THE REGIONAL MANAGER,
BANK OF BARODA - , AHMEDABAD REGIONAL OFFICE - II,
P & E DEPARTMENT, 1ST FLOOR, DENA LAXMI BHAVAN,
ASHRAM ROAD, NAVRANGPURA, AHMEDABAD – 380 009, GUJARAT.

बैंक ऑफ़ बड़ौदा Bank of Baroda

Bank of Baroda, Ahmedabad Region-II, Ahmedabad Zone invites sealed Tenders from vendors for Proposed Civil & Electrical - Renovation Works at BOB - Bhadra Branch (Existing Premises)

NOTE: **3 NOS. OF ENVELOPES SHALL BE SUBMITTED IN FOLLOWING MANNER:**

1) TECHNICAL BID WILL BE SUBMITTED IN SEPARATE ENVELOPE NO.-1 ALONG WITH EMD & MANDOTORY INFORMATION WITH SUPPORTING DOCUMENTS SUPERSCRIBED AS:

"PART A - TECHNICAL BID FOR CIVIL & ALLIED WORKS AT BOB - BHADRA BRANCH, BOB – AHMEDABAD REGION-II."

2) PRICE BID WILL BE SUBMITTED IN SEPARATE ENVELOPE – 2 SUPERSCRIBED AS:

"PART B - PRICE BID FOR CIVIL & ALLIED WORKS BOB - BHADRA BRANCH, BOB – AHMEDABAD REGION-II."

3) ENVELOPE-1 & 2 SHALL BE SUBMITTED IN ENVELOPE – 3 SUPERSCRIBED AS:

"TENDER FOR CIVIL & ALLIED WORKS AT BOB - BHADRA BRANCH, BOB – AHMEDABAD REGION-II."

4) TENDERS NOT MENTIONED IN ABOVE MANNER WILL BE SUBJECTED TO REJECTION. ALL ENVELOPES SHALL MENTION ADDRESS/NAME OF THE FIRM.

निविदा शुरू होने की तारीख / Start date of Tender – 04.10.2024,
निविदा जमा करने की अंतिम तिथि /Last date of submission of Tender-17.10.2024, 17:00 HRS.

तकनीकी खोली जाएगी/Opening of Technical Bids on 18.10.2024, 11:30 HRS.
साइट स्थान पर पूर्व बोली बैठक /Prebid Meeting at Site Location–11.10.2024, 12:00 HRS.
मूल्य बोलियां खोली जाएगी/Opening of Price Bids: ONLY ELIGIBLE TENDERER SHALL BE INFORMED (VIA EMAIL/TELEPHONE) SEPARATELY

…… Bidders Signature with Stamp and date

भाग / PART – I,

तकनीकी बोली, TECHNICAL BID

TECHNICAL BID WILL BE SUBMITTED IN SEPARATE ENVELOPE NO.-1 ALONG WITH EMD & TENDER FEES, & MANDOTORY INFORMATION WITH SUPPORTING DOCUMENTS SUPERSCRIBED AS:

"PART A - TECHNICAL BID FOR CIVIL & ELECTRICAL - RENOVATION WORKS AT BOB-BHADRA BRANCH, BOB – AHMEDABAD REGION – II, AHMEDABAD."

NOTICE INVITING TENDER

Details of tenders are as under:

- **NAME OF WORK: PROPOSED CIVIL & ELECTRICAL RENOVATION WORKS AT BOB-BHADRA BRANCH** (EXISTING PREMISES).
- Time allowed for completion : **45 Days** (Including Sundays & Public Holidays)
- **Sanctioned Estimate** : **Rs. 26, 88,920/-** (18% GST Extra)
- **Earnest Money Deposit** **: Rs. 26,900/-** to be submitted in the form of D.D. only in favor of Bank of Baroda, Payable at Ahmedabad valid for 90 days. *(Exempted for NSIC/MSME for valid certificate. Certificate to be attached.)*
- **Cost of Tender documents** **: NIL/-**
- Security Deposit for Defect's Liability Period : 5% of contract value
  Availability of Tender Documents : Bank of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat from **04.10.2024 to 17.10.2024** during Office Hours i.e. 10:00 Hrs. to 17:00 Hrs. (except on Sundays and Holidays).
  The Tender may also be downloaded from Bank's website: www.bankofbaroda.com/tender.asp
- Last date and time of receipt of tenders : **Up to 17:00 HRS. on 17.10.2024**
- Pre-bid Meeting to be Held on **11.10.2024, 12:00 HRS** at BOB Bhadra Branch (Existing Premises) located at Bhadra, Ahmedabad City.
- Address at which the tenders are to be submitted : Bank of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat. Tenders to be dropped in the tender box placed in the above office.
- Date and time of opening of tender : Technical Bid– **18.10.2024 AT 11:30 HRS.**
- Date and time of opening of tender : Price Bids – Only Eligible Tenderer Shall Be Informed (Via Email/Telephone) Separately.
- Place of opening tenders : Bank of Baroda – Bank of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat
- Defects Liability Period : 12 Months from the date of completion certificate issued by the Bank Engineer/ Architect.
- Validity of offer : 90 days from the date of opening of price bid of tender.
- Liquidated Damages : 1.0% per week subject to maximum of 10% of the accepted contractsum.
- Tender will be issued in single part: Containing terms and conditions, specifications etc. and Bill of Quantity which shall have to be filled up as the Price Bid.
- Tender shall have to be submitted in Single Cover (as mentioned in first page), addressed to Bank of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat. e-mail - pe.ahmedabad2@bankofbaroda.com. Contact No.: +9179-26594213
- Cover shall be super scribed **"PROPOSED CIVIL & ELECTRICAL - RENOVATION WORKS AT BHADRA BRANCH, AHMEDABAD".**
- Cover-: Shall contain tender document signed and sealed on each page by authorized signatory.
- Cover of the tender shall also contain the following:
  (a) List of deviation, if any, in commercial terms & condition, in technical specification.
  (b) Any other technical information the tenderer wishes to furnish.

..... *Bidders Signature with Stamp and date*

(c) Technical Literature/Catalogues of the equipment being offered along with related drawings.

- Cover-II: Shall contain the offered price in INDIAN RUPEES only with detailed break up of price as per Bill of Quantity duly filled. Other than an unconditional general rebate, no other condition stipulated in Cover-II shall be accepted.
- Cover of Technical Bids will be opened on **18.10.2024 at 11:30 HRS** in the presence of Tenderers who desire to attend. Acceptable tenderers will be intimated about the date and time of opening of price bid. Cover II shall be opened at the price bid opening and for each tender shall be read in conjunction. They shall carry with them such an authorization letter from the company to the opening. In order to expedite the process, the representatives deputed by the tenderers at the time of tender opening should also be authorized to take the decision on behalf of the tenderers.
- Delays in submission of any document arising out of the postal irregularities/or any other reason at any stage will not be considered. Also, the Bank will not be responsible for damage to tender in transit in case of postal/courier delivery. Late tenders will not be accepted.
- In case the date of opening of tenders is declared as a holiday, the tenders will be opened on the next working day at the same time. All bidders are requested to present at time of opening of Technical Bids.
- Bank has the right to accept/reject any/all tenders without assigning any reasons.
- Any Corrigendum/addendum, if any, shall be issued only on Bank's web site. Kindly visit our Bank's website before submission of Tender.
- Mobilization Advance: NIL.
- All Laisioning/ licensing/ compliance/ approvals work for the statutory requirement shall be in the scope of the Vendor.

For and behalf of Bank of Baroda

ELIGIBILTY CRITERIA:

- **Average financial turnover during the last -3- years, ending 31st March 2024, should be at least Rs 50.0 lakhs.**
- **Experience of having successfully completed similar works during last -7- years ending on 31.03.2024 should be either of the following:-**
- **Three similar completed works costing not less than the amount equal to 40% (i.e. ₹ 10, 76,000) of the estimated cost.**

Or

- **Two similar completed works costing not less than the amount equal to 50% (i.e. ₹ 13, 50,000) of the estimated cost.**

Or

- **One similar completed work costing not less than the amount equal to 80% (i.e. ₹ 21, 52,000) of the estimated cost.**

- **Similar Works means Civil & Electrical works of same nature /magnitude carried out for Govt./Public Sector Organizations, banks, public sector financial institutions, involving Civil & Electrical works as mentioned in the BOQ of this tender.**

- **Submit the Copy of Electrical License of Electrical Vendor assigned by the Main Bidder for this particular tender.**

…… Bidders Signature with Stamp and date

DATE: 04.10.2024

THE REGIONAL MANAGER,
Bank of Baroda – Ahmedabad Regional Office - II,
1st Floor, Dena Laxmi Bhavan, Ashram Road,
Navrangpura, Ahmedabad

Dear Sir,

Having examined the drawings, specifications, designs and bill of quantities, relating to the works specified in the memorandum hereinafter set out and having 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 bill of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in condition of tender, appendix to the formof tender, articles of agreement, conditions of contract, bill of quantities and with such materials as areprovided for, by, and in all other respects in accordance with such conditions so far as they may be applicable.

