Testing:

All distribution boards shall mounted as directed either recessed or on adequate size of angle iron frame work in case they are to surface mounted. All mounting frames shall be coated with one coat of red oxide primer followed by two coats of synthetic enamel paint of approved colour, after installation. All D.B.S. shall touched up for damaged painting. All work shall be carried out as per NEC.

All boards shall be meggard phase to phase and neutral, using 1000 V mega with all switchgear in close position. The meggar value should be not less than 2.50 megohms between and 1.50 me ohms between phase and neutral. E.L.C.B. (Earth Leakage Circuit Breaker) :

The E.L.C.B.s shall have leakage sensitivity of 30 ma / 30 Secs and shall have a short circuit current rating equal to that of MCB i.e. mini. of 10 KA. Current rating and No. of poles shall be as described in the B.O.Q. / Drawing. A test push knob facility shall be provided to periodically test the operation of E.L.C.B.s.

Medium Voltage Cabling:

Scope:

The scope of work shall be cover supply, laying, connecting, testing and commissioning of medium voltage power cables inclusive of all labor.

Standards:

The following standards and rules shall be applicable:

1) IS : 1554 (P-I)		PVC insulated electric cables (heavy duty)
2) IS : 1753		Aluminum conductors electric cables (heavy duty)
3) IS : 3961		Recommended current ratings for cables
Indian Electricity Act and Rules		
NEC		

All codes and standards mean the latest. Whereas not specified otherwise, the installation shall generally follow Indian Standard Codes of Practice and the relevant British Codes of Practice in the absence of Indian Standard.

Cables:

All cables shall be 1100 Volt Grade, PVC insulated and extruded inner sheath with or without steel armoring as specified and with an outer PVC Protective sheet. Cables shall have high conductivity stranded aluminum or copper conductor as specified. Cores shall be colour coded as per Indian Standard.

All cables shall be new without any kind of visible damages. The manufactures name, insulating material, conductor size, voltage class and ISI mark shall be embossed on the surface of the cable at every 600 mm. centers.

Installation:

Cables shall be laid in the routes marked in the drawings, where the route is not marked, the Contractor shall mark it out on the drawing and also on the sire and obtain the approval of the Bank before laying the cable. Procurement of cables shall be on the basis of actual site measurements and the quantities shown on the schedule of work shall be regarded as a guide. Payment shall be restricted to the quantity of cable installed (and measured jointly as per unit stated) at site. Cables rising indoors shall laid on walls, ceiling, shafts or trenches. Cables shall be fixed to walls or ceiling with supports saddles. Cables trays will be used wherever directed / necessary. All supports shall be at not more than 500 mm. apart. Plastic identification tags shall be provided at every 20 M in general at every floor in the rising shaft in particulars. Oversize M.S. Sleeves shall be used for cables passing through the walls. Cables shall be bent to a radius not less than 12 times the recommendations, whichever is higher, in case of direct buried cables the cable route shall be parallel or perpendicular to roadways, walls cushion to provide cushion against abrasion. Width of excavated trenches oversand cushion shall be covered with a mini. of excavated trenches will be as per drawings or as directed. The laid cables in protective layer of bricks on both sides and top. Backfill of the trench shall be with a minimum earth cover of 600 mm. to be properly rammed and consolidated. At road / pathway crossings cables have a pulled through R.C.C. pipe of 150 mm. dia. to be laid for each cable by the Electrical Contractor. A mini .of 100 mm. thick concrete bed has to be spread before laying the RCC pipes, topped by 150 mm. thick concrete to avoid any damage to the RCC pipe.

The cables shall be provided with cable route markers at every 20 meters and also at every in the direction of the route.

All cables shall be full runs from panel to panel without any joints or splices. A minimum of Eight (8) M loop shall be provided at each end of every cable. Cables shall be identified at end terminations indicating the feeder number and the Panel / Distribution Board from where it is being laid. All cable terminations shall have tinned copper compression lugs. Cable terminations shall have necessary Brass glands. The Brass glands and armoring shall be earthed at both the ends of the cable. The end terminations shall be insulated with a minimum of six half lapped layers of PVC taps.

Testing :

MV cables shall be tested before and upon installations with a 1000 V meggar and the following established.

Continuity on all phases.
Insulation Resistance a) Between conductors.
b) Between all conductors and ground.

All test reading shall be recorded. Cables will be charges only after the above reading are found to be satisfactory.

Mode of Measurement:

Cables will be measured on the basis of unit length and shall include the following:
Cables, clamps, supports and spacers.
Installation, testing and commissioning.
Cable marking.

Each cable termination will be measured as one unit for payment.
Cable glands, lugs, bolts, nuts.
All joining materials.
Installation, testing and commissioning.
Earthing of glands and armor.

Cables buried underground will be measured on the basis of unit length and paid for unit rates and shall include.
Excavated and backfilling as described above.
Sand for cushioning and protective bricks.
Cable route markers.

C.T.S. Wiring:

Scope:

The scope of work shall cover supply, installation, testing and commissioning of all C.T.S. wiring work.
All size of teak-wood battens should be varnished before fixing on the wall. The batten should be from good teakwood battens and should not have any knot in between, varnishing of batten is to be done on all sides. As far as possible overlapping of the battens should be avoided by providing the bridge. The wires should be fixed with appropriate types of tinned brass joint clips at every 2” to 2.5 distance. The teak-wood wires shall be fixed nettle fold screws and not by nails. Earthing wires shall be stranded copper conductor with Green / Yellow – Green colour insulation of 440 V Grade.

Conduits Wiring:
Scope:

The scope of work shall cover supply, installation, testing and commissioning of all conduit wiring. All works shall be carried out as per NEC.

Standards:
The following standards and rules shall be applicable:

1)	IS : 732		Code of Practice for Electrical Wiring installation (System voltage not exceeding 650 V)
2)	IS : 1646		Code of Practice for fire safety of buildings (General Electrical installation (Part II).
3)	IS : 9537		Rigid steel conducts for Electrical wiring (Part II)
4)	IS : 2667		Fittings for rigid steel conducts for Electrical Wiring.
5)	IS : 3480		Flexible steel conduits for Electrical Wiring.
6)	IS : 3837		Accessories for rigid steel conduit for Electrical Wiring.
7)	IS : 694		PVC insulated cables
8)	IS : 9537		Rigid non-metallic conduits for Electrical Wiring
9)	IS : 6946		Flexible (pliable) non-metallic conduits for Electrical Wiring
10)	IS : 1293		3 – Pin plugs and sockets
11)	IS : 8130		Conductors for insulated electric cables and Flexible cods.
12)	IS : 5133		For switch boxes and other conduit accessories
13)	Indian Electricity Act 1910 and Amendments issued thereunder		
14)	Regulations for the electrical equipment in buildings issued by the Mumbai Regional Council of Insurance Association of India.		

Rigid and Flexible conduits.

All conduits shall be heavy gauge black enameled mild steel or galvanized steel or as specified in schedule of works. Conduits shall be with ISI mark.

Flexible conduits shall be formed from a conditions length of spirally wound inter locked strip steel with a fused zinc coating on both sides. The conduit shall be terminated in brass adaptors.

Accessories:

Conduit fittings such as bends, elbows, reducers, chase, nipples, split couplings, plug, etc., shall be specifically designed and manufactured for their particular application. All conduit fittings shall conform to IS: 2667 – 1964 and IS: 3887 – 1966. Conduit bends and elbows shall not be used. Instead, wherever bending is required, the conduit shall be properly bent using the bending machine. Only in unavoidable conditions, use of bends and elbows may be permitted.

Cast iron round junction boxes used for light and fan points shall be normally 75 mm. deep in case of slabs and 50 mm. deep in case of walls. Bottom of the junction boxes shall be flush with wall / bottom of the slab. The fabricated junction boxes shall be 1.60 mm. thick and of suitable dimension and minimum 75 mm. deep. Other dimensions shall be as per IS:5133. These boxes may be used for light / bell point in walls. Theses boxes shall be galvanized M.S. boxes. Check nuts shall be used on either side of the box for conduits. At conduit entry, bushes shall be provided to avoid cutting of insulation of wires.

Notes of Concealed Conducting:

Routing of concealed conduits Location of conduit drop or rise in walls, location of junction boxes, vertical surface conduit runs in shafts etc. Wherever shown on the drawing is schematic only. Adjustments / Re-routing of the same shall be carried out

by the Contractor to suit layout of lighting fixtures, ceiling fans, receptacles, telephone outlets, TV outlets room switch boards etc., shown on relevant drawings and to suit site conditions.

Passing of embedded conduit through columns for any reason whatsoever is totally prohibited, except in any of the really unavoidable situation, where Structural Consultants express permission in wiring will be a must before so doing.

Cross over of embedded conduit in slab, except at locations unavoidable should not be done, in case of cross-over of conduits where it is a must, the contractor shall obtain the specific permission for the location of cross-overs from the Consultant prior to concerning the slab.

Conduits droppers in columns shall not be permitted.

Concealed conduit running along the length of beam is to be avoided. Suitable conduit sleeves shall be provided in lintel beams where conduit droppers are required to be extended through such beams.

Standard typical details shall be referred for concealed conduit routing through sunk slab through staircase, walls, etc., and for provision of junction boxes, wherever required.

Conduit routing at Lift Machine Rooms and at Lift Wells shall be installed in consultation with Elevator Contractor.

The Contractor shall select the routes of surface conduiting in such a way that embedded conduits laid during civil works need not be punctured. In case embedded conduits get damaged, it shall be the responsibility of the Contractor to rectify the defective work at his own cost.

All conduit shall be of 25 mm. nominal bore except specified otherwise.

Bending radius of concealed conduit shall not be less than ten times the outside diameter of the conduit. Maximum distance between two junction boxes shall not be more than four meters.

Cast iron junction box for fan hooks shall be at appropriate location so as to avoid interference.

Conduit sleeves with threaded projections (50 mm.) shall be provided at suitable locations in Auxiliary Beams, Lintel Beams to facilitate extension of conduits in walls.

Junction boxes, conduits etc., shall be suitably tied to reinforcing bars in slabs to avoid displacement and misalignment. Minimum 25 mm. thick concrete cover around conduit / junction box shall be ensured.

To facilities pulling of wires / cables, pull-out wires shall be provided in each length of conduit to be concealed. Also all open faces of junction boxes and open ends of conduits shall be suitably plugged or covered by the Contractor with care to avoid ingress of stones / sand / concrete mix etc. into junction boxes / conduits during pouring of concrete. Similar care must be taken at the locations where couplers etc., are used for extension of conduit.

During civil works, Contractor shall arrange to provide conduit sleeves (of adequate

size and adequate in number) at ceiling level or walls for the passage of surface – conduits so as to avoid routing of conduits along the beam contours at a later stage. Co-ordination in this regard shall be Contractor's responsibility.

Supply and installation of 150 mm. / 250 mm. dia. Hume pipes for main power cable, for earthing conductors and for direct line telephone cables shall be in Contractors scope. These pipes shall be laid in typical standard details as directed to avoid damage to these pipes.

Two Nos. earth electrode stations shall be provided for general earthing system of the buildings to be located to suit site conditions. Distance between two earth electrode stations shall not be less than 3.5 meters and that between the outer edge of plinth protection of the building and earth electrodes shall not be less than 2.00 meters.

Wiring :

All wires shall be single core stranded copper PVC insulated to IS: 694 and shall be 1100 V Grade. All wires including earth wire shall be terminated using crimping type ferrules or lugs. Earthing shall be of stranded copper conductor with Green or Yellow Green insulation of 440 V Grade with ISI Mark.
All wires shall be colour coded as follows:

Phase		Colour of Wires
R		Red
Y		Yellow
B		Blue
N		Black

Earth Green (insulated) (if any) Grey.

All wires shall be with ISI Mark.

Installation:

All works shall be carried out as per National Electrical Code. The size of conduits shall selected in accordance with the number of wires permitted table given below:

Note: Even though 20 mm. dia. conduit is indicated in the table.
Contractor has to use minimum size of the conduit of 25 mm. dia. unless otherwise indicated. Size of wires shall be not less than 1.5 sq.mm.

Nominal Cross Section & Area (Sq.mm.) of wire.	20 mm.	25 mm.	32 mm.	40 mm.	No. of Strands Dia. in mm.
1.50	6	10	14	---	3/0.80
2.50	5	10	14	---	3/1.04
3.5 Lakh	3	6	10	14	7/0.85
6.00	2	5	9	11	7/0.04
10.00	---	4	7	9	7/1.35
16.00	---	2	4	5	7/1.70

The above table is applicable for both straight as well as deviated runs.

Conduits shall be kept at a minimum of 100 mm. from the pipes of other Services such as T.V., Telephones etc., Pull / Junction Boxes shall be provided for straight conduit runs of more than 10 meters and also for deviated runs with more than 3 Nos. of 90 bends.

Separate conduits / raceways shall be used for

Normal lights, and 5 A – 3 pin sockets on lighting circuits.
Power outlets: 15 A – 3, 20/A 30 A 2 pin + scraping earth metal clad socket.
Separate conduit runs shall be used for incoming and outgoing circuits.
Wires of various circuits but of different phases.

Conduits run in the slab shall be properly laid, fixed to the reinforcement bars, before concerning of the slab all conduit entries shall be properly blocked or sealed to avoid ingress of concrete slurry.

For vertical conduits drops in the wall proper chasing shall be carried out and conduit laid and fixed, chase restoration shall be done after installing the 24 SWG G.I. wire mesh over the chase and after which plastering shall be carried out to give a neat smooth finish.

As far as possible horizontal chase in the wall shall be avoided. If unavoidable, it shall not exceed 300 mm.
All final branch circuits for lighting and appliances shall be single core stranded copper conductor cable run inside conduits. The conduits shall be properly threaded and screwed into sockets junction boxes etc. or fixed properly, using epoxy so in, in case of PVC pipe. The exposed threading shall be given a coat of rust inhibiting chemical / paint.

Branch circuit conductor sizes shall be as shown in schedule of quantities and / or drawings.

Final branch circuits shall preferably be kept in a separate conduit up to cct. Branch distribution boards. No other wiring shall be bunched in the conduit except those belonging to the same phase. Each lighting branch circuit shall not having more than ten (10) outlets or 800 watts whichever is lower.

Flexible cords for connections to appliance, fans and pendants shall be 650 / 1100 V Grade (three or four cores i.e. with insulated neutral and earth wires of the same size) with stranded copper wires insulated twisted and sheathed. Colour of the sheath shall be subject to Architect's approval.

Looping system of wiring shall be used. Wires shall not be jointed. Where joints are unavoidable, they shall be made through approved mechanical connection. Earth wire shall be provided fir all light, fan, bell and socket points, control switches having marking for light or fan as required shall be connected in the phase conductors only and shall be ON when knob is down. Unless otherwise stated, switches shall be fixed in 3 mm. white colour Hylam sheet on M.S. Boxes with cover plate as specified. Chromium plated brass screws shall be used. M.S. switch boxes for switch board shall be of sufficient dimensions to accommodate required no. of choke type fan regulators for flush mounting or electronics regulators as the case may be.

M.S. Boxes shall be fabricated from 1.6 mm. thick M.S. sheet and shall be galvanized. Switch boards accommodating 3 or more than 3 switches shall be provided with slide-in fuse holder of 10 Amps. Rating and proper rating fuse-wire.

Power wiring shall be distinctly separate from lighting circuit, M.S. conduits not less than 2.5 mm. and wires not less than 2.5 sq.mm. shall be used for power wiring. Wire size for circuits will be as per schedule of quantity.

Earthing :

Scope :

This item of work is required for providing the earth-pits for electrical power network and also for lighting protection network. Earth pits for power network and lighting protection network shall be separate from each other without any interconnection. However, all Earth pits for power supply shall be interconnected with each other through buried earth conductors, similarly all earth pits for lighting protection shall be connected with each other through buried earth conductors. Spike earthing for St. Light poles is also covered. Each down common conductor of lighting protection network shall be terminated to a separate earth electrode pit through test-link. Standards :

The following Standards and rules shall be applicable

IS : 3043 – 1987 Code of Practice for earthing.
Indian Electricity Act and Rules Electric Supply Co.'s Rules.
NEC.
IS : 2309 – Protection of building and allied structures against lighting.

All codes and standards mean the latest. Where not specified otherwise, the installation shall generally follow the Indian Standard Code of Practice. In the absence of Indian Standards, the relevant British Standard Codes shall be followed.

General Requirements:

The earthing shall generally carried out in accordance with the requirements of I.E. Rules as amended from time to time and relevant regulations of B.E.S.T / Electric Supply Company, If Rules No. 32, 51, 61, 62, 67, 69, 88(2) and 90 are particularly applicable.

All earth connections shall be carefully made visible for inspection and testing of individual earth electrode shall be possible.

The earthing electrode shall be away at a minimum distance of 2 mt. From the outer surface of plinth protection / Diaphragm wall in case of basements. A minimum clearance of twice the depth of electrode shall be maintained between two earth stations. Wherever adequate distance cannot be maintained due to site constraints. The decision of the Bank will be final and binding.

A brick masonry chamber cement plastered from both inside and outside shall be provided on the top of the each earth station to house the funnel for watering and the earth connection. The size of this chamber will be 300 mm. x 300 mm. deep. The Chamber will be provided with a lockable cast iron cover hinged to the C.I. frame embedded in the top portion of the masonry wall, by providing spikes for grouting. Lock with key shall be supplied for each pit. The top of the masonry chamber shall be 50 mm. above the surrounding G.L.

The earth conductor from electrode shall be taken out of the masonry chamber through a protecting pipe embedded in the masonry laid at least 250 mm. below the ground level.

Earthing system shall be mechanically robust and the joints shall be capable of retaining low resistance even after passage of fault currents / strokes.

Joints shall be welded / soldered / tinned and double riveted. All the joints shall be mechanically, electrically continuous and effective, joints shall be protected against corrosion by giving suitable treatment duly approved by Architect.

Contractor shall use the layout drawing issued by the Bank for guidance only. He shall submit working drawings for approval of the Bank prior to execution of the work. He will thereafter submit as built drawings for conductor route showing locations of earth pits etc., for final records and reference alter executing the work.

Contractor shall use the schematic layout drawings for the quantity and route of the conductor issued by Bank for guidance only. He shall work out the exact quantity of earth conductors with its associated accessories required for the job.

Earth Electrodes :

The materials of earth electrode and earth conductors shall be galvanized iron unless specified otherwise in the bill if quantities, specifications or drawings.

The earth electrode shall be free from paint, enamel, grease etc.

The earth electrode shall be embedded as far as possible in the moist soil and below permanent moist level.

Earth electrode shall not be installed in the proximity of a metal fence.

Types of Earth Electrodes:

The earth electrode shall be either a pipe electrode or plat electrode, as detailed in schedule of quantities. Plate electrodes shall be used for sub-stations and large medium voltage network and pipe electrodes for small medium voltage network and installations.

Pipe Electrode:

Pipe Electrode shall consist of 2.50 meter long single piece heavy duty G.I. pipe of minimum 40 mm. N.B. and shall be cut tapered at the bottom. 12 mm. dia. holes in a staggered manner shall be frilled on the pipe as per IS : 3034.

This Electrode shall be buried vertically in a specially prepared earth pit of size 30 cm. x 30 cm. and the earth pit shall be filled with alternate layers of charcoal, salt and fine washed sand with a minimum thickness of 150 mm. for each layer. A funnel with wiremesh inside shall be fixed to the top of G.I. pipe for watering purpose.

The earth conductor of 50 mm. x 6 mm. G.I. strips shall be connected to the electrode just below the funnel with proper terminal lugs, check nuts the other end of this 50 mm. x 6 mm. strip shall be terminated through a removable test-link, on the earth bus at meter room. Test link is to be provided in masonry chamber.

Details of chamber etc., have been already give below.

Plate Electrode:

The plate electrode shall consist of G.I. Plate of size 600 mm. x 600 mm. x 6.3 mm. as per B.O.Q. or drawings.

The electrode plate shall be buried vertically in a specially prepared earth pit which shall be dug up 2.50 M. deep from the ground level. The earth plate shall be placed in the earth pit with its faces vertical and embedded in the alternate layers of coal fine washed sand and salt with a minimum thickness of 150 mm.

The earth conductor of 50 mm. x 6 mm. G.I. strip shall be connected to the earth electrode plate with terminal lugs, the other end of this 50 mm. x 6 mm. G.I. strip shall be terminated through a removable test link provided in the masonry chamber, on the earth bus at meter room.

A 20 mm. G.I. pipe heavy gauge, shall be provided from the masonry chamber upto the top earth late for watering purpose. The G.I. pipe shall be provided with a funnel having wiremesh inside for watering.

Details of masonry chamber etc. have been already give above.

Simple Pipe Electrode for earthing individual Street Light Poles etc. with chamber:

Pipe Electrode shall consist of 2.50 meter long single piece heavy duty G.I. pipe of minimum 40 mm. N.B. and shall be cut tapered at the bottom. 12 mm. dia. holes in a staggered manner shall be frilled on the pipe as per IS : 3034.

This Electrode shall be buried vertically in a specially prepared earth pit of size 300 mm. x 300 mm. and 3 M. deep. The pit shall be filled with alternate layers of salt, charcoal, salt and fine washed sand, with a minimum thickness of 150 mm. for each layer.
The earth conductor of 25 mm. x 5 mm. G.I. strips shall be connected to the electrode just below the top with G.I. nuts and bolts and spring and flat washers with check-nuts. Other end of this earth strip shall be connected to the equipment to be earthed using suitable lugs for termination at both ends, etc.

Sub-Station Earthing:

In case of Sub-Stations, large installations and wherever specified earth electrode shall be 600 mm. x 600 mm. x 3.15 mm. copper plate. The earth lead shall be connected to earth plate, using termination lugs and brass nuts, bolts and washers, masonry chamber details being as given above, including heavy duty 40 N.B. G.I. Pipe, funnel for watering etc.

Earth leads and connections:

Earth lead shall be either bare copper or aluminum or galvanized steel as specified with sizes in the B.O.Q. Copper lead shall have a phosphor content of not over 0.15% aluminum and galvanized steel buried in ground shall be protected with bitumen and hessian wrap or polythene faced hessian and bitumen coating. At road crossings necessary hume pipes shall be laid. Earth lead run on surface of wall or ceilings, columns, beams etc., using G.I. spacers of minimum 6 mm. thick and saddles. The complete earthing system shall be mechanically and electrically continuous and robust and should provide an independent return path to the earthing source.