MEMORANDUM

Description of works	**PROPOSED CIVIL & ELECTRICAL - RENOVATION WORKS AT BOB-BHADRA BRANCH (EXISTING PREMISES), AHMEDABAD, GUJARAT.**
Earnest money deposit	**Rs. 26,900/-** to be submitted in the form of D.D. only in favor of Bank of Baroda, Payable at Ahmedabad valid for 90 days. *(Exempted for NSIC/MSME for valid certificate. Certificate to be attached.)*
Security deposit	Total 5% of the contract value consisting of Initial Security Deposit 2% of contract value including the Earnest Money Deposit & retention amount @ 08% to be deducted from the running bills subject to maximum of 5% of the contract value including Initial Security Deposit.
Time allowed for completion	**45 Days** from the date of commencement

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 they may be applicable or in default thereof to forfeit and pay to **BANK OF BARODA** the amount mentioned in the said conditions.

All information and documents as required to be submitted with the tenders.
Our bankers are
The names of partners of our firm are
Name of the partner(s) of the firm authorize to sign:
Name of the persons having power of attorney to sign the contract (certified true copy of the power ofattorney should be attached.
Yours faithfully,

Place: Signature of contractor

Date: Signature and addresses of witnesses

…….. Bidders Signature with Stamp and date

APPENDIX TO FORM OF TENDER

Item	Reference No	Description
Contract value	As per GCC	Total value of the tender as accepted by the employer. The rate quoted shall be firm and shall include all costs, allowances, taxes,levies etc Including GST as well as all other costs like transportation, handling etc.
Date of commencement	37 of GCC	-07- days from the date of work order or the date of instruction for taking possession of site, whichever is later.
Time of completion	39 of GCC	**45 days** from the date of Commencement.
Liquidated damages for delay	43 of GCC	0.5% per week subject to maximum of 10% of the accepted contract sum
Defect liability period	32 of GCC	12 months from the date of completion certificate issued by the Bank.
Earnest Money deposit		Nil
Insurance	36 of GCC	As per clause 36 of GCC
Minimum value of RA bills	47(b) of GCC	**No Interim Bill considered.**
Payment of RA bill	47(c) of GCC	NA
Initial Security Deposit		The successful tenderer will have to submit a sum equivalent to 2% of contract value less EMD through submit online through NEFT/RTGS as given account details in NIT within a period of 04 days of placement of work order.
Submission of final bill	47(e) of GCC	Within 15 days from the date of final completion as certified by the Engineer.
Payment of final bill	47 (i) of GCC	Within 20 days from the date of submission of the final bill by the contractor
Retention Money		8% of gross value of work in Running bills to a maximum of Balance Security Deposit
Security Deposit		Total security deposit shall be 5% of contract value. Out of this 2% of contract value is in the form of Initial Security Deposit plus EMD. Balance 3% shall be deducted from the running account bill of the work at the rate of 8% of the respective running account bill i.e. deduction from each running bill account will be 8% till total 3% of contract value is reached. 50% of the total security shall be paid to the contractors on the basis of Bank Engineer's / Architect's certification on virtual completion of work. The balance 50% would be paidto the contractors without interest within 30 days after the end of the defect liability period provided the contractor has satisfactorily attended to all defects in accordance with the conditions of contract including site clearance.No interest shall be paid to the amount retained by the Bank as Security Deposit.
Price variation	28 of GCC	Firm price. No escalation
Signing of contract Documents		The successful tenderer shall be bound to implement the contract by signing an agreement and conditions of contract attached herewith within 07 days from the receipt of intimation of acceptance of his tender by the Bank. However, the written acceptance of the tender by the Bank Engineers on behalf of the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered into or not.
AMC (optional)		AMC is optional and binding on contractor for minimum period of -05- years. Half yearly satisfactory report shall be produced by contractor during DLP/AMC. Payment for AMC will be made half yearly on providing satisfactory services.

ARTICLES OF AGREEMENT

(**Duly Notarized**)

ARTICLE OF AGREEMENT made this ..... day of **TWO THOUSAND TWENTY FOUR (2024)** BETWEEN the **BANK OF BAORDA**, a company incorporated and registered under the Companies Act, 1956 and having its office at **The REGIONAL MANAGER, Bank Of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat** hereinafter called "Employer" (which expression shall include its successors and assigns wherever the context ormeaning shall so require or permit, of the one part and .....
.....
(Hereinafter called the "Contractor") (Which expression shall include its successors and assigns wherever the context or meaning shall so require or permit) of the other part.

WHEREAS the Employer is desirous of carryout the **Proposed Civil & Electrical – Renovation Works At Bob-Bhadra Branch (Existing Premises) Located at Bhadra, Ahmedabad City.** As mentioned, and has got drawings, specifications and the bill of quantities prepared by theirArchitects/Consultants which have been signed or on behalf of the parties hereto.

AND WHEREAS the Contractor has agreed to execute upon and subject to the conditions set forth herein and to the conditions set forth in the special conditions and in the Bill of Quantities and conditions of contract (all of which are collectively hereinafter referred to as "The said terms & conditions", the works, shown upon the said drawings and/or described" in the said specifications and included in the said bill of quantities at the respective rates therein set forth amounting to the sum as therein arrived at or such other sum as shall become payable there under (herein after referred to as the said "contract value").

NOW IT IS HEREBY AGREED AS FOLLOWS:

01 In consideration of the said Contract Value to be paid at the times and in the manner setforth in the said terms & conditions; the contractor shall upon and subject to the said terms & conditions execute and complete the works shown on the said drawings, and described in the specifications and/or bill of quantities.

02 The Employer shall pay the contractor The Said Contract Value or such other sum as shall become payable at times and in the manner specified in the said terms & conditions.

03 The said terms & conditions and Appendices thereto shall be read and construed as forming part of this Agreement and the parties hereto shall respectively abide by submit themselves to the said terms & conditions and perform the agreements on their part respectively in the said terms & conditions contained.

04 The contract is neither a fixed lump-sum a contract nor a piece work contract but is a contract to carry out the work in respect of the entire work as defined in the contract documents to be paid for according to actual measured quantities at the rates contain in the bill of quantities or as provided in the said contract documents.

05 The contract shall afford every reasonable facility for the carrying out of all works relating to DG Sets in the manner laid down in the said conditions, and shall make good any damages done to walls, floors, etc. after the completion of such works.

06 The Employer 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.

07 Time shall be considered as the essence of this Contract and the Contractor hereby agrees to commence the work from date of Letter of Acceptance and to complete the entire work within **45 days** subject nevertheless to the provision for extension of time.

08 All payments by the Employer under this contract will be made only at Ahmedabad Regional Office - II.

09 All disputes arising out of or in any connected with this agreement shall be deemed to have arisen at Ahmedabad and only court in Ahmedabad shall have jurisdiction to determine the same.

10. That the several parts of this Contract have been read by the Contractor and fully understood by the Contractor. The Contractor shall not be entitled for the payment for the quantities beyond the tendered quantities unless ordered for by specific written instructions from the engineer.

IN WITNESS WHEREOF THE Employer and the Contractor have set their respective hands to these presents and two duplicates hereof the day and year first hereinabove written. (If the contractor is a partnership or an individual).

IN WITNESS WHEREOF the Employer has set its hand to these presents through its duly authorized official and the Contractor has caused its common seal of to be affixed hereunto and the
said two duplicates/has caused these presents and the said two duplicates hereof to be executed on its behalf, the day and year first hereinabove written (If the Contractor is a company).

..... *Bidders Signature with Stamp and date*

Signature Clause
SIGNED & DELIVERED by the **BANK OF BARODA**
By the hand of Shri_____Name and Designation)
in the presence of
(1)_____Address_____

(2)_____Address_____
Witness

SIGNED AND DELIVERED BY _____ in the presence of
(1)_____ Address _____
(2)_____ Address _____

If the party is a partnership firm of an individual should be signed by all or onbehalf of all partners.

Witness

THE COMMON SEAL OF _____
Was hereunto affixed pursuant to the resolutions passed by its Board of Directors at the meeting held on_____in the presence of
(1) _____
(2) _____

Directors who have signed these presences intoken thereof in the presence of

(1) _____

(2) _____

If the contractor signs under its common seal the signature clause should tally with the sealing clause in the Articles of Association.

SIGNED AND DELIVERED by the contractor by the hand of Shri _____
And duly constituted attorney

If the Contractor is signing by the hand ofpower of attorney whether a company or individual.

..... *Bidders Signature with Stamp and date*

GENERAL CONDITIONS OF CONTRACT

01. Definitions & Interpretations

In construing these conditions, the Specifications, Bill of quantities and Contract Agreement etc. the following words shall have the meaning herein assigned to them except where the subject or context otherwise requires.

01a "Employer" / "Owner" means – **Regional Office - II Under Ahmedabad Zone having Bank of Baroda – Ahmedabad Regional Office - II, 1st Floor, Dena Laxmi Bhavan, Ashram Road, Navrangpura, Ahmedabad – 380 009, Gujarat** and includes the Employer's representatives, successors and assigns.