Testing of Earth-Stations / Pits :

After the erection of Earth-Stations is complete, Contractor should arrange for an earth-tester, carry out earth-resistance test (- average of 4 – readings -) in the presence of the Clients representative and records the results.
For substation earth-stations, the resistance of each earth station should not exceed 0.5 ohms.

For other earth-station, it shall be less than 0.2 ohms.

In case of higher resistance values, either the electrode shall be driven of more depth or to construct additional earth-pit assemblies at a distance minimum three meter apart to achieve the combined resistance less than or equal to the desired results as stated above.

Sizes of the G.I. Strips to be used :

50 mm. x 6 mm. G.I. earth strip shall be used for connecting the earth-bus at meter room / meter box of chamber to be earth electrode pit.

40 mm. x 6 mm. G.I. strip shall be used for interconnection of earth pits by directly buried underground system to a minimum depth of 600 mm. to form an earth grid.

20 mm. x 3 mm. G.I. earth strip shall be used for connections between earth-bus and S.F. / M.C.B. / M.C.C.B. / E.L.C.B. units at meter room. Two pole units shall be connected with one such earth strip and three or four pole units shall be connected by two such earth strips.

32 mm. x 6 mm. G.I. strip shall be used for horizontal air-termination network at terrace / roof level and for down covers to bond with earth-electrode pit through test-link.

The overlapping of strips at joints where necessary, shall be 75 mm. (minimum). The joints will be double riveted and then welded and painted with silver paint.

Equipment Earthing :

All apparatus and equipment transmitting or utilizing electric power shall be earthed in the following manner. Copper earth wires / strips shall be used where specified in B.O.Q. 1) Power transmission apparatus :

Metallic conduits shall not be accepted as an earth continuity conductor. A separate insulated earth continuity conductor or bar of the size 50% of the size of the phase conductor subject to the maximum as given below shall be provided.

Copper	Galvanized Iron
Minimum 2.5 Sq.mm.	6 Sq.m..
Minimum 6.5 Sq.mm.	200 Sq.m..

The earth continuity conductor may be drawn inside the conduit in which case it should be insulated.

Armor of the cables shall be earthed by two distinct earth connections at both the ends to the armoring, the size of the connection being as for the metallic conduit.

In case of unarmored cable, an earth continuity conductor shall either be run outside along the cable or should form a separate core of the cable.

3 phase power panels and distribution boards shall have two distinct earth connections of the size co-related to the incoming cable size. In case of single phase D.B.'s and isolating switches 1 earth connection and in case of 3 phase, two distinct earth connections shall be provided, sizes being co-related to the sizes of incoming cables.

Testing :

The following earth resistance shall be measured with an approved earth-tester and recorded.

Earth resistance of each earth station.
Earthing system as a whole.
Earth continuity conductors.

External Lighting :

The scope of the work covered the supply, installation and testing and commissioning of lighting poles, wiring to the fixtures, cable laying as specified and shown on drawings / B.O.Q. etc. All work shall be carried out as per NEC.

Standards:

The following standards and rules shall be applicable:

IS : 1913 – 1969 : General and safety requirements for light fittings.

IS : 1944 – 1981 : Code of Practice for Lighting Public through fares.

IS : 3528 – 1966 : Water Proof Electric Lighting fitting.

IS : 2713 – 1978 : Swaged type tubular poles.

IS : 2149 – 1970 : Luminaries for street lighting. 650 V.
Indian Electricity Act & Rules.

N.E.C.

All codes and standards mean the latest. Where not specified otherwise, the installation shall generally follow the Indian Standards Codes of Practice or the British Standard Codes of Practice in the absence of Indian Standards.

Cable Laying:

Cable shall be generally laid as specified in section "Cabling" cable shall be terminated in a 4way terminal block inside the pole of attached therewith. Contractor shall mark out the cable route and got it approved before laying the cables.

Indication Instruments and Meters :

These shall be provided as per BOQ and shall be 96 mm. square size suitable for flush mounting and zero adjustment from outside. All meters except KWN meter shall be AE make. KWN meter shall be GEC / IMP make.

Current transformers shall be bar primary cast type or dry type, and shall have short-circuit time withstand rating equal to that of associated switchgear for 1 sec.

Push Buttons: The push buttons shall be of the momentary contract to actuate for 10 Amp. At 240 V AC and 2200 V.D.C., provided with integral inscription plates engraved with their functions. They shall have required “NO’ ass “NC” contacts. Only “Siemens” or E.E. Push Buttons shall be used.

All HRC switch Fuse Units, Contactors, single phase preventive and O/L relays, indicating lamps will be only “Siemens”, “English Electric” or “Havells” Brands only.

Control and Selector Switches :

The control switches and selector switches shall be of rotary type having enclosed contacts, adequately rated for application but with a minimum rating of 10 Amps, at 2400 V AC and at 220 V.D.C. the plats shall have clear position markings, control switches shall have momentary contacts, spring return to centre, with pistol grip handles, instrument and selector switches shall have stay-out contacts with oval knuried handles.

Name Plates: Main name plate shall be fixed at the top centre, name plate giving feeder details shall be provided and are to be fixed by screws. All labels / name plates shall be black plastic with white engravings of letters or minimum 6 mm. size.

Internal Wiring: All internal power wiring shall be done either stranded PVC Copper wire 2.5 sq.mm. size 1000 V Grade or strips of insulated copper conductor of adequate size.

Small wiring for control circuit shall be done with stranded Copper wire PVC conductor 1100 V Grade.

Each end of control cable shall be provided with identification Ferrules Yellow in colour with black letters.

All wiring shall be terminated on stud type terminal blocks through crimping sockets. Not more than 2 connections shall be made on any one terminal block. All spare auxiliar contacts of contactors shall be wired to terminal block.

Terminal Blocks :

Terminal blocks for power and control wiring shall be of reputed make stud type, with washers, nuts, and lock nuts, and identification mark. All adjacent terminals shall have insulating barriers. All power terminal blocks shall be rated for a minimum current of 300 Amps. Terminal blocks for controls and instrument circuit shall be rated for minimum 115 Amps., and shall be suitable to receive 100 Sq.mm. conductor. All sets of power control power terminal blocks shall be identified with engraved plastic labels, black background and white letters.

Cable Terminators :

Dublic compression type of brass cable glands mounted on gland plates shall be provided to receive and support all power and control cables entering the switchgear. Size of the cable gland shall be suitable for cables entering the switchgear. Cable gland shall have earthing facilities for earthing armor of the cable.

Tariff Advisory Committee and CPRI Tested :

The switchgear shall be approved by the TAC for fire insurance and CPRI tested for shortcircuit test and enclosures test.

Tests :

Following tests shall be performed before shipped the switchgear panels to Site :

high Voltage Test at 2.5 KV.

Insulation Resistance test before and after H.V. test, using 1000 V Meggar.

Operational Test.

Three sets of Test Certificates to be submitted.

Documentation :

Contractor shall arrange to get from Manufacturers and shall supply following drawings in quadruplicate for approval before starting manufacturing operations within 4 weeks from the LOI / date of order.

General Agreement Drawings.

Scheme and Wiring Diagram Drawings.

Instructions and Service manual for all the Components.

Approval of drawings by Clients / Consultant does not relieve the contractor of the "Performance" of the panels.

After supply and installation and commissioning of the panels and switches Contractor shall submit 6 sets of the above documents of as built in panels.

Air-Break Switches :

For all places in this project: Metal Clad.

The air-break switches shall be of AC 23, heavy duty, quick make-quick break type as per IS: 4047.

Switches shall be capable of withstanding the mechanical and thermal stresses produced by overloads and short-circuits.

All switches of all rating shall have interlocks with the compartment doors. Switches 250

A and above shall be lockable in "OFF" position. All live parts shall shrouded. It shall be possible to intentionally defeat the interlocks if required.

Red indicating lamps shall be provided for "ON" indication.

Brands: Only L & T, Siemens English Electric, Hevells, controls and switchgear brands to be used.

The switches shall have the following standards rating: 32, 63, 100, 125, 200, 250, 300, 400 and 600 Amps.

Fuses :

The fuses shall comply with the following:

HRC Cartridge Fuse: Link type with carriers.

Certified reputing capacity not less than 46 KA at 415 Volts A.C .as per IS: 2000.

All fuses shall have visible indication to indicate "Blown" condition.

Pressure clamp terminals for wires upto 4 sq.mm and bolted lugs for higher ratings.

HRC Fuses: Make: E.E., L & T, Siemens, Havells.

Fuse Puller: Contractor shall supply 3 sets of Fuse Pullers.

Moulded case circuit breakers : M.C.C.B.

The M.C.BC.B.'s shall be 4 pole construction wherever specified and shall have independent Manual opening and closing mechanism of quick make, quick break type and they shall be trip free in operation. "ON" , "OFF" and "TRIP" mechanism shall be clearly indicated.

They shall conform to IS : 2516.

Bolted type neutral link will be provided with T.P. M.C.C.B. only.

It shall be possible to mount accessories on the M.C.C.B's like shunt trip, U.V. release, alarm contacts etc.

The M.C.C.B.'s shall have adjustable thermal / static trip devices.

Contactors :

The Motor starter contactors shall be of electro-magnetic type double break, non-gravity type rated for uninterrupted duty suitable for operation under AC – 3 utilization category of as per IS : 2959. The contacts shall be silver plated.

2 Nos. and 2 NC auxiliary contacts shall be included.

The operating coils shall have Class “E” insulation of wire and shall be suitable for operation of any specified control supply systems.

LIST OF APPROVED MANUFACTURERS FOR ELECTRICAL WORKS		
S.N.	MATERIALS	APPROVED MANUFACTURERS
1	Moulded Case Circuit Breaker (MCCB)	LEGRAND / HAGGER/ SCHNEIDER
2	Switch Fuse Unit (SFU)	LEGRAND / HAGGER/ SCHNEIDER
3	Power Contactors	LEGRAND / HAGGER/ SCHNEIDER
4	Meters	HPL / Benteh / IMP / L&T
5	Armoured LT cable	POLYCAB / RR KABLE / FINOLEX.
6	Cable Termination	BRACO/ COMMET
7	Cable Tray	Profab / Metalemms / Asian Ancillary Corporation
8	PVC Conduit & Accessories	PRECESION / CIRCLE ARK / DIAMOND
9	Wires (FRLS only)	POLYCAB / RR KABLE / FINOLEX
10	MS Conduit & Accessories (ISI Mark).	EC, Precision, AKG, RMCON, and Techno Flex
11	Modular Switches & Sockets with PVC Box	Legrand - (Arteor model) / MK - (Blenz model) / Anchor/Roma
12	Distribution Board, MCB, RCCB & RCBO	LEGRAND / HAGGER/ SCHNEIDER
13	Data/ Voice Cable & accessories	D-Link
18	Speakers	Bosch /Honeywell/Siemens
19	Amplifier	Bosch /Honeywell/Siemens)
20	Electrical LT Panel	CPRI Approved Panel Manufacturer Only
S.N.	MATERIALS	APPROVED MANUFACTURERS
21	Capacitors	Siemens / L& T/ GE /ABB /Universal
22	CT'S / PT'S	AE / Kappa/ Ricco/ Rishabh/ Keycee
23	APFC Relay.	HPL / Emercon /Alstom/ Beluk/ L & T
24	Contactor / Timer	Schneider / Hager / L & T / Siemens Legrand
25	Energy Meters	Schneider Electric, Siemens, ABB, and L&T, HPL, Meco

NB. 1) The contractor should obtain prior approval from Employer / Consultants before placing order for any specific materials. Employer may / delete any of the makes or brands out of the above list.