01b "Architect" means project Architect Appointed by the Bank of Baroda**.**

01c "Engineer" means "Bank's Engineer" or their authority's nominees and representatives or such other firm / persons, as shall be nominated by the Employer.

CONTRACTOR shall mean: -

In the case of a Partnership firm: -_____and_____ trading as partners in the name and style of_____& having a place of business at _____and shall include the partners for the time being of the said firm and the legal representatives of a deceased partner.

In the case of individual Contractor: - Shri _____ trading in the name and style of _____ and shall include his heirs, successors and legal successors and legal representatives. In the case of Company: -_____a company incorporated under_____2024 and having its registered office at_____and office at_____and shall include its successors and assignee.

"Site" shall mean the site of the contract works including any building and erections thereon and any other land (inclusively) as aforesaid allotted by the Employer for the Contractor's use.

"Contract" shall mean the following documents, all duly signed, collective in that order of precedence.

a. Articles of Agreement
b. Letter of acceptance of tender / award of work
c. Special Conditions of Contract
d. General conditions of contract including clarifications / conditions accepted after the Pre-bid Meeting.
e. Drawings
f. Specifications
g. Bill of Quantities

"Notice in writing" or "written notice" shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post, it would have been delivered.

"Act of Insolvency" shall mean any Act of Insolvency as defined by the Presidency Towns insolvency Act, or the Provincial Insolvency Act or any Act amending such original.

"Net Prices" : If in arriving at the contract amount, the Contractor shall have added to or deducted from the total amount of the items in the Tender any sum, either as a percentage or otherwise, then the net price of any item in the tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the Tender as the price of that item and similar percentage or proportionate sum provided always that in determining the percentage or proportion of the sum so added or deducted by the Contractor, the total amount of any Prime Cost items and provisional sums of money shall be deducted from the total amount of the tender. The expression "net rates" or "net prices" when used with reference to the contract or accounts shall be held to mean rates or prices so arrived at.

"Works" means the permanent works described in the "Scope of Work" and / or to be executed in accordance with the Contract and includes materials, apparatus, equipment, temporary supports, fittings, and things of all kinds to be provided, the obligations of the Contractor hereunder and work tobe done by the Contractor under the contract.

"Drawings" means the drawings prepared by the Architects and issued by the Engineer and referred to in the Specifications and any modification of such drawings and such other drawings as may be issued by the Engineer from time to time.

"Bill of Quantities" means the Schedule and Quantities of items, materials & rates, summaries, etc. as finally accepted.

"Specification" means the specifications given in these documents including relevant Indian standard specification where so required and where such a specification is not available, the specification approved by the Architect.

"Temporary Works" means all temporary works of every kind required in or about the execution, completion or maintenance of the works.

"Materials" means the materials, apparatus, equipment's, fittings, fixtures and all such other material, which are incorporated in the 'work".
"Virtual Completion of the Works" means the completion of the whole of the works substantially in all respects as evidenced by issuance of a Certificate of Virtual Completion by the Engineer in pursuance ofabove Clause of the General Conditions of Contract.
"Period of Maintenance / Defect Liability Period" shall mean the period of 365 days (Three hundred sixty-five) calculated from the date of virtual completion of the works as certified by the Engineer. "Urgent Works" means any urgent works, which in the opinion of the Engineer / Employer becomesnecessary at the time of execution and / or during the progress of work to obviate any risk of accidentor failure or to obviate any risk of damage to the structure or services or required to accelerate theprogress of work for which becomes necessary for safety and security or for any other reason, theEngineer / Employer may find it necessary.
"Market Rate" means the rate as decided by the Engineer / Employer on the basis of cost of materials at site inclusive of any tax, duty, octroi etc. at the time of execution of work.
"Approved" means approved in writing; "Approval" means approval in writing."Month" means calendar month.
"Week" means seven consecutive calendar days.
"Day" means a calendar day beginning and ending at 00 Hours and 24 hours respectively,"Contract Value" means the total value of the tender as accepted by the Employer.
Interpretations / Marginal Note / Heading / Catch Lines.
The Marginal Notes, Headings and in the catch lines hereto and in the annexure hereto are meant only for convenience of reference and shall not in any way be taken into account in the interpretation of these presents and the annexure hereto.
The Contractor will have to carry out and complete the said work in every respect in accordance with this contract.
Words imparting the singular only also include the plural and vice versa where the context requires.

02. Language(s)

The language in which the Contract documents shall be drawn up shall be English only.

03. Errors, Omissions and Discrepancies

3a 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 of precedence shall apply:
3a1 Between scaled and written dimension (or description) on a drawing, the latter shall be adopted.
3a2 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.
3a3 Between the written description of the item in the specifications & descriptions in the Bill of Quantities of the same item, the former shall be adopted.
3a4 In case of difference between the rates written in figures and words, the rate in words shall pre-vail.
3a5 Between the duplicate / subsequent copies of the tender and original tender, the original tender shall be taken as correct.
3a6 In all cases of omissions and / or doubts or discrepancies in any of the items or specifications, a reference shall be made to the Architect whose elucidation; elaboration or decision shall be consideredas authentic and binding.

04. Scope of Contract

The Contract comprises the construction, completion and maintenance of the works and except in sofar as the Contract otherwise stipulates the provision of all labour, materials, constructional plant, Machinery temporary works and everything whether of a temporary or permanent nature required in and for such construction, completion and maintenance so far as necessary for providing the same as specified in or reasonably to be inferred from the Contract.

05a **Letter of Acceptance / Award**

Before signing of the Contract, the Employer shall issue by registered post or by otherwise depositing at the registered office of the Contractor, Letter of Acceptance / Award to enter into a Contract with the Contractor for the execution of the works in accordance with the contract. Until a formal contract agreement is prepared and executed, the tender documents i.e. Volume I, II, III & set of drawings together with the relevant correspondence exchanged from receipt of the tender to acceptance and together with the Employer's letter of Acceptance / Award shall constitute a binding contract between the parties.

05b **Contract Agreement**

On receipt of intimation from the Employer of the acceptance of his / their tender, the successful tenderer shall be bound to implement the contract and within seven days thereof, the successful tenderer shall sign an agreement in accordance with the draft agreement.

06. Custody of Drawings & Specifications

The Contract shall be executed in quadruplicate and the Employer, the Architect, the Engineer and the Contractor shall be entitled to one executed copy each for their use. The Contractor on the signing hereof shall be furnished by the Engineer free of cost two copies of all tender Drawings and all further Drawings issued during the progress of the works. Any further copies of such Drawings required by the Contractor shall be obtained by him from the Architect on payment of necessary charges to be fixed by the Architect. The Contractor shall keep one copy of all Drawings at the works site and the Employer
/ Architect / Engineer shall at all reasonable time have access to the same. Before the issue of the final certificate to the Contractor, he shall forthwith return to the Engineer all Drawings and Specifications.

07. Disruption of Progress

The Contractor shall give adequate but not less than 3 weeks' time written notice to the Engineer whenever planning or progress of the Works is likely to be delayed or disrupted unless any further drawing or order, including a direction, instruction or approval, is required to be issued by the Engineer. The notice shall include details of the drawing or order required explaining why and by when it is required and of any delay or disruption likely to be suffered if it is late.

08. Further Drawings and Instructions

The Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Engineer. The Architect / Engineer may in his absolute discretion and from time to time issue further drawings and / or written instructions, details, directions and explanations which are hereafter collectively referred to as "Engineer's / Architect's Instructions" in regard to: -

08a Any discrepancy in the Drawings or between the Bill of Quantities and / or Drawings and / or Specification. BOQ will supercede drawings in case of discrepancy.

08b Removal from the site of any material brought by the Contractor which is rejected by PMC.

08c Removal and / or re-execution of any works executed by the Contractor if found not as per specifications / BOQ.

08d The dismissal from the works of any persons employed thereupon.08e the opening up for inspection of any work covered up.

08f The amending and making good of any defects under Clause 30 hereof.

The Contractor shall forthwith comply with and duly execute any work comprised such Engineer's / Architect's instructions provided always that verbal instructions, directions and explanations given to the Contractor or his representative upon the works by the Engineer shall, if involving a variation, be confirmed in writing by the Contractor within seven days, and if not dissented from in writing within a further seven days by the Engineer, such shall be deemed to be Engineer's / Architect's instructions within the scope of the Contract.

09. VOID

10. Contractor's General Responsibilities

The Contractor shall provide at his cost everything necessary for the proper execution of the works according to the intent and meaning of the Drawings, Bill of Quantities and Specifications taken together with whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from, and if the Contractor finds any discrepancy in the Drawings or between the Drawings, Bill of Quantities and Specifications, he shall immediately and in writing refer the same to the Engineer who shall decide which is to be followed after consultation with Architect.

The successful tenderer is bound to carry out any items of work necessary for the completion of the job even though such items are not included in the Bill of Quantities and rates. Instructions in respect of such additional items and their quantities will be issued in writing by the Engineer with the prior consent in writing of the Employer.