2) All materials should conform to relevant standards and codes of BIS.

3) Materials with I.S.I. mark shall be used duly approved by the SBI Engineer / Architect.

Note: - 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 authorised Distributor for authenticity and genuineness of the material for consideration and as per make approved by the SBI. The same will not be considered for payment.

12.3 **Technical Specification for HVAC ductwork:**

is surface area, expressed in square meters or square feet, calculated by multiplying the external perimeter by the duct length. Measurements are taken before applying insulation and do not deduct for cut-outs of diffusers, grills, or damper.

1. Calculation Method
   - Formula: Surface Area = Perimeter × Length
   - Perimeter: The external perimeter of the duct is calculated by adding overall width and depth, then multiplying by two, inclusive of corner joints.
   - Length: Measured along the centreline of the ductwork (from flange face to flange face).

2. Standardized Guidelines (IS, ASHRAE, and CPWD)
   - Straight Ducts: Straight sections of rectangular, round, or oval ducts are calculated using the basic surface area formulas.
   - Fittings and Specials: Standard accessories (like bends, elbows, tapers, offsets, and reducers) are typically measured by computing the actual surface area of the fitting. Some contracts allow for estimating fittings by adding a percentage (e.g., 10% to 15%) to the straight duct area to account for extra material and joints.
   - Vanes and Dampers: Turning vanes, volume control dampers, and fire dampers are generally measured by count (numbers) or are deemed included in the total ducting rate, depending on the contract schedule of quantities (BOQ).

3. Key Measurement Rules to Remember
   - No Deductions for Cut-outs: Openings for air terminals (grills, diffusers, access panels) are not deducted.
   - Flanges Included: The external surface area calculation accounts for corner joints and flanges.
   - Insulation: Insulation is measured separately. If you are calculating the amount of duct insulation required, you use the same external surface area methodology, but you add the insulation thickness to the perimeter calculation.
   - Thickness and Material: Ducts are priced and billed separately according to their sheet gauge (thickness in mm) and material type (e.g., Galvanized Iron, Aluminium, Pre-insulated).

     For a deeper dive into the exact billing practices, refer to the CPWD HVAC Specifications or the IS 655 Duct Standards.

4. Insulation
   - Unit of Measurement: Square meters (m^2) or square feet (ft^2).
   - Calculation: Measured over the outer surface of the insulation material.
   - Rule: The calculation follows the same perimeter-times-length formula as the duct, but you must add the thickness of the insulation to the duct dimensions before calculating the perimeter. Fittings (bends, tapers) are measured over their centrelines.

5. Grills and Diffusers
   - Unit of Measurement: Area (Square meters/m^2 or square inches) or By Number (Pcs).
   - Calculation: Based on the nominal neck size (the inner opening size that connects to the duct), not the outer face/flange size.
   - Rule: Linear grills (like slot diffusers) are usually measured by running meters, while standard supply/return air grills are billed per piece based on their specific size dimensions.

6. Canvas Connections (Flexible Connections)
   - Unit of Measurement: Square meters (m^2) or By Number (Pcs) for standard sizes.
   - Calculation: If measured by area, it uses the perimeter of the connecting duct multiplied by the visible length of the canvas stretch (typically 100 mm to 150 mm).
   - Rule: Often treated as a "per item" or "per unit" supply and installation cost in the Bill of Quantities (BOQ) for ease of tracking.

7. Dampers (Volume Control & Fire Dampers)
   - Unit of Measurement: Face Area (Square meters/m^2) or By Number (Pcs).
   - Calculation: Based on the internal cross-sectional area (Width × Height) of the duct section where the damper is installed.
   - Rule: Motorized fire dampers and smoke dampers are almost always listed explicitly by count (per piece) in a BOQ due to their high cost, built-in actuators, and integration with the fire alarm system.

8. Painting of Open Ducts
   - Unit of Measurement: Square meters (m^2) or square feet (ft^2).
   - Calculation: Calculated using the actual exposed external surface area of the ductwork that receives the paint.
   - Rule: If the duct is fully exposed, all four sides are measured. If a side is flushed completely against a concrete slab or wall and cannot be painted, that specific surface area is deducted from the painting quantities.

9. Acoustic Lining vs. Thermal Insulation

   The choice changes your calculation dimensions and your material deductions.

   - Acoustic Lining (Inside the Duct):
     - Measurement Basis: Internal surface area of the bare duct (m^2 or sq. ft.).
     - Calculation: You must use the exact internal perimeter of the raw metal sheet before any lining is attached.
     - Crucial Rule: Unlike standard external work, you must deduct the surface area of internal obstructions. For example, if a large splitter damper or fire damper cuts through the lined section, that internal area is deducted. The price per m^2 usually includes the protective layer (like fiberglass tissue and perforated aluminium sheet) used to prevent fibre erosion from the airflow.

   - Thermal Insulation (Outside the Duct):
     - Measurement Basis: External surface area of the finished insulation (m^2 or sq. ft.).
     - Calculation: You multiply the expanded outer perimeter by the centreline length.
     - Crucial Rule: You do not deduct for external supports, hanger brackets, or small joints. However, you must measure fittings (bends, elbows, tapers) along their outer centreline curve. The pricing is separated by the insulation type (e.g., Nitrile Rubber, XLPE, Rockwool) and the protective cladding (e.g., Aluminium foil, GI cladding for outdoor ducts).

10. Motorized vs. Fusible-Link Fire Dampers

    The choice shifts the item from a basic mechanical component to an electro work integrated system, completely altering the BOQ description.

    - Motorized Fire Dampers (MFD):
      - Measurement Basis: Strictly by Number (Pcs / Sets), itemized by size (e.g., 600x400 mm MFD).

- BOQ Scope Expansion: The unit rate cannot just cover the metal frame. It must explicitly include the electronic actuator (typically 24V or 230V with a spring-return mechanism), the limit switches, and the integration/cabling work required to connect it to the Building Management System (BMS) and Fire Alarm Panel.

- Fusible-Link Fire Dampers:
  - Measurement Basis: By Number (Pcs) or sometimes by Face Area (m^2) for very large sizes, though per-piece is standard practice.
  - BOQ Scope Expansion: The unit rate covers the mechanical damper casing, the blades, and the replaceable fusible link (typically rated to melt at 74°C or 165°F). Because there is no electrical wiring or actuator involved, the cost is significantly lower, and it is estimated purely as a mechanical HVAC installation item.

11. Acoustic Lining Thickness (Inside the Duct)

Acoustic lining is designed to absorb equipment noise (like fan hum from an AHU). The thickness dictates the Noise Reduction Coefficient (NRC).

- 12mm Thickness: Used primarily for low-noise applications or smaller branch ducts where space is constrained and high-frequency sound attenuation is sufficient.

- 25mm Thickness: The standard industry baseline for medium-pressure ductwork. It handles a broader spectrum of middle-to-high frequency noises and typically achieves an NRC value of around 0.60 to 0.75.

- 50mm Thickness: Reserved for high-noise zones directly connected to major mechanical plant rooms, return air plenums, or theater/auditorium HVAC branches. It provides maximum sound absorption across low-frequency rumbles with an NRC up to 0.95. [1]

13. Thermal Insulation Thickness (Outside the Duct)

Thermal insulation prevents condensation (sweating) and thermal heat gain/loss. The choice depends on the temperature difference between the conditioned air inside and the ambient air outside the duct.

- 12mm to 19mm Thickness: Standard for indoor supply air ducts running through false ceilings within a conditioned space. Materials like Nitrile Rubber or XLPE at 19mm are the default for typical commercial office spaces.
- 25mm Thickness: Typically specified for return air ducts, or supply ducts passing through unconditioned, high-humidity zones (like basements, shafts, or plant rooms).

- 50mm Thickness: Mandatory for outdoor exposed ductwork (such as rooftop ducts exposed directly to sunlight) or for systems carrying heavy, chilled air where heat gain would destroy energy efficiency. This is often executed using high-density Glass wool or Rockwool slabs wrapped in tough aluminium cladding.

14. Fire Damper Requirements (90 vs. 120 Minutes)

The fire rating determines how long the mechanical barrier can withstand a fully developed fire before structurally failing or allowing flames to penetrate a fire barrier wall.

- 90-Minute Rating (1.5 Hours): The standard requirement under UL 555 and NFPA 90A regulations for dampers installed in walls, partitions, or floors that have a fire-resistance rating of less than 2 hours. This is common for internal office partitions and standard corridors.

- 120-Minute Rating (2 Hours) to 180-Minute Rating (3 Hours): Mandatory for dampers cutting through critical fire barriers, such as main vertical service shafts, server rooms, electrical substations, or boundary walls separating two distinct structural fire compartments. If the concrete wall is rated for 2 hours or more, the fire damper must match or exceed that rating.

15. Acoustic Lining vs. Thermal Insulation Thicknesses

Standard specifications fluctuate depending on the material type, the location of the ductwork, and whether it handles conditioned air.

Acoustic Lining (Internal)

- Standard Thickness: 12 mm or 25 mm is standard. 50 mm is strictly reserved for high-noise mechanical rooms (e.g., AHU plenums or generator rooms).

- Material & Application: Typically utilizes high-density fiberglass tissue-faced boards, resin-bonded glass wool, or specialized open-cell elastomeric foam like Armacell Armasound.

- Calculation Impact: A 25 mm internal lining reduces your usable internal duct dimensions by 50 mm in both width and height. You must size your raw sheet metal larger to compensate for this restricted airflow area.

Thermal Insulation (External)

- Indoor (Conditioned Spaces): 13 mm to 19 mm of Nitrile Rubber / Cross-linked Polyethylene (XLPE), or 25 mm of Glass wool.
- Indoor (Unconditioned Spaces / Ceiling Voids): 25 mm to 32 mm of Nitrile Rubber/XLPE, or 50 mm of Glass wool to prevent condensation (sweating).
- Outdoor (Exposed to Weather): 50 mm thickness is standard, wrapped in protective aluminium foil, fiberglass cloth, or a rigid GI metal cladding envelope to block UV rays and rain damage.

16. Fire-Rating Requirements for Fire Dampers

The fire-rating of a damper must match or exceed the hourly fire-resistance rating of the wall or floor assembly it penetrates.

- 90-Minute Rating (1.5 Hours):
  - Application: Used in minor compartment walls, partitions, and corridors where the structural barrier requires a 1-hour or 1.5-hour fire rating.
  - Standard compliance: This aligns with general commercial zoning under SMACNA Fire Damper Guides.

- 120-Minute Rating (2 Hours):
  - Application: This is the benchmark standard for high-rise commercial buildings, airports, and malls.