The Contractor must co-operate with the other contractors appointed by the Employer so that the work shall proceed smoothly to the satisfaction of the Engineer.

The Contractor must bear in mind that all the work shall be carried out strictly in accordance with the Specifications as given in these documents and also in compliance of the requirements of the local public authorities and to the requirements / satisfaction / direction of the Engineer and no deviation on any account will be permitted.

The Contractor shall have to use materials from the makes / manufacturers specified in the list of materials of approved brand and / or manufacture contained in contract documents and as approved by Employer / Architect.

11. Safety of Site Operations

The Contractor shall take full responsibility for the safety, stability and adequacy of all site operations and methods of construction including all temporary works, provided that the Contractor shall not be responsible, except as may be expressly provided in the Contract, for the design or specification of the permanent works. The contractor shall maintain safety as per Standard Industrial Safety Code or anyother Code approved by the Engineer.

12. Watching & Lighting

The Contractor shall in connection with the Works provide and maintain at his own cost adequate lights, guards, fencing, warning signs and watch & ward staff when and where necessary or as directed by the Engineer or as directed by duly constituted authority for the protection of the works or for the safety and convenience of the public or pilferage of materials from site.

13. Care of Works

From the commencement to the certified completion of the whole of Works, the contractor shall take full responsibility for the care thereof and of all Temporary Works and in case any damage loss or injury shall happen to the works or to any part thereof or to any Temporary Works from any cause whatsoever the Contractor shall at his own cost repair and make good the same so that on completion, the works shall be in good order and condition and in conformity to every respect with the requirements of the Contract and the Engineer's / Architect's instructions. The Contractor shall also be liable for any damage to the Works occasioned by him including his subcontractors in the course of any operations carried out by him for the purpose of completing any outstanding work and complying with his obligations under Clause 32 hereof. The Contractor shall indemnify the Employer from all risks on this account.

14a. **Contractor's Senior Representative for Execution & Coordination of Works**

The Contractor shall have on site at all times during working hours throughout the course of the Contract at least one competent senior representative who shall be empowered to make decisions binding on the Contractor in respect of all matters likely to arise in connection with the execution & coordination of the Works at site and shall keep the Engineer and the Employer informed at all times about the name and designation of such representative. Contractor's Senior Representative shall have the power to take joint measurement and sign the measurement books / bills.

Any directions, explanations, instructions or notices given by the Engineer to such representative shall be held to be given to the Contractor.

14b **Contractor's Employees**

The Contractor shall provide and employ after approval from the Engineer on the site in connection with the execution, completion and maintenance of the Works all Engineering staff / technical assistants as are qualified, skilled and experienced in their respective trades, foremen and leading hands as are competent to give proper supervision, ensuring quality & output to the work they are required to supervise, and also such skilled, semi-skilled and unskilled labour as are necessary for the proper andtimely execution, completion and maintenance of the works.

14c **Removal of Contractor's Employees**

The Contractor shall on the direction of the Engineer immediately dismiss from the works any personemployed thereon by him who may, in the opinion of the Engineer, be incompetent or misconduct himself and such person shall not be again employed on the works without the permission of the Engineer.

14d **Unauthorized Persons**

No unauthorized persons are to be allowed on the site. The Contractor shall instruct all such persons tokeep out and shall take steps to prevent trespassing.

15. Compliance with Statutes, Regulations, Etc.

The Contractor shall conform to the provisions of any Act of the legislature relating to the works, andto the regulations and bye-laws of any authority, and of any water, electric supply and other companies and / or authorities with whose systems the structure is proposed to be connected, and shall, before making any variations from the Drawings or Specifications that may be necessitated by so regulations, give to the Engineer written notice, specifying the variation proposed to be made and the reason for making it and apply for instructions thereon. In case, the Contractor shall not within ten days of submission of such notice, receive such instructions, he shall proceed with the work conforming to the provisions, regulations, or bye-laws in question, and any variation so necessitated shall be dealt with under Clause 28 thereof.

The Contractor shall bring to the attention of the Engineer all notices required for execution by the said Acts, regulations or bye-laws to be given to any authority and pay to such authority, or to any public office all fees that may be properly chargeable in respect of the works, and lodge the receipts with the Engineer for reimbursement at actual.

16. Setting Out

The Contractor shall set out the works 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. If at any time any error in this respect shall appear during the progress of the works or within the defects liability period the Contractor shall, if so required, at his own expense rectify such error to the satisfaction of the Engineer.

17a **Quality of Materials & Workmanship & Test**

All materials and workmanship shall be the best of the respective kinds described in the Contract and in accordance with the Engineer's / Architect's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication or on the Site or atan approved testing laboratory.

The Contractor shall upon the instruction of the Engineer / Engineer's / Architect's Representative furnish him with documentation to prove that the materials & goods comply with the requirements of contract and for requirement stated above. The Engineer may issue instruction in regard to removal of material from site or any work, if these are not in accordance with the Contract. The Contractor shall provide such assistance instruments, machinery, labour and materials as are normally required for examining, measuring, sampling and testing any material or part of work before incorporation in the works for testing as may be selected and required by the Engineer / Engineer's / Architect's Representative.

17b **Samples**

All samples of adequate numbers, sizes, shades & pattern as per specification shall be supplied by the Contractor without any extra charge. Apart from adhering to any special provision made in the specifications regarding submission of samples the contractor shall within 7 days of his receipt of Letter of Acceptance, provide to the Architect samples along with the detailed literature of all materials he proposes to use in the work irrespective of the fact that a specific make / material might have been stipulated. If certain items proposed to be used are of such nature that samples cannot be presented or pre pared at the site, detailed literature / test certificate of the same shall be provided to the satisfaction of the Architect / Engineer. Before submit ting the samples / literature, the contractor shall satisfy himself that the material / equipment for which he is submitting the samples / literature meet with the requirement of the specification. The Architect / Engineer shall check the samples and give his comments and / or approval to the same. Only when the samples are approved in writing by the Architect / Engineer, the contractor shall proceed with the procurement and installation of the particular material / equipment. The approved samples shall be signed by the Architect / Engineer for identification and shall be kept on record at site office until the completion and acceptance of the work and shall be available at the site for inspection / comparison at any time. The contractor shall keep with him a duplicate of such samples to enable him to process the matter.

For items of work where the samples are to be made at the site, the same procedure shall be followed. All such samples shall be prepared at a place where it can be left undisturbed until the completion of the project.

The Architect / Engineer shall communicate their comments / approval to the Contractor to the samples at his earliest convenience. Any delay that might occur in approving of the samples for reasons of its not meeting with 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's, etc. shall be to the account of the contractor. In this respect the decision of the Engineer shall be final.

On delivery of the supplies of materials / equipment for permanent works at the site, the contractor shall specifically arrange to get the supply inspected by the Engineer and compared with the approved sample and his specific approval obtained before using the same in the work.

17c **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 Bill of Quantities.

17d **Costs of Tests not provided for, etc.**

If any test is ordered by the Engineer which is either

(a) not so intended by or provided for or

(b) (in the cases above mentioned) is not so particularized, or

(c) though so intended or provided for but ordered by the Engineer to be carried out by an independent person at any place other than the site or the place of manufacture of fabrication of the materials tested or any Government / approved Laboratory, then the cost of such test shall be borne by the Contractor.

18. Absence of Specification

If the specifications do not contain particulars of materials and works which are obviously necessary for the proper completion of the works, and the intention to include, which is inferred, all such materials and works shall be supplied and executed by the Contractor without extra charge. If the Contractor requires additional information, he shall, in pursuance of Clause 7.0 hereof, so request in writing well in advance to commencement of the particular work to the Engineer who will issue such detailed information as necessary within a reasonable time.

19. Obtaining Information Related to Execution of Work

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

20. Contractor's Superintendence

The Contractor shall give all necessary personal superintendence during the execution of the works, and as long, thereafter, as the Engineer may consider necessary until the expiry of the "Defects Liability Period" stated hereto.

21. Access for Inspection

The Employer, the Architect, the Engineer and their respective representatives shall at all reasonable times have free access to the work and / or to the workshops, factories or other places where materials are lying or from which they are being obtained and the Contractor shall give to the Employer, the Architect, the Engineer and their representatives every facility necessary for checking measurements, inspection and examination and test of the materials and workmanship. No person not authorized by the Employer or the Architect or the Engineer except the representatives of public authorities shall be allowed on the works at any time.

22a. **Examination of Work Before Covering Up**

No work shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any work, which is about to be covered up or put out of view and to examine foundations before permanent work is Placed thereon. The Contractor shall give due notice to the Engineer of any such work or foundations is or are ready or about to be ready for examination and the Engineer shall without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such work or for examining such foundations.

22b **Uncovering and making openings**

The Contractor shall uncover any part or parts of the Works or make openings in or through the same as the Engineer may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of the Engineer. If any such part or parts have been covered up or put out of view after compliance with the requirements of sub-clause (i) of this Clause and are found to be executed in accordance with the contract the expenses of uncovering, making openings in or through reinstating and making good the same shall be borne by the Employer but in any other case all such expenses shallbe borne by the Contractor and shall be recoverable from him by the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor.

23. Assignment

The whole of the works included in the contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or sublet the contract or any part / share thereof or any interest therein without the prior written consent of the Employer / Architect and no undertaking shall relieve the Contractor from the full and entire responsibility of the contract or from active superintendence of the works during their progress.

24. Quantities

24a The Bill of Quantities (BOQ), unless otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard Method of Measurement and quantities in B.O.Q. are to be considered as estimated and not accurate. The rates quoted shall remain valid for variation of quantity against each individual item to any extent subject to maximum variation of the contract value by ▯ 25%. The entire amount paid under Clause 27, 28 hereof and 29 of SCC as well as amounts of prime costs and provisional sums, if any, shall be excluded.

24b Variation Exceeding 25%: The items of work executed in relation to variation exceeding 25% ofcontract value shall be paid on the basis of provision of above Clause hereof.

25. Works to be Measured

The Engineer may from time to time intimate to the Contractor that he requires the works to be measured, and the Contractor shall forthwith attend or send a qualified Representative to assist the Engineer in taking such measurements and calculations and to furnish all particulars or to give all assistance required by any of them.

Should the Contractor not attend or neglect or omit to send such Representative, then the measurement taken by the Engineer or a person approved by him shall be taken to be correct measurements of the works. Such measurements shall be taken in accordance with the MBHADRA ROAD of Measurements detailed in the Specifications.

The Engineer shall take joint measurements with the contractor and the measurements shall be entered in the measurement book / sheet by the Engineer's / Architect's representative.

The Contractor or his Representative may at the time of measurement take such notes and measurements as he may require.

All authorized extra works, omissions and all variations made without the Engineer's / Architect's knowledge, but subsequently sanctioned by him in writing (with the prior approval in writing of the Employer) shall be included in such measurements.

26. Claims

The Contractor shall send to the Engineer once in every month an account giving particulars as complete and fully detailed as required of all claims for any additional expenses claims, to which the Contractor may consider himself entitled and of all extra or additional / substituted work ordered by the Engineer which he has executed during the preceding month subject of provisions under relevantclauses of contract hereof, and no claim for payment for any such work will be considered which has not been included in such particulars. Provided always that the Engineer shall be

entitled to authorize payment to be made for any such work notwithstanding the Contractor's failure to comply with this condition, if the Contractor has, at the earliest practicable opportunity notified the Engineer in writing that he intends to make a claim for such work and thereafter send complete and detailed particulars of the claim to the Engineer as directed by the Engineer but not later than 10 days from the date of notification of his claim.

27. Variations

No alteration, omission or variation ordered in writing by the Engineer shall vitiate this contract. In case the Employer / Engineer thinks proper at any time during the progress of the works to make any alterations in, or additions to or omissions from, the works or any alteration in the kind or quality of the materials to be used therein, the Engineer shall give notice thereof in writing to the Contractor or shall confirm in writing within seven days of giving any such oral instructions. The Contractor shall alter, add to, or omit from, as the case may be, in accordance with such notice, 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, Specification or Contract Drawings without the previous consent in writing of the Engineer and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Engineer in accordance with the provisions of Clause 28 hereof, and the same shall be added to or deducted from the Contract value, as the case may be.

28. Valuation of Variations

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

28a 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. 28b Rates for all items, wherever possible, should be derived out of the rates given in the Priced Bill of Quantities.

28c 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) hereof.

28d 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 date of receipt of order to carry out the work, inform the Engineer of the rate which he intends to charge for such items of work, supported by analysis of the rate or rates claimed and the Engineer shall fix such rate or prices as in the circumstances in his opinion are reasonable and proper, based on the market rate.

28e 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 Priced Bill of Quantities 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 Engineer, the workman's names) and materials employed be delivered for verification to the Engineer at or before the end of the week following that in which the work has been executed.

28f It is further clarified that for all such authorized extra items where rates cannot be derived from tender, the Contractors shall submit rates supported by rate analysis worked on the "market rate basis", for material, labour, hire / running charges of equipment and wastages etc. plus 15% towards establishment charges, contractor's overheads and profit. Such items shall not be eligible for escalation. The measurement and valuation in respect of the Contract shall be completed within the "Period of Final Measurement" stated in the Appendix or if not stated then within six months of the completion of the Contract works as defined in Clause 39 hereof.

29. Work is to be carried out to the Satisfaction of Architect / Engineer

The Contractor shall carry out all the works strictly in accordance with Drawings, detailed Specifications and instructions of the Architect / Engineer. If in the opinion of the Architect changes have to be made in the works, the Contractor shall carry out the same, and payment, if any, arising out of these shall be made as per the terms of the contract.

30a. **Removal of Improper Work & Materials**

The Engineer shall, during the progress of the works, have power to order in writing from time to time the removal from the works within such reasonable time or times as may be specified in the order, of any materials which in the opinion of the Engineer are not in accordance with the Specifications or the instructions of the Engineer, the substitution of proper materials, and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the Drawings and Specifications or instructions, and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor to carry out such order, the Employer shall have the power to employ and pay other persons to carry out the same, and all expenses consequent thereon, or incidental thereto, as certified by the Engineer shall be borne by the Contractor, or may be deducted by the Employer from any moneys due, or that may become due, to the Contractor.

30b **Default of Contractor in Compliance**

If the Contractor after receipt of written notice from the Engineer requiring compliance within ten days fails to comply with such further drawings and / or Engineer's / Architect's instructions the Employer may employ and pay other persons to execute any such work whatsoever that may be necessary to give effect thereto, and all costs incurred in connection therewith shall be recoverable from the Contractor by the Employer on the Certificate of the Engineer as a debt or may be deducted by him from any moneys due to the Contractor.

30c **Inspection & Testing During Manufacture**

The Engineer shall be entitled during manufacture to inspect, examine and test on the Contractor's premises during working hours the materials and workmanship and check the progress of manufacture of all fabrication materials / items to be supplied under the Contract, and if part of the said materials /items are being manufactured on other premises the Contractor shall obtain for the Engineer permission to inspect, examine and test as if the said Plant were manufacturing on the Contractors premises. Such inspection, examination or testing if made shall not relieve the Contractor from any obligation under the Contract.

30d **Dates for Inspection & Testing**

The Contractor shall agree with the Engineer the date on and the place at which any plant / works will be ready for testing as provided in the Contract and unless the Engineer shall attend at the place so named on the date agreed the Contractor may proceed with the tests, which shall be deemed to have been made in the Engineer's / Architect's presence, and shall forthwith forward to the Engineer duly certified copies of the test readings. The Engineer shall give the Contractor 24 hours' notice in writing of his intention to attend the tests. All costs of testing shall be borne by the contractor. All outstation travel expenses shall be borne by the owner but in case re-inspections are required as per clause No. 30 (ix) the travel expenses shall be on contractors account.

30e **Facilities for Testing at Manufacturer's Works**

Where the Contract provides for tests on the premises of the Contractor or of any sub-contractor the Contractor shall provide such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as may be requisite and as may be reasonably demanded to carry out such tests efficiently.

30f **Certificate of Testing**

As and when fabricated materials shall pass the tests referred in this, the Engineer shall furnish to the Contractor a certificate in writing to that effect.

30g **Rejection**

If as a result of such inspection, examination or test of the works (other than a Test on Completion under Clause 17.0) the Engineer shall decide that such material is defective or not in accordance with the Contract he shall notify the Contractor accordingly stating in writing his objection and reasons therefore. The Contractor shall with all speed make good the defect or ensures that the material complies with the Contract. Thereafter, if required by the Engineer, the tests shall be repeated under the same terms and conditions save that all reasonable expenses to which the Employer may be putby the repetition of the tests shall be deducted from the Contract Sum.

30h **Delivery of Materials & Equipment**

Unless the Engineer shall otherwise direct, no material shall be delivered to site until the Engineer shall have issued, in respect of such material, a certificate under Clause 30 (vi) (Certificate of Testing). Likewise, Fabricated Materials or Contractor's Equipment shall be delivered to Site only upon an authorization in writing applied for and obtained by the Contractor from the Engineer.

The Contractor shall be responsible for the reception on site of all Materials and Contractor's Equipment delivered for the purposes of the Contract.

30i **Inspection & Testing and Re-inspection & Retesting**

All deficiencies revealed by testing and inspection shall be rectified by the Contractor at his own expense and to the satisfaction and approval of the Engineer. Rectified components shall be subject to retesting and re-inspection.

30j **Inspection Reports**

The Contractor shall provide the Engineer with five copies of reports of all inspections and tests.

31. Virtual Completion Certificate

The Engineer shall issue the virtual completion certificate when in his opinion, the works have been substantially completed in all respects and necessary approvals are obtained by the Contractor. The Defects Liability Period shall commence from the date of virtual completion as certified by the Engineer.