  - Code Compliance: The National Building Code (NBC) of India Part 4 dictates a mandatory minimum 120-minute fire resistance rating for all service shafts, ducts, and floor-to-floor compartmentation walls.

- 180 to 240-Minute Rating (3 to 4 Hours):
  - Application: Reserved for critical areas like data centers, oil & gas installations, hazardous manufacturing plants, or main subterranean parking exhaust shafts passing through multiple basements.

17. Technical Specification for Spray Painting

A standard Bill of Quantities (BOQ) technical clause for open duct spray painting includes:

1. Surface Preparation: All factory-fabricated galvanized iron (GI) or mild steel (MS) duct surfaces must be thoroughly cleaned. Wire brushing, wiping with thinners, or solvent degreasing is required to completely remove grease, white rust, dirt, and manufacturing oils.

2. Primer Application:
   - For GI Ducts: One coat of a specialized wash primer or epoxy-based zinc-phosphate primer must be applied. (Standard oil-based primers fail to adhere to zinc-coated galvanized steel).
   - For MS Ducts: One coat of red oxide or zinc chromate primer.

3. Finish Coats: Two or more coats of premium matte/semi-gloss synthetic enamel or PU (Polyurethane) paint are applied via airless spray equipment to eliminate brush stroke marks.

4. Dry Film Thickness (DFT): The final paint application must achieve a minimum total uniform thickness (e.g., 50 to 100 microns, or as specified by the manufacturer/consultant).

5. Color Coding System: The finish coat must comply with client aesthetics (often matte black or charcoal grey for open ceilings) with 25mm wide band indicator arrows spaced at regular intervals (e.g., every 1.5 to 3 meters) to distinguish Supply Air (SA) from Return Air (RA).

18. Mode of Measurement

The layout and geometric tracking parameters mirror standard ductwork with explicit surface exclusions.

- Unit of Measurement: Square Meters (m^2) or Square Feet (ft^2), calculated to two decimal places.

- Calculation Method: Net Exposed Surface Area = Perimeter × Length
  - Perimeter: The actual external perimeter of the painted duct sides.
  - Length: Measured linearly along the center-line of the finished duct run.

- The "Three-Side" Rule for Wall/Slab Flushed Ducts:
  - If a duct runs completely flushed against a concrete ceiling slab or wall, the unexposed top/side surface cannot physically be spray-painted.
  - Only the 3 exposed faces actually sprayed are measured for payment. The unexposed face is strictly deducted from the perimeter calculation.

- Fittings and Hangers:
  - Standard duct fittings (bends, tapers, elbows) are measured along their center-line external surface area.

- Painting of structural duct hangers, anchor fasteners, and threaded rods is deemed included in the per m² rate of the duct painting item and is not paid for separately unless a standalone line item exists in the BOQ.

- No Deductions for Minor Openings: Cutouts for test points, pressure sensors, or small branch take-offs are not deducted from the total surface area.

12.4 Scope of work of Fire Fighting & PA System works :

Scope of Work: Supply, Installation, testing and commissioning of firefighting system at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur as stipulated in Bill of Quantities (BOQ). The fire fighting works includes SITC fire alarm system, Public Address System, Fire Extinguisher and Fire Signages.

1. Completeness of the System: The work shall comprise of entire labor including supervision and all material necessary to make a complete installation and such tests and adjustment and commissioning as may be required by the purchaser. All sundry equipment, fittings, assemblies, accessories, hardware items, foundations bolts, supports, excavation and refilling of trenches, sealings, termination lugs for electrical connections, suspenders and/or cable trays, cable glands, junction box, earthing, integration of control components and all other items which are useful and necessary for proper assembly and efficient working/ functional requirement of various equipment and components of the work shall be deemed to have been included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.

Note:1) The quantities of components/equipment mentioned in the Bill of Quantities (BOQ) are indicative for bid purpose only. These quantities shall be finalized during detailed engineering and payment shall be made as per actual measurement at site upon completion of the work,

2. Site Visit: Bidders are advised to visit the site for familiarization of site conditions and collection of any information considered vital for submission of tender. The purchaser will not take any responsibility for the same.

3. Coordination with other Agencies: The contractor shall coordinate with all other agencies involved at the site and ensure that work of other agencies is not hampered due to delay in his work. Cabling Fitting of system or any other work which directly affect the progress of work of other agencies shall be given priority.

4. Guarantee: All equipment shall be guaranteed for a period of 12 months from the date of taking over the installation by purchaser against unsatisfactory performance and/ or breakdown due to defective design, workmanship or material. The equipment or component, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost to the satisfaction risk and cost of the contractor. The decision of Engineer-in-Charge in this regard shall be final & binding on the contractor. Bidder shall guarantee among other things, the following:

i. Quality, strength and performance of the material used as per manufacturer's standards.

ii. Safe mechanical and electrical stress on all part under all specified conditions of operation.

iii. Satisfactory operation during the maintenance period.

5. Material: All equipment/component/accessories to be used in this

contract shall be UL/FM listed. The material brought at site shall be approved by the Engineer-in-charge before use in the work. In case during execution, any material used in the work is found not as per agreement specifications, Engineer-in-charge may issue instruction to the contractor to remove the material from site.

6.0 Manufacturer's Instructions:

7.0 Where manufacturers have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in the documents, these instructions should be followed in all cases.

8.0 Completion Certificate:

9.0 On completion of the Installation a certificate should be furnished by the Contractor counter signed by a licensed supervisor, under whose direct supervision the installation was carried out. This certificate should be in the prescribed form as required by the local authority. The Contractor should be responsible for getting the Fire Installation inspected and approved by the local Authority concerned.

10.0 Qualified Competent Supervision:

11.0 The Contractor should employ competent fully licensed, qualified full time Engineer to direct the work of Fire installation in accordance with drawings and specifications. The Engineer should be available at all times on the site to receive instructions in the day-today activities, throughout the duration of the contract. The foremen should co- relate the progress of the work in conjunction with all relevant requirements of the supply authorities.

12. Drawing of fire works:

i. Drawing for approval after award of work: The contractor is required to prepare & submit the drawings of fire alarm and PA system for approval of Engineer-in- charge before commencement of installation. The approval of drawings however does not absolve the contractor of his responsibility to supply the equipment/materials as per agreement / applicable law and fire regulation. In case of any contradiction between the approved drawings and agreement the decision of EIC shall be final and binding on the contractor. The drawings are broadly mentioned as under:- a) General arrangement drawing

ii. Completion Drawings: 3 sets of Drawings shall be submitted by the contractor while handing over the installations to purchaser. Out of this one of the sets shall be laminated on a hard base for display in the fire control room.

SPECIFICATIONS FOR ADDRESSABLE FIRE DETECTION & ALARM SYSTEM

1. DESCRIPTION IN GENERAL

The Fire Detection & Alarm System supplier shall furnish and install a fully integrated Fire Detection & Alarm system for SBI 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur.

All the sensors, modules, devices are to be installed in all areas and voids to cover the entire office premises.

This section of the specification includes the furnishing, installation, and connection of a microprocessor controlled; analog addressable, intelligent fire alarm equipment required to form a complete coordinated system ready for operation. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, control panels, auxiliary control devices, annunciators, power supplies, and wiring as shown on the drawings and specified herein.

The Panel shall be interface with a Public Address System to relay evacuation messages in case of a fire emergency.

Each designated zones/loops shall transmit separate and different alarm, supervisory and trouble signals to the Central Monitoring Stations and designated personnel, and if required, in other buildings at the site via a multiplex communication network.

The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.

2. SCOPE

The basic system comprises of Main Addressable Intelligent fire alarm panel, Smoke Multi Sensors, Smoke Optical Sensors, Heat Detectors, Audio Visual Indicators, Isolator Modules, Monitor Control and Relay modules connected by an Armored Cable. The SITC of Fire alarm system as per latest Indian standard 2189, NBC, NFPA 72 any other applicable standard.

- 8 Loop_640-Character Display Main Fire Alarm panel shall be Installed in BMS Room.

The panel shall be of the multiple loops to accommodate all the sensors and devices with the spare loop capacity of 20%. All the sensors and devices are connected to main panel and all output circuits are activated from the same.

The Fire alarm system are divided in different zones/loops as per bank requirement and integrated, programming with the existing fire alarm system.

Programming of fire alarm system -

- The Main FAP would be located in control/BMS room. Repeater Panel will be located in Reception / Security desk. SITC of detectors in such a way that all area

should be covered by the detectors including all rooms/cabins/washroom etc. Detectors/Devices to be provided in above false ceiling. Design and drawing of installation of Fire Alarm System detectors/Devices should be finalized by the bank.

- Each Loop mentioned above should be divided into multiple logical zone/areas while programming. Provision of separate zones for each wing. Each wing should be provided a separate zone/loop. In activation of device/detector in any wing should not activate another wings detector/device. Wing wise programming of Fire Alarm System - programming of Fire Alarm System detectors in such a way that Each Wing has separate zone/Loop and if any Fire call come in any zone will not be activated the other Wing or zone hooter except control room common hooter. if any Fire call happened in one Wing, only respective Wing hooter & control room common hooter should only be activated or sound.

- Provision of common hooter in control room to alert Control room operator. The common hooter should be connected with all zones/loops, which should be activated when any detector/device operates in any zone/loop.

- Integration of fire alarm system to be done with AHU unit. If any detector/device activate in any wing/zone respective wing/zone AHU unit should only be tripped.

- Integration of fire alarm system to be done with Gas Suppression system unit. If any GSS system operates in any wing, same to be indicated in FAS or separate panel installed for the same in Control room.

- Integration of fire alarm system to be done with Access Control System. If any detector has activated in any wing/zone respective wing/zone Access Control Doors, Electro-Magnetic look, Emergency doors and Critical Room Doors should automatic opened.

- The layout printout in readable format should be pasted near reception and at locations as required by client.

The photoelectric sensors are installed in three voids viz. ceiling void, room void & floor void (where 200mm floor void is available). The heat detectors are provided in the Pantry/Kitchen Areas. And multi-sensor detectors shall be installed in critical rooms.

The Hooter cum strobe is located at strategic Location to ensure audible alarm. The Strobes intensity shall be in line with the NFPA 72 requirement, and the Hooter cum strobe shall be placed in such a fashion that there shall be no area blind to the light being emitted by the strobe on an open floor plate.

The panel shall be capable to zone all the sensors and devices and shall be able to activate outputs against activation of zone. The panel shall be capable to zone all the sensors and devices and shall be able to activate outputs against activation of zone. The panel shall be supplied with UPS power 230VAC and shall have its in-built battery backup and battery charger.

Basic Performance:

- Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 6 (Class A) Signaling Line Circuits (SLC).
- Initiation Device Circuits (IDC) shall be wired Class A (NFPA Style D) as part of an addressable device connected by the SLC Circuit.

• Notification Appliance Circuits (NAC) shall be wired Class A (NFPA Style Z) as part of an addressable device connected by the SLC Circuit.

• On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.

• Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.

When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:

The System Alarm LED shall flash.

The LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.

All system output programs assigned via control-by-event interlock programming to be activated by the particular point in alarm shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated.

The audio portion of the system shall sound the proper signal (tone or voice) to the appropriate zones.

The fire alarm system shall detect all changes in status of monitored points and shall initiate appropriate acts to alert/evacuate occupants, provide event annunciation and activate auxiliary controls as specified herein.

The system shall accept process and evaluate the following types of input signals:

- Automatic Fire Detectors
- Manual Alarms
- Supervisory (Tamper) Condition
- Trouble

The system shall store a record of alarm, supervisory and trouble events in non-volatile history file.

This file shall contain the most recent 1000 events, with time and date of each event. It shall be possible to select the number of events to be viewed in the history file by date, so the entire file does not have to be downloaded. The history file shall remain intact in the event of a loss of AC and battery power.

The system shall be capable of being expanded and field reprogrammed at any time up to the predetermined maximum capacity of the system, without the requirement to return the operating system to the factory for program changes. All field programming shall be done by an authorized manufacturer's representative.

Intelligent, Analog and Addressable input devices shall receive power and communication protocol signals over a single pair of wires per channel (SLC) from the control unit.

Each channel (SLC) shall support Minimum of 125 analog and/or addressable devices.

Channels shall be field programmable for NFPA 72(1993) Style 4 and 6 operations,

with capability for Style 7 when used with approved loop isolation units.

Photoelectric and Thermal detectors shall be of the Intelligent, analog addressable type, and shall provide dual level alarm and pre-alarm reporting. Pre-alarm shall serve as early warning of an impending alarm condition, and shall generate a trouble condition in the panel.

Each detector head shall incorporate a microprocessor which provides for distributed system intelligence. The microprocessor shall provide full monitoring and control of the device with memory for storage of pre-set sensitivity levels and other detection device parameters. For security purposes and system integrity no mechanical addressing switches shall be allowed for field devices. All setting of device parameter shall be done electronically. System Power shall be adequate to accommodate all connected addressable and analog input devices in alarm simultaneously and shall be capable of operating all connected addressable output relays while all addressable inputs are in alarm.

Prior to owner / contractor acceptance of installed system, manufacturer or his representative shall demonstrate 100% system alarm status with no loss of performance.

Activation of any manual alarm station or any other approved alarm initiating device (excluding Automatic Fire Detectors which will be described later) shall immediately result in the following:

Display the alarm condition, back-lit LCD Display; a minimum of 40 characters which will be available for user-defined messaging.

Visual alarm signals shall be provided as indicated on the plans.

System shall shutdown/redirect all HVAC system fans, dampers, etc.; close fire doors, etc., in accordance with the schedule provided and programming of system & with appropriate local/national code.

Operation of the system alarm silence switch shall silence all alarm audible connected to the system. When properly configured, a silence command shall not extinguish visual alarm appliances. Circuits containing alarm visual circuits shall not be silence except upon system reset.

The system alarm LED and all other associated alarm displays shall remain illuminated until the alarm condition has been corrected and the panel has been reset.

A connected system printer (if supplied) shall record all the status changes that take place within the fire protection system, including alarm / trouble restoration. All status changes shall be logged.

The activation of an Automatic Fire Detector shall provide for all operations. Alarm Verification is as per device in accordance with NFPA 72 - 1993 and UL 864. Positive Alarm Sequence is in accordance with NFPA 72 -1993 and UL 864.

Analog-Addressable smoke detectors shall be equipped with a Day/Night Sensitivity Mode which may be selected by either manual or automatic input. Because certain smoke detector environments change from day (occupied) to night (unoccupied), a more sensitive or Night setting may be desirable. Adjustable sensitivity smoke detector values shall be distinctly identified in the system memory and by display.

Supervisory conditions shall cause a distinct annunciation at the panel. The system

printer shall record supervisory events in a manner consistent for all status changes.

The fire alarm panel shall fully supervise its operation. The physical opening or cutting of the wiring to any initiation, alarm indicating, signaling line, or associated supervisory monitoring circuit shall cause distinct annunciation via the LCD display.

Wiring Arrangements

It shall be the responsibility of the Contractor to determine the number of loops and other circuits required for the system.

Where the system is distributed, the network linking the control panels shall be capable of being extended in the future to link to further compatible control panels. The capacity of the network shall be expandable by 20%.

All wiring shall be monitored for faults.

Loop wiring shall tolerate a single open-circuit fault without affecting any device on the same loop. Loop wiring shall also tolerate multiple open-circuit or short-circuit faults in one area, without affecting the devices in any other area or on any other loop or circuit.

Removal of a device from a loop shall not cause any remaining devices in the system to become inoperative.

It shall be possible to disable detectors on the system. The controlling software shall permit individual detector disablement and detector group disablement. As a minimum, a group shall correspond with the detectors in a particular zone. Group detector disablement shall not render manual call points in the same area inoperative.

False Alarms

Great care shall be taken, at the design stage, to minimize the likelihood of false alarms occurring in the new or modified system.

Devices shall be of types appropriate to the local environment. For example, optical smoke detectors shall not be installed in areas where there is likely to be steam or dust present. Also, manual call points shall be fitted with transparent hinged covers where there is the possibility of accidental operation, e.g. in kitchens or service areas.

Battery

1) Shall be 12-volt, Lead Acid Maintenance free type.

2) Battery shall have sufficient capacity to power the fire alarm system for not less than 48 hours plus 30 minutes of alarm upon a normal AC power failure.

3) The batteries are to be completely maintenance free. No liquids are required. Fluid level checks refilling, spills and leakage shall not be required.

Battery Charger

1) Shall be completely automatic, with constant potential charger maintaining the battery fully charged under all service conditions. Charger shall operate from a 240-volt 50/60 hertz source.

2) Shall be rated for fully charging a completely discharged battery within 48 hours while simultaneously supplying any loads connected to the battery.

3) Shall have protection to prevent discharge through the charger.

4) Shall have protection for overloads and short circuits on both AC and DC sides.

PUBLIC ADDRESS SYSTEM

The objective is to have an effective Public address system for proposed area of SBI GITC BELAPUR.

Requisite number of Audio Amplifiers shall be provided to meet the load of the Speaker Circuits, The System shall have a built-in Message manager which will relay an emergency Message to all zones on Floor, in case of a Fire / Likewise emergency.

Voice Evacuation Messages shall be relayed immediately after the alarm activated by either manual call point or sprinkler flow switch / hooter cum flashers are sounded.

Requisite number of Booster Amplifiers shall be provided to meet the load of the Speaker Circuits shall be kept in Reception area. The System shall have a built-in Message manager which will relay an emergency Message to all zones on all Floors, in case of a Fire / Likewise emergency.

The system shall comprise of Network Voice Alarm Controller, Audio (Booster) amplifiers, ceiling mount/wall mount speakers- 6W Speakers, Call Station with 12 Zone Selection Switch, & another related accessory.

The Main PA controller and amplifiers shall be Rack mounted kept in BMS Room. Call station shall be kept in BMS room and Reception area.

Installation shall be as shown on the drawings, and as recommended by the major equipment manufacturer.

All cables, junction boxes, cables supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. If construction is on-going during this period, measures shall be taken to protect detectors/ sensors from contamination and physical damage.

All speakers/controllers/amplifiers/call stations shall be installed in accordance with installation instructions provided by the manufacturer.

All speakers shall be installed in the exact locations specified in the design drawings; thus providing the best possible coverage.

All speakers shall be securely fixed to approved boxes and allow for easy fitting and removal of it.
Cable and wire entries to speakers shall be fitted with grommets to prevent possible damage to the insulation

Programming of PA systems

Wing wise programming of Public Address System to be done to facilitate

announcement in separate or multiple wings.

Provision of public Address- wing wise programming of public address system to be done, which is provide facility to announce individual wing or switching different wing as per Bank's requirement from control room.

Drawing and installation of public address system shall be finalized by the Bank.

12.5 SCOPE OF WORK OF DATA CABLING

The Contractor's scope of work covers the following: -

SUPPLY, TESTING, AFTER INSTALLATION OF LAN CABLING NETWORK, TELEPHONE CABLING AND NETWORK RACK as under:

(i) Supply of necessary materials as per the BOQ.
(ii) Laying, Termination, Installation of IOs, Surfaces boxes, Single Face Plates, Racks and other related accessories.
(iii) Network numbering and identification at Jack Panel, IOs etc as per industry standard.
(iv) Network cable Routing / Laying Diagram with testing confirmation.
(v) Testing of end-to-end LAN cabling i.e. from IOs till Jack Panel in the Network Racks.
(vi) Supply and Laying of Cat 6 Cable, Termination, Installation of IOs with Face Plate fixing, termination mount boxes, RJ11 JACK IOs, MDF Installation, Krone Modules and other related accessories, with punching, labelling etc.
(vii) Termination and testing up to intercom points at the identified workstations

12.6 SCOPE OF SECURITY SYSTEM & ACCESS CONTROL WORK

State Bank India GITC Belapur proposes to procure additional Access Control Devices and CCTV Surveillance System devices to enhance the security in office workstation at SBI GITC annex premises i.e. 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur at Navi Mumbai.

A. Equipment to be installed: -

The RFP is issued to identify prospective vendor for SITC for Access Control System and CCTV Surveillance System, at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur. Details of items to be installed are given in Appendix A.

B. The successful bidder will have to tie up with the respective software/ hardware providers at their own end for hassle free service. No additional charges will be paid for co-ordination with software/hardware providers for hiring/using their services. Bidders to ensure site inspection of the site before giving the quote. No separate charges will be entertained at a later stage.

C. To ensure that Installed Security Gadgets in 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur mentioned in Appendix -A, are maintained in optimum operational condition. For the purpose, the successful bidder shall ensure following:

a. Quarterly preventive maintenance.
b. Call based visits to address system malfunction/ technical issues.
c. Regular cleaning of all the gadgets.
d. Checking the System health at site and maintain proper record thereof.
e. The following data should be maintained at site.
    i. Proper inventory of all equipment containing details of specification.
    ii. Date of maintenance carried out.
    iii. Next due date of maintenance.
    iv. Present operational status.
f. Any spares/ components required to be replaced/will be replaced with same brand or equivalent brand or a higher brand free of cost.
g. No labor charges will be paid.

D. A technically qualified supervisor/technician to be provided on call at the site i.e. at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur for maintenance of all the installed gadgets provided at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur as per RFP schedule and for any contingency coming in during the contract period. The identified firm has to ensure 100% functionality of all the gadgets installed.

a. Agency/Firm should deploy additional technicians in case of heavy

workload or in case of urgency to complete the work promptly in time, the emergency breakdown calls must be attended within 3 hours from time of reporting. Agency/Firm should also deploy additional technician to undertake quarterly Preventive Maintenance schedules of all the gadgets installed in the 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur.

b. The technician shall wear the identity card and shall be bound by the security/norms/instructions of the Bank from time to time.
c. The technicians working are to be covered by insurance under Workman Compensation Policy through reputed insurance companies at the vendor's cost during the contract period. Copies of the insurance policies are to be submitted to the Bank along with first quarter bill.
d. Whenever technician is attending to repairs and services the information and location where repairs and services being carried out must be recorded in the Movement Register existing in the security control room at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur along with time at which they have left. On returning the same to be recorded.
e. The attending technician/supervisor shall make necessary endorsement in the following register/report:-
    i. Complaint/Breakdown Register: All complaints received are to be recorded with time and date of receipt, as and when complaints are received. Details of attending the complaint and making the equipment serviceable with time and date.
    ii. Service reports are to be made after carrying out repair work and endorsement (Sign and Seal) to be obtained from the security officer.
    iii. Spares and parts replaced to be recorded and endorsement from the security officer has to be obtained in register.
f. Apart from regular letter communications, all the E-Mail communications from SBI Security Department/Estate Department are to be treated as formal communication for all practical purposes.
g. The mobile number of the technician working at office must be registered with Security/Estate Department and whenever the numbers are changed the same must be intimated to the dept. The numbers registered must be accessible round the clock.
h. The mobile number, landline number and email id of the supervisor to whom the technicians are reporting and that of Top Management level is to be provided to Bank for Communication purpose.
i. All security and safety regulations and guidelines as per the applicable law

are to be followed. All guidelines/directions of Banks security division must be followed.