32. Defect Liability Period

Any defect or other faults which may appear within the "Defects Liability Period" stated in the Appendix hereto or, if none stated, then within 365 days after the date of the virtual completion of the works as certified by the Engineer, arising in the opinion of the Engineer from materials or workmanship not in accordance with the contract, shall upon

..... Bidders Signature with Stamp and date

the direction in writing of the Engineer,and within such reasonable time as shall be specified therein, be amended and made good by the Contractor, at his own cost and in case of default the Employer may employ and pay other persons to amend and make good such defects or other faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be made good and borne by the

Contractor and such damage, loss and expenses shall be recoverable from him by the Employer or may be deducted by the Employer, upon the Engineer's / Architect's Certificate in writing, from any money due or that may become due to the Contractor, or the Employer may in lieu of such amending and making good by the Contractor deduct from any monies due to the Contractor, a sum, to be determined by the Engineer equivalent to the cost of amending such work and in the event of the amount retained under Clause 46 hereof being insufficient, recover the balance from the Contractor, together with any expenses the Employer may have incurred in connection therewith. Should any defective work have been done or material supplied by any Sub-Contractor employed on the works who has been nominated or approved by the Engineer, the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subject to the provisions of this Clause and Clause 29 hereof. The Contractor shall remain liable under the provisions of this Clause notwithstanding the signing of any certificate or the passing of any accounts, by the Engineer. The Contractor will not be responsible for defects arising out of fair wear &tear & damage caused by Employer's personnel during the use of the building after being occupied.

33. Approval Only by No Dues Certificate

33a **Final Completion Certificate**

On successful completion of entire works covered by the Contract to the full satisfaction of Employer / Engineer, the Contractor shall ensure that the following works have been completed to the satisfaction of Engineer : (a) clear the site of all scaffolding, wiring, pipes, surplus materials, Contractor's labour, equipment and machinery (b) demolish, dismantle and remove all Contractor's site offices and other temporary works, structures and constructions and other items and things whatsoever brought upon or erected at the site or any land allotted to the Contractor by the Owner and not incorporated in the permanent works (c) remove all rubbish, debris etc. from the site and the land allotted to Contractor and shall clear, level and dress, compact the site as required and said land to the satisfaction of the Engineer

(d) shall put the Owner in undisputed custody and possession of the site and all land allotted by the Owner to the Contractor (e) All defects / imperfections have been attended & rectified to full satisfaction of the Engineer during the Defect Liability Period. Unless the Contractor shall have fulfilled the provisions of the clause, the works shall not be deemed to have been completed.

Upon the satisfactory fulfillment by Contractor as stated above, the Contractor shall be entitled to apply to the Engineer for a Final Completion Certificate in respect of the entire work.

If the Engineer is satisfied of the completion of the work relative to which the Completion Certificate has been sought, the Engineer shall within 14 (fourteen) days of the receipt of the application for Completion Certificate, issue a Completion Certificate in respect of the works for which the CompletionCertificate has been applied.

This issuance of a Completion Certificate shall be without prejudice to the Employer's rights and Contractor's liabilities under the Contract, including the Contractor's liability for the Defect Liability Period nor shall the issuance of a Completion Certificate in respect of the works or work at any site be construed as a waiver of any right or claim of the Employer against the Contractor in respect of work or the works at the site and in respect of which the Final Completion Certificate has been issued.

33b **No Dues Certificate**

The Contract shall remain valid and shall remain incomplete until no dues Certificate shall have been signed by the Engineer and delivered to the Employer with a copy to the contractor. Such a certificate shall be given by the engineer within 30 days of completion of defects liability period (the last period to be considered if different periods to be considered if different parts of the work) or within 30 days from the date of payment of final bill whichever is later.

34a **Prime Cost Items**

The material(s) required for execution of any item for which a sum has been provided as a prime cost price in the tender, shall be procured by the contractor on Employer's instruction from an agency nominated by the Employer. Every sum in the bill of quantities, which contains either as a whole or part the amount as prime cost price of the materials shall be varied by substitution of the actual cost of the materials.

No variation shall be made in respect to the percentage quoted for labour and to cover for overheads & profits on account of variation in the prices, as above.

34b **Provisional Sums**

Every provisional sum other than Prime Cost items under sub-clause (i) of this clause set out in the Bill of Quantities whether for work to be executed by the Contractor which has not been specified in detail when the Contract is entered into or for work to be executed by a nominated Sub-Contractor as hereinafter defined together with the charges and

profits, if any, which the Contractor shall have addedto such sums shall be deducted from the Contract Value and in lieu thereof shall be added to the Contract Value.

34ba Where work to which the provisional sum relates has been ordered by the Engineer and executed by the Contractor the value of the work so executed valued in accordance with Clause 37c hereof and,

34bb Various items together with lump sum amounts for each of them have been indicated under a separate heading of Provisional Sums, in the B.O.Q. These items are such for which details have not been finalized when the contract is entered into. These items will be got executed either through the Contractor or through a nominated Sub-Contractor, entirely at the discretion of the Employer and shallbe paid on the basis of actual cost of each item plus a percentage rate to be quoted by the Contractor to cover his efforts towards co-ordination / assistance including his overheads and profits. No claim shall be entertained if any or all items under the heading of provisional sums are deleted by the Employer from the scope of work to be executed by the Contractor. No further escalation shall be payable on theseitems. The amounts for these items shall not be considered for variation in contract value as per Clause24 of GCC.

34bc **Use of Provisional Items**

All sums set out in the Bill of Quantities, which shall be stated to be Provisional shall be used only at the direction & sole discretion of the Employer / Engineer and if not used either wholly or in part, unused amount shall be deducted from the Contract Value. The provisional sum as well as payments made to contractor for assistance / co-ordination / carrying out of works therein shall not be considered for deciding variation in contract value as per Clause 24 of GCC.

34c **Production of Vouchers, Etc.**

The Contractor shall when required by the Employer / Engineer produce all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional sums or Prime Cost items.

34d **Nominated Sub-contractors / Objection to Nomination**

All Specialists, Merchants, Tradesman and others executing any work of supplying and fixing any goods for which prime cost items or provisional sums are included in the Bill of Quantities and / or Specification who may be nominated or selected by the Employer / Architect are hereby declared to be Sub-Contractors employed by the Contractor and are herein referred to as nominated Sub- Contractors.

34da No nominated Sub-Contractor shall be employed on or in connection with the works against whom the Contractor shall make reasonable objection or (save where the Engineer and Contractor shall otherwise agree) who will not enter into a contract providing:

34db That the nominated Sub-Contractor shall indemnify the Contractor against the same obligations in respect of the Sub-Contract as the Contractor is under in respect of this contract.

34dc That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect ofany negligence by the Sub-Contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant, the property of the Contractor or under any Workmen's Compensation Act inforce.

34e Payment shall be made to the nominated Sub-Contractor within fourteen days of his receipt of payment from the Employer provided that before any Certificate is issued, the Contractor shall upon request furnish to the Engineer proof that all nominated Sub-Contractor's accounts included in previous certificates have been duly discharged, in default whereof the Employer may pay the same upon a Certificate of the Engineer and deduct the amount thereof from any sums due to the Contractor. The exercise of this power shall not create privity of contract as between Employer and Sub-Contractor.

35. Work by Other Agencies

The Employer / Engineer reserves the right to use premises and any portions of the site for the execution of any work not included in this contract which it may desire to have carried out by other persons simultaneously, and the Contractor shall allow all reasonable facilities for the execution of such work and carry out his work in coordination / cooperation with other agencies, but shall not be required to provide any plant or material for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the works included in the Contract and the Contractor shall not be responsible for any damage or delay which may happen to or occasioned by such work

36. Insurance Policies

The Contractor shall be responsible for all injury or damage to persons, animals or things and for all damage to property which may arise from any factor / omission on the part of the Contractor or any Sub-Contractor or any nominated Sub-Contractor or any of their employees. The liability under this clause shall cover also, inter-alia any damage to structures, whether immediately adjacent to the works or otherwise, any damage to roads, streets, footpaths, bridges as well as damage caused to the building and other structures and works forming the subject matter of this contract. The Contractor shall also be responsible for any damage caused to the buildings and other structures and works forming the subject matter of this contract due to rain, wind, fire, flood or high tide or other inclemency of weather. The Contractor shall indemnify and keep indemnified the Employer and hold him harmless in

respect of all and any loss and expenses arising from any such injury or damage to persons or property as aforesaid and also against any claim made in respect of injury or damage, whether under any statute or otherwise and also in respect of any award or compensation or damageconsequent upon such claims.

The Contractor shall, at his own expense, effect and maintain till issue of the virtual completion certificate under this contract, with an insurance company approved by the Employer, an All Risks Policy (CAR Policy) for Insurance for an amount equal to 125% of Contract value including earthquake risk in the joint names of the employer and the contractor (the name of the former being placed first in the policy) against all risk as per the standard all risk policy for Contractors and deposit such policy or policies with the employer before commencing the works.