Note: The scope of the work includes replacement/repairs of any spares for the smooth running of all the security equipment/gadgets as mentioned in RFP without any additional cost.

j. For the System and other Software/hardware, the following will apply:

i. The vendor shall tie up with the concerned Software/Hardware providers at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur for support during the tenure of the contract. The Firm/Agency if not dealing in the software/hardware used at 5th Floor A & B-Wing SBI, Sector 11, GITC CBD Belapur and it is not his proprietary software/hardware, then he has to submit evidence in the form of an agreement he has entered into with the software/hardware vendor, which includes support from the software/hardware vendor for the proposed software/hardware for the full period required by the Bank during the period of contract.

ii. The vendor shall explicitly absolve the Bank of any responsibility/liability for use of system/application software/hardware already installed with the installed security equipment's. (i.e. the vendor shall absolve the Bank in all cases of possible litigation/claims arising out of any copyright/license violation) for software/hardware's published either by third parties, or by themselves.

iii. The vendor shall submit the inbuilt warranty certificate received from OEM on Hardware supplied with work completion report.

iv. Agency shall ensure that the equipment is not down at any time for want of spares/spare parts.

v. During the quarterly maintenance schedules, the technician will give training to the security staff available in the respective Control rooms/BMS operators/security staff.

vi. The vendor should undertake to implement the observations /recommendations of the Banks IS audit, Security Audit or any other audits conducted by the Bank or external agencies and any escalation in cost on this account will not be accepted by the Bank.

vii. During the period of the contract, due to any reason, if there is shortage of spares or the replacement of some gadget's same model is not available in the market, then the agency will provide another model, same brand with equivalent configuration or higher will have to be provided so that there is no equipment which is un-operational at any point of time.

viii. On account of negligence, commission, or omission by the technicians of the

Agency and if any loss or damage caused to the security equipment or to any other electronic equipment's of the Bank or its property, the Vendor shall indemnify/pay/reimburse the loss suffered by the Bank to its full present cost.

ix. The visits have to be carried out once in each quarter. However, there should be a minimum gap of 75 days between two visits.

x. No charges will be payable after each quarterly visit, subject to maintenance services.

xi. Visit be construed to be done only when the system is found to be functioning completely/fully. Vendor will submit service reports.

xii. Vendor will keep sufficient standby security equipment's and spares of essential kits or parts of the equipment all the time, as may be required to keep the downtime minimal.

k. Sub-Contracting: The vendor shall not assign or sub-contract, in whole or in part, its obligations to perform under the contract, except with the Bank's prior written consent. However, such restriction is not applicable for service repairs/maintenance, if being provided by the OEM's under vendors tie up or the Software/hardware providers, whose software/hardware is being used by the Bank.

APENDIX

Sr. No	PARTICULARS	MAKE	QTY	UNIT
1	**ACCESS CONTROL - CONTROLLER Supply, Installation, Testing and Commissioning of HID AERO TM X1100 (or higher version)** SITC of I guard WB Controller enclosure with Power Supply **HID AERO TM X1100 (or higher version)** Intelligent controller which support up to 4 readers, 7 inputs and 4 outputs or latest, Mounting: Mount to any wall surface, using four screws. For UL compliance, one or more gateways can be mounted inside a locking customer supplied NEMA-4 rated enclosure, Dimensions: 5.8" W x 4.825" H x 1.275" D (147.32 mm x 122.55 mm x 32.38 mm), Weight: 12.4 oz (.35 kg), Housing Material : UL94 polycarbonate Audio / Visual Indicators : Power LED and Communications LED, Operating Temperature : 32° to 120° F (0° to 49° C), Operating Humidity :5% to 85% relative, non-condensing, Storage Temperature : -67° to 185° F (-55° to 85° C), Communication Ports: Ethernet (10/100), Certifications: UL294 (US) Listed Component, CSA 205 (Canada), FCC Class A (US), ICES-003 Class A (Canada), CE Mark EN 301 489-3 EN 55022 EN 50130-4 (EU), C-Tick S/NZS CISPR 22 (Australia, New Zealand) & Korea (KCC), Operating Current (MAX) @ 12-24VDC : 1000mA Operating Current: (AVG) @ 12VDC: 625mA (with 2 iCLASS Readers), Supervised Inputs Power (MAX): 0.025W (5mA sink, 5V nominal) 0 to +5VCD Ref, Output Power (MAX) for individual field devices Wiegand / C&D Reader : 12VDC, 250mA each, Relay Outputs : 30VDC, 2Amp, resistive. Integration With SSI, Snehapadma, Cybernetics or HID Authorised Application	HID		NOS
2	ACCESS CONTROL - Supply, Installation, Testing and Commissioning of **HID I CLASSS E–RKLB40 BIO-METRIC READER / AMICO 3.5" READER (or higher version)** at OUT side of define Door, Two way Biometric Authentication, Enrollment Mode, Verification Mode.	HID		NOS
3	ACCESS CONTROL - Supply, Installation, Testing and Commissioning of **HID SignoTM20** Card READER at IN side of define Door, suitable to read Mifare, Proximate Card and SBI formatted HID cards.	HID		NOS
4	**ACCESS CONTROL - ELECTROMAGNETIC LOCK Supply, Installation, Testing and Commissioning of EM LOCK with all required accessories on define Door, Power Input through HID AERO TM X1100, 12V capacity, Electromagnetic mechanism for interlocking with all required Components. Holding Force: 1200 / 600 lbs**	Essl / EBELCO / BEL / W BOX		NOS

5	CABLING FOR ACCESS SYSTEM Supply, laying, Testing and Commissioning Providing and fixing 4core 1.5 Sq.mm. flexible shielded cable (with ISI mark stamped on the cable) including 20mm conduit (with ISI mark stamped on the conduit) with all accessories. Clamping need to be done at every 02 feet. (Finolex / Polycab or Equivalent approved by the Architect) .	Polycab/ Finolex/ RR cable		Mtr.
6	Access Software Integration Integration, Installation, Testing & Commissioning of Newly Installed Access Control Devices in existing Access Control Software i.e., SSI	_		Nos
7	CABLING FOR CCTV and Networking Communication Supply, laying, Testing and Commissioning of CAT 6 UTP cable solid cable, Conductor : 23 AWG (Solid) , META : Bare Copper, Insulation Material : HD-PE, OD : 61.mm +- 0.2 , Resistance Unbalance : 5% Max, Capacitance Unbalance : 330pF/100m, Delay Skew : < 45Ns, laying through conduit with required accessories.	D-link, Molex, Commscope, Finolex, R&M		Mtr.
8	NETWORK VIDEO RECORDER (NVR) Supply, Installation, Testing and Commissioning of Network Video Recorder having Minimum 64 Channel Input and hot swappable 16 SATA support minimum 10 TB by each SATA slot. Resolution : Minimum 1920*1080, Audio Output : Yes with latest Ports	ANY OUT OF **AXIS / ADOR / BOSCH / SAMSUNG / SONY / HONEYWELL / SIEMENS / CP PLUS**		Nos
9	CCTV CAMERAS Supply , Installation, Testing and Commissioning of **IP CAMERAS (STQC Complied)** S.I.T.C. of 4MP Motorized varifocal IR Dome Camera (indoor) and bullet (at outdoor), 1/2.8" CMOS Sensor, Compression H.264, H.264h, H265, H265+. Encoding - 4 Streams, Motorized Lens:2.8mm / 12mm, Protection IP67,IK10, Interoperability ONVIF, MicroSD Slot up to 128GB(min),Built in Mic with audio compression, Alarm I/O , Alarm events: Tripwire/Perimeter/Crowd/Foreign & Missing Object/ Fast Moving etc., NIR,WDR,3DDNR, HLC, Dual-ICR, AWB, AGC, BLC,1/1ch Audio I/O, 2/1ch, , USB, Built-in Mic, PoE, DC12V/AC24V, TVS 6000V Protection, MicroSD Slot up to 128GB, Material: Metal, IP66, IK10. Power supply12VDC/PoE/ePoE Operating Temp -40 to +60Degree Celsius, Humidity <95%, Complete as directed by the Architect.	ANY OUT OF **AXIS / ADOR / BOSCH / SAMSUNG / SONY / HONEYWELL / SIEMENS / CP PLUS**		NOS
10	NETWORK SWITCH FOR ACCESS CONTROL SYSTEM Supply , Installation, Testing and Commissioning of Switch 16-Port Gigabit smart Managed POE Switch	D-link, Netgear, Cisco		NOS

11	NETWORK SWITCH FOR CCTV CAMERA Supply, Installation, Testing and Commissioning of Switch MAKE: 16/24-Port Gigabit Smart Managed POE Switch, 24 X 10/100/1000BASE-T POE ports,4 x Gigabit RJ45/SFP Combo ports, Advanced L2 switching and security features, L2+ Static Routing, Optional "standard mode" or "surveillance mode" management user interface,193 W POE budget	D-link, Netgear, Cisco		NOS
12	Supply , Installation, Testing and Commissioning of surveillance Hard Disk into NVR for storing of CCTV Footage Make: WD purple, Model : WD80PUZX, Formatted capacity: minimum 10 TB ,Form factor 3.5-inch,Advanced Format (AF), RoHS compliant, Interface transfer rate,(max)2 Buffer to host: 6 Gb/s, Host to/from drive (sustained): 178 MB/s, Cache (MB) : 128, Performance Class :5400 RPM Class, Load/unload cycles : 300,000, Non-recoverable read errors per bits read : <1 in 1014, Average power requirements (W) Read/Write: 6.4, Idle: 5.7, Standby and Sleep :0.7, Temperature (°C, on the base casting) Operating: 0 to 65, Non-operating: -40 to 70, Shock (Gs) :30, Operating (2 ms, read/write) Operating (2 ms, read): 65, Non-operating (2 ms): 250, Acoustics (dBA)7 Idle: 20, Seek (average): 29, Height (in./mm, max): 1.028/26.1, Length (in./mm, max): 5.787/147, Width (in./mm, ± .01 in.): 4/101.6, Weight (lb/kg, ± 10%): 1.43/0.65.	Seagate (Skyhawk / Skyhawk AI) / Western Digital (purple) / Transcend /Sony		NOS
13	RACK FOR SWITCH MOUNTING Supply, Installation, Testing and Commissioning of 4U rack for mounting Network PoE Switch with 28 Port Patch Paneling and rack Dressing with 1Mtr. D-Link Patch Cable for Each Port. 4 SOCKET Spy Guard for Power Distribution for FAN and Switch.	Schneider or Equivalent		NOS
14	DISPLAY FOR CCTV Supply, Installation, Testing and Commissioning of 55 inches 4K Eye comfort display. HDMI ports 03 or more, USB 02 , VGA and LAN. TCO certified Make : LG / SAMSUNG / Sony	LG/ SAMSUNG / Sony		NOS