The Contractor shall reinstate all damage of every sort mentioned in this clause so as to do delivery of the whole of the works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to property or third parties.

The Contractor shall also indemnify and keep indemnified the Employer against all claims which may be made against the Employer by any person in respect of anything which may arise in respect of the works or in consequence thereof and shall at his own expense, effect and maintain until the virtual completion of the contract, with an Insurance Company approved by the employer a third party insurance policy in the joint names of the Employer and the contractor (name of the former being placed first in the policy) against such risks and deposit such policy or policies before commencement of the works. The minimum limit of the coverage under the policy shall be Rs.5 lacs per person for any one accident or occurrence and Rs.20 lacs in respect of damage to property for any one accident or occurrence. The Contractor shall also indemnify the employer against all claims which may be made upon the Employer, whether under the Workmen's Compensation Act or any other statute in force, during the currency of this contract or at Common Law in respect of any employee of the Contractor or of sub-contractor and shall be at his own expense effect and maintain until the virtual completion of the contract, with an Insurance Company, approved by the Employer, a policy of Insurance against such risks and deposit such policy or policies with the Employer from time to time during the currency of this contract.

In default of the contractor insuring as provided above, the employer may so insure and may deduct the premiums paid from any money due or which may become due to the contractor.

The contractor shall be responsible for any liability which may not be covered by the Insurance Policies referred to above and also for all other damages to any person, animal or defective carrying out of this contract, whatever, may be the reasons due to which the damage shall have been caused.

The contractor shall also indemnify and keep indemnified the Employer against all and any costs, charges or expenses arising out of any claim or proceedings relating to the works and also in respect of any award of damage or compensation arising there from.

Without prejudice to the other rights of the employer 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, compensation costs, charges & other expenses paid by the employer and which are payable by the contractor 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.

The Contractor, in case of re-building or reinstatement after damage shall be entitled to such extension of time for completion as the Engineer may deem fit, but shall, however, not be entitled to reimbursement by the employer of any shortfall or deficiency in the amount finally paid by the insurer in settlement of any claim arising as set out herein.

Without prejudice to his liability under this clause, the contractor shall also because all nominated sub-contractors to effect, for their respective portions of the works, similar policies of insurance in accordance with the provisions of this clause and shall produce or cause to produce to the employer such policies. The contractor shall not permit a nominated sub-contractor to commence work at the site unless the said insurance policies are submitted. In the event of failure of the sub-contractor to take out such a policy of insurance before commencing the works at the site, the contractor shall be responsible for any claim or damage attributable to the said sub- contractor.

37. Commencement of Works

-07- days from the date of work order or the date of instruction for taking possession of site, whichever is later, the contractor shall begin the works and shall regularly proceed with and complete the same on or before the "Date of Completion" stated in the Appendix subject nevertheless to the provisions for extension of time hereinafter contained.

38a. **Possession of Site**

Save in so far as the Contract may prescribe the extent of portions of the Site of which the Contractor is to be given possession from time to time and the order in which such portions shall be made available to him and subject to any

requirement in the Contract as to the order in which the Works shall be executed, the Employer will within 7 day from the Engineer's / Architect's written order to commence the Works give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed with the program referred to in Clause 50 hereof (if any) and otherwise in accordance with such reason able proposals of the Contractor as he shall, by notice in writing to the Engineer, make & will from time to time as the Works proceed give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the construction of the Works with due dispatch in accordance with the said program or proposals (as the case may be).

If the Contractor suffers delay or incurs expense from failure on the part of the Employer to give possession in accordance with the terms of this clause the Engineer shall grant an extension of time for the completion of the works without any compensation for delay.

38b **Way leaves, etc.**

The Contractor shall bear all expenses and charges for special or temporary way leaves required by himin connection with access to the Site. The Contractor shall also provide at his own cost any additional accommodation outside the Site required by him for the purpose of the Works.

39. Time for Completion

The entire work is to be completed in all respects within the time stated in Appendix to "Form ofTender" or such extended time as may be allowed under clause 40 hereof. Time is the essence of the contract and shall be strictly observed by the contractor.

If required in the contract or as directed by the Engineer, the contractor shall complete certain portion of the work before the completion of the whole of the work. However, the completion date for whole of thework shall not change.

40. Extension of Time for Completion

If in the opinion of the Engineer the works be delayed for reasons beyond the control of the contractor, the Engineer may make a fair and reasonable extension of time for completion of the contract works.

If the Contractor needs an extension of time for the completion of the work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion stipulated in the contract, the Contractor shall apply to the Employer for extension of time in writing at least 10 days before the expiry of the scheduled time and while applying for extension of time, Contractor shall furnish the reasons in detail and his justification, if any, for the delays. While granting extension, the Engineer shall notify the contractor the period of time which will not qualify for levy of liquidated damages.

For the balance period in excess of original stipulated period and authorized extension of time granted i.e. period not qualifying for levy of liquidated damages, by the Employer, the provision of liquidated damages as stated under Clause 43 will 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.

41a **Rate of Progress**

The whole of the materials, plant and labor to be provided by the Contractor, 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 Engineer. Should the rate of progress of the Works or any part thereof be at any time be in the opinion of the Engineer too slow to ensure the completion of the whole of the Works bythe prescribed time or extended time for completion, the Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as considered necessary by the Engineer to expedite progress so as to complete the Works by the prescribed time or extended time for completion. Such communications from the Engineer neither shall relieve the contractor from fulfilling obligations under the contract nor he will be entitled to raise claims arising out of such directions.

41b **Work during Night or on Holidays**

Subject to any provision to the contrary contained in the Contract none of the permanent work shall save as herein provided be carried on during the night or on Holidays without the permission in writingof the Engineer, save when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works in which case the Contractor shall immediately advise the Engineer. Provided always that the provisions of this clause shall not be applicable in the case of any work, which becomes essential to carry out by rotary or double shifts in order to achieve the progress & quality of the part of the works being technically required / continued with the prior approval of the Engineer.

All work at night shall be carried out without unreasonable noise & disturbance and with the approvalof the Engineer & in addition that of the local authority, if so applicable. The Contractor shall indemnifythe Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims, demands, proceedings, costs,charges & expenses whatsoever in regard or in relation to such liability.

42. Suspension of Work

The Contractor shall on the written order of the Engineer suspend the progress of the Works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. The extra cost including all running wages to be paid on the Site, salaries, depreciation and maintenance of plant, Site on costs and overhead costs of the Contract relatable to the works done or incurred by the Contractor in giving effect to the Engineer's / Architect's instructions under this Clause shall, be borne and paid by the Employer unless such suspension is:

42a otherwise provided for in the Contract

OR

42b necessary by reason of inclement weather conditions affecting adversely the safety or quality of the Works.

OR

42c necessary by reason of some default on the part of the contractor

Provided that the Contractor shall not be entitled to recover any such extra cost unless he gives notice in writing of his intention to claim to the Engineer within 28 days of the Engineer's / Architect's order. The Engineer shall settle and determine such extra payment and / or extension of time under relevant Clause hereof to be made to the Contractor in respect of such claim as shall in the opinion of the Engineer be fair and reasonable and the Engineer's / Architect's decision shall be final and binding.

43. Liquidated Damages for Delay

If the Contractor fails to complete the works by the period stated in the Appendix or within any extended time under Clause 40 hereof and the Engineer certifies in writing that in his opinion the same ought to have been reasonably completed by the original completion date or extended completion date, as the case may be, the Contractor shall pay the Employer the sum named in the Appendix as "Liquidated Damages" for the period during which the said works shall so remain incomplete or the Employer may deduct such damages from any monies due to the Contractor.

44a. **Default of Contractor**

If the Contractor being an individual or a firm commits any "act of insolvency", or shall be adjudged an insolvent or being an Incorporated Company shall have an order for compulsory winding up made against it as pass an effective resolution for winding up voluntarily or subject to the supervision of the Court and the Official Assignee or the Liquidator in such acts of insolvency or winding up, as the case may be, shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Engineer that he is able to carry out and fulfill the Contract and to give security therefore, if so required by the Engineer.

OR if the Contractor (when an individual, firm or incorporated Company) shall suffer execution or other process of Court attaching property to be issued against the Contractor.

OR shall suffer any payment under this Contract to be attached by or on behalf of any of the creditors ofthe Contractor.

OR shall assign or sublet this Contract without the consent in writing of the Employer.

OR shall charge or encumber this Contract or any payments due or which may become due to theContractor hereunder.

OR if the Engineer shall certify in writing to the Employer that the Contractor.

44b Has abandoned the Contract, or

44c Has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for fourteen days after receiving from the Engineer's / Architect'snotice to proceed with the work

OR

44d Has failed to proceed with the works with such due diligence and failed to make such dueprogress as would enable the works to be completed within the time agreed upon,

OR

44e Has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Engineer written notice that the said materials or work were condemned and rejected by the Engineer under these conditions,

OR

44f Has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contract to be observed & performed by the Contractor for seven days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same.