13. 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.	Format of Monthly Progress Report	Table V
6.	Proforma for Bulkage Test of Sand Register	Table VI
7.	Proforma for Silt Test Register	Table VII
8.	Proforma for Sieve Analysis of Fine Aggregate Register	Table VIII
9.	Proforma for Sieve Analysis of Coarse Aggregate Register	Table IX
10.	Proforma for Slump Test Register	Table X
11.	Proforma of Cube Test Register	Table XI
12.	Proforma for Hindrance to Work	Table XII
13.	Proforma for Running A/c. Bill	Table XIII
14.	Format of Measurement Book	Table XVI
15.	Format of Site Order Book	Table XVII
16.	Format For Application By Contractor For Extension Of Time.	Table XVIII
17.	Details of Insurance Policies	Table XIX
18.	Prebid Query Form	Table XX
19.	Guarantee Bonds of Civil Works Format of Guarantee to Be Executed by The Firm/ Contractor in Respect of the Work of Pre-Construction Anti-Termite Treatment	Table- XXI
20.	Proforma Of Guarantee Bond for Waterproofing Treatment to Basement (Walls & Bottom Slab), Underground Reservoir, Overhead Reservoir, Terrace, Staircase Tower & Sunken Floor of Washrooms.	Table- XXII

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 & BANK / (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. Received	Progressive Total	Item of work for which issued with approx. qty. work done in case of paint only	Date of issues	Quantity issued	Qty. returned at the end of the day	Total issued	Delay Balance at hand	Contractors initials	Site Engineers initials	Signature of ARCHITECT / (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

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			
	Fire Fighting Works			
7	Other work			

TABLE-V FORMAT OF MONTHLY PROGRESS REPORT

Name of work:

Progress report for the month:

Report No. :

Sr No.	Description	Approximate e quantity executed (Till Previous Month)	Details of work location where work is done	Approximate quantity executed (Current Month)	Total Quantity Executed
A.	**GENERAL INTERIOR WORK OF 5th FLOOR A & B WING**				
1	Preparation of structural Repair Work (Demolition)				
2	Structural Repair Work				
3	Grouting				
4	Waterproofing Work				
5	Masonry work				
6	Wood work				
7	Plastering work				
8	Flooring work				
9	Glazing work				
10	Roof treatment work				
11	Painting work				
12	Partition Work				
13	False ceiling Work				
14	Modular furniture work				
15	Fire Proof Doors				

B	**Electrical & Networking Work**				
1	Main Cabel work				
2	D.B.Work				
3	Electrical Wiring				
4	Raceway Work				
5	Data Cabling Work				
6	Telephone Cabling Work				
7	Electrical Light Fitting Work				
8	Network Room Work				
9	Fiber Cabling work				
10	UPS & Raw Power Wiring Work				
11	Data Testing Work				

C	**HVAC WORK**				
1	Ducting Work				
2	Roof Insulation Work				
3	Acoustic Insulation Work				

Sr No.	Description	Approximate e quantity executed (Till Previous Month)	Details of work location where work is done	Approximate quantity executed (Current Month)	Total Quantity Executed
4	Duct Spray Painting Work				
5	Collar Damper Work				
6	CFM Balancing Work				
7	Powder Coated Grills				

D.	**Fire Fighting & Sprinkler Work**				
1	Cabling Work				
2	Fire Panel Work				
3	Fixing Of Detectors				
4	Sprinkler Piping Work				
5	Fixing of Nozels				
6	Fixing of Valves				
7	P.A. System Wiring				
8	Speaker Fixing				

E.	**Security equipment work**				
1	CCTV Wiring				
2	Camera Fixing				
3	Access Control Wiring				
2	Access Control Device Fixing				
3	Fitting and fixtures				

F	**Cleaning Work and Handing over the Bank**				
1	Floor Cleaning				
2	Furniture Cleaning				

TABLE-VI

PROFORMA FOR BULKAGE TEST OF SAND REGISTER

Sr. No.	Date of Test	Volume of dust sand in Cylinder inundated & stirred	Volume inundated Sand in Cylinder	Percentage of Bulkage	Signature of Site Engineer	Signature of Contractor	Initial of BANK / Bank's representative (Periodical)
1	2	3	4	5	6	7	8

TABLE-VII

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 BANK / Bank's Representative (Periodical)
1	2	3	4	5	6	7	8	9

TABLE-VIII

PROFORMA SIEVE ANALYSIS OF FINE AGGREGATE REGISTER

Sr. No	Date of Test	Wt. of Material to be tested	Sieve as per I.S. designat on	Wt. of Sand retain ed in sieve	%retained in each sieve successively	Cumulative % retained in each sieve	F.M.	Signature of Site Engineer	Signature of Contractor	Signature of BANK / Bank's representative (Periodical)

TABLE-IX

PROFORMA OF SIEVE ANALYSIS OF COARSE AGGREGATE REGISTER

Sr. No.	Date of Testing	Wt. of Material to be tested	Nominal size of Aggregate	I.S. Sieve designation	Standard passing for graded aggregate. of nominal size	Test Result	Obtained passing	Signature of Site Engineer	Signature of Contractor	Signature of BANK /Bank's representative (Periodical)
1	2	3	4	5	6	7	8	9	10	11

TABLE-X

PROFORMA FOR SLUMP TEST REGISTER

Sr. No.	Date of Testing	Type of work for which slump taken	Specified slump		Slump Obtained		Signature of Site Engineer	Signature of Contractor	Signature of BANK / Bank's representative (Periodical)
			When Vibrators are used	When Vibrators are not used	When Vibrators are used	When Vibrators are not used			
1	2	3	4	5	6	7	8	9	10

TABLE-XI

PROFORMA OF CUBE TEST REGISTER

Date of taking Cube + Lime	Sample No.	No. of Cubes taken	Specific marking of Cubes	Proportion of mixture	Description of work carried out	Signature of Engineer taking sample	Signature of Contractor	7/28 Days Testing				Permissible Compressive strength of Concrete / 28 Days / 7 days		Remarks on Test Report and No.	Remarks of ARCHITECT /Bank's representative Periodical
								Date of Test	Test Result Kg / Sq. cm	Av. Strength Kg. / Sq. cm.	Standard strength Kg / Sq. cm.	7 Days	28 Days		
1	2	3	4	5	6	7	8	9	10	11	12	13		14	15

TABLE-XII

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:

S.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 BANK / Bank's Representative
1	2	3	4	5	6	7

TABLE XIII

PROFORMA FOR RUNNING A/C BILL

i. Name of Contractor / Agency
ii. Name of Work

iii. Sl. No. of this Bill

iv. No. & Date of previous Bill

v. Reference to Agreement No.

vi. Date of Written order to commence
vii. Date of Completion as per Agreement :

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

Up to 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.	_____ _____ Net Value since previous bill
	2. If ad-hoc payment is made, it should be mentioned specifically.	

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 Bank's 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 XIV

FORMAT OF MEASUREMENT BOOK
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 (Head of PMC) Bank (Head of Bank Consultant) Contractor

Checking/Test checking Bank's Engineer Date of checking/Test checking

NOTE:

Checking and test checking pertains to items wherever initialed.

Table XV

FORMAT OF SITE ORDER BOOK

Name of the work_____

Date of Commencement_____

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

Table XVI

Format for Application by Contractor for Extension of Time

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 XVII
DETAILS OF INSURANCE POLICIES

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.

Table XVIII

Pre-bid Query Form

All enquiries from the bidders elating to the RFP must be submitted exclusively to the contact person on the email id as per NIT.

The queries should necessarily be submitted on or before scheduled date and time mentioned in the following format:

Part A:

Sr. No.	Particulars	Details
1	Name of organization submitting request	
2	Name and designation of person submitting request	
3	Full formal address of the organization including mobile no. and email points of contact	
4	Mobile & Tel. no.	
5	Email ID	

Part B:

Sr. No.	Bidding document reference (Claus number / Page)	Content of RFP requiring clarification	Points of clarification required.
1			
2			

Place:

Date: Sign & Stamp of Authorized signatory / Applicant

Table- XIX

Guarantee Bonds of Civil Works FORMAT OF GUARANTEE TO BE EXECUTED BY THE FIRM/

CONTRACTOR IN RESPECT OF THE WORK OF PRE-CONSTRUCTION ANTI-TERMITE TREATMENT

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

The agreement made this Day of_____ Two Thousand_____ between Assistant General Manager, Estate Department, GITC, State Bank of India, Navi Mumbai of one part and_____ (Name of the Firm/ Contractor (hereinafter called the Guarantor) of the other part.

WHEREAS THIS AGREEMENT is supplementary to the Contract (hereinafter called the Contract dated made between the Employer of the one part and the Guarantor of the part) whereby the Firm/Contractor interlaid undertook to render the building/ structure completely free of any infestation of termites, and whereas the Guarantors agreed to give guarantee to the effect that the said building/ structure shall remain free from infestation for the period of 10 years from the date of Completion of pre-construction anti-termite treatment as per IS Code.

Now the Guarantor hereby agrees to make good all defects and render the building/ structure free from any infestation of termites, during this period of guarantee and to the satisfaction of the employer. The Guarantor also agrees to take up such rectification work at his own cost, and within one week from the date of issue of notice from the Employer, calling upon him to rectify the defects.

The decision of the Employer as to the cost by the Guarantor will be final and binding in the case, the Guarantor fails to commence the work as per the above notice and the work is got done through the other Contractor, that if the Guarantor fails to execute the preconstruction anti-termite treatment or commits breach thereunder then the Guarantor will indemnify the principal and his successors against all loss, damaged caused, expenses otherwise which may be incurred by him by any reason of any default on the part of the Guarantor in performance and observance of this agreement, as to the amount of loss and /or damage and / or cost incurred by the Employer, the decision of the Employer will be final and binding. In witness where of these presents have executed by the obligator and by and for of behalf of the Employer on the day, month and year first above written,

Signed
and delivered by State Bank of India, by
In the presence of

Signed and delivered by the hands of
Contractor
In presence of

Table- XX

PROFORMA OF GUARANTEE BOND FOR WATERPROOFING TREATMENT TO BASEMENT (WALLS & BOTTOM SLAB), UNDERGROUND RESERVOIR, OVERHEAD RESERVOIR, TERRACE, STAIRCASE TOWER & 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, staircase tower, Lift Pits, Sumps, Basement rafts, Retaining Walls, podiums, Windows Sills, Lintels & 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)

DECLARATION

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

I/We have inspected all the sites of the Proposed Work as mentioned in clause No. 1 of NIT, 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.

We hereby declare that we are neither blacklisted nor debarred by the Bank for any work/project. Further we have a valid GST and PAN No.

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; Labor 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 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 SBI in time and also shall uniformly maintain such progress as may be directed by the 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.