Then and in any of the said cases the Employer may, notwithstanding any previous waiver, after givingseven days' notice in writing to the Contractor, determine the Contract, but without thereby affecting the powers of the Engineer or the obligations and liabilities of the Contractor, the whole of which shall continue in force as fully as if the Contract had not been so determined, and as if the works subsequently executed had been executed by or on behalf of the Contractor. And further, the Employerby his agents or servants may enter upon and take possession of the works and all plants, tools, scaffoldings, sheds, machinery, steam and other power utensils and materials lying upon the premises

or the adjoining lands or roads and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing anyother Contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder suchother Contractor or other person or persons employed for completing and finishing or using the materials and plant for the works. When the works shall be completed or as soon, thereafter, as convenient the Engineer shall give a notice in writing to the Contractor to remove his surplus materialsand plant and should the Contractor fail to do so within a period of fourteen days after receipt thereofby him, the Employer may sell the same by public auction, and give credit to the Contractor for the net amount realized. The Engineer shall, thereafter, ascertain and certify in writing under his hand what (ifanything) shall be due or payable to or by the Employer, for the value of the said plant and materials so taken possession of by the Employer and the expense or loss which the Employer shall have been put toin procuring the works to be completed and the amount, if any, owing to the Contractor and the amountwhich shall be so certified shall thereupon be paid by the Employer to the Contractor or by the Contractor to the Employer, as the case may be, & the Certificate of the Engineer shall be final and conclusive between the parties.

44g **Default of Employer**

If the payment of the amount payable by the Employer under Certificate of the Engineer shall be in arrears and unpaid for thirty days after notice in writing requiring payment of the amount as aforesaid shall have been given by the Contractor to the Employer, or if the Employer interferes with or obstructs the issue of any such Certificate, or if the Employer shall repudiate the Contract, or if the works be stopped for three months under the order of the Engineer or the Employer or by any injunction or other order of any Court of Law, then and in any of the said cases, the Contractor shall be at liberty to deter- mine the Contract by notice in writing to the Employer, through the Engineer, and he shall be entitled to recover from the Employer, payment for all works executed at site. All other expenditure to be borne by the Contractor.

In arriving at the amount of such payment the net rates contained in the Contractor's original Tender shall be followed or where the same may not apply valuation shall be made in accordance with Clause 28 hereof.

45a **Determination of Contract**

The Employer shall in addition to any other power enabling him to determine the Contract have power to determine the Contract at any time by giving not less than fourteen (14) days' notice in writing to the Contractor and on the expiry of such notice the Contractor shall (with the exception of this clause and clause 44 hereof) forthwith determine but without prejudice to the claims of either party in respect of any antecedent breach thereof.

45b **Compliance with Engineer's / Architect's Direction on Determination**

If the Contract shall be determined under the provisions of the clause 45 (i) the Contractor shall with all reasonable dispatch comply with the directions of the Engineer in respect to:

45ba Cancellation of outstanding commitments

45bb Performance of further work required for the protection of work executed.

45bc the removal of Constructional Plant Temporary Works and materials from the Site

45bd Any other matters arising out of the Contract with regard to which the Engineer decides that directions are necessary or expedient.

45c **Payment on Determination**

In the event of the Contract being determined under the provisions of this Clause the sum payable to the Contractor shall be such sum as would have been payable under Clause 47 hereof as if the contract had been determined by the Employer under the provision of Clause 45 hereof and

45ca The reasonable cost of complying with the Engineer's / Architect's directions under sub-clause hereof

45cb Such reasonable sum as may be agreed between the parties or in default of agreement settled by arbitration in respect of the Contractor's overheads including any sums properly and necessarily incurred as the direct result of such determination.

45d The Engineer has a right to ascertain the happening of any contingency, including but not limited to the contingencies listed below, which would vest in the Employer certain powers including, but not limited to, taking possession of the work so far as it has been performed, and to completing the work either by himself or by employing some other Agency, retaining property of the Contractor, suchas materials, plant or money already due to the Contractor:

45da Failure of Contractor to proceed with or complete the works in the time or manner stipulated

45db Contractor's bankruptcy

45dc Failure of Contractor to commence the work

45dd Failure of Contractor to regularly proceed with the work for a certain fixed period 45de Failure of Contractor to proceed to the satisfaction of the Employer or the Engineer

45df Failure of Contractor to proceed with the work for any reason independent of prevention byEmployer

45dg If in the Engineer's / Architect's opinion, the Contractor is not exercising due diligence andproceeding with

such dispatch as will enable the works to be duly completed in time

45dh Failure of Contractor in complying with the orders and directions given by the Engineer

45di Failure of Contractor in complying with the Specification, stipulations, conditions or Drgs.

45dj The Contractor being guilty of any default in the fulfillment of the contract

45dk The Contractor leaves the work unfinished

45dl Failure of Contractor, after due notice, to rectify defective work

45dm The Contractor renouncing materials from site and

45dn Failure of Contractor to maintain the works

46. Security Deposit / Retention Money

In addition to the Initial Security Deposit as further security for the due fulfillment of the contract by the Contractor, 8% of the value of the work done will be deducted by the Employer from each payment to be made to the Contractor towards retention money until the retention money amounts to 5% of the contract value (excluding the cost of Operation & Annual Maintenance Contract) including the initial Security Deposit. On the Engineer's / Architect's issuing a certificate of virtual completion of the works, 50% of the security deposit shall be released to the contractor, and the remaining 50% will be released bythe Employer after the Contractor obtains the no dues certificate from the engineer subject to Clause 33. The amounts retained by the Employer shall not bear any interest.

All compensation or other sums of money payable by the Contractor to the Employer under the terms of this contract may be deducted from the security deposit if the amount so permits and the Contractor shall, unless such deposit has become otherwise payable, within ten days after such deduction make good in cash the amount so deducted.

The security deposit of the contractor will be forfeited if he fails to comply with any of the conditions of the contract.

47. Certificates & Payment

47a **Secured Advance on Materials at Site**

The Contractor will be paid secured advance against the materials brought and stacked at site for use in permanent works and in the opinion of the Engineer are required to be procured in advance. The advance paid for the materials stacked at site shall be maximum 80% of the cost of the materials or 65% of the relevant item rate, whichever is less at the discretion of Engineer and the Contractor shall produce necessary vouchers / documents in support of cost of each material. No advance shall be admitted for perishable and materials procured prematurely as decided by the Engineer.

Where in any Certificate (of which the Contractor has received payment), the Engineer has included the value of any unfixed materials intended for and / or placed on or adjacent to the works such materialsshall become the property of the Employer and they shall not be removed except for use upon the works, without the written authority of the Engineer. The Contractor shall be liable for any loss of, ordamage to, such materials.

The materials shall also be in conformity with contract specifications and of approved quality as statedin relevant clauses hereof. These advances shall be made on the basis of the quantity of each material lying at site at the time of preparation of each interim bill. The Contractor shall sign indemnity bond for any loss either due to theft or fire etc.

47b **Running Bill Payments**

The Contractor shall be paid by the Employer from time to time by installments under Interim Certificate to be issued by the Engineer to the Contractor on account of the works executed when in the opinion of the Engineer, work to the approximate value named in the Appendix to form of tender "Minimum value of Work for Interim Certificate" (or less at the sole discretion of the Engineer) has been executed in accordance with this contract, subject to a retention of the percentage of such value named in the Appendix to form of tender hereto as 'Retention Percentage for Interim Certificates' until the total amount retained shall reach the sum named in the Appendix to form of tender as 'Security Deposit'.

47c The contractor shall be paid two bills in a month, which shall include work done and secured advance against material. If in the opinion of the Engineer the progress of the work warrants a third payment in a month, the same shall be so arranged by the Employer.

47d After submission of bill along with complete information, vouchers etc. to the satisfaction of the Engineer & after making necessary deductions toward Vat, Income Tax, Work Contract Tax & other recoveries deductible at source, the bill will be paid as follows:

47da An ADHOC PAYMENT of 75% of the value of work done as assessed by the Engineer shall be released within 7 working days by the Employer, after certification by the Engineer who will certify within 4 working days of submission of Bill including furnishing of all relevant documents.

47db Balance amount shall be certified by the Engineer within 10 working days of submission of bill and payment shall be released by the Employer within 5 working days of certificate receipt.

47e **Final Bill**

The Contractor shall submit final bill within 30 days from the date of issue of virtual completion certificate with all relevant information and details including as-built drawings, operation and maintenance manual, photographs etc.

complete. The last date of submission of all relevant documentsshall be reckoned as the date of final submission.

47f The Engineer within 30 days of submission of the final bill, shall issue a certificate of payment against the final bill to the Employer who shall thereupon, within 30 days from the date of receipt of the certificate, shall release the balance payment to the contractor after effecting all recoveries, including advances & payments against interim certificates.

47g The Engineer shall have power to withhold Certification if the works or any parts thereof are not being carried out to his satisfaction.

47h The Engineer may by any Certificate make any correction in any previous Certificate, which shall have been issued by him.

47i No payment shall be made to the Contractor if the Contractor fails to insure the works & keepthem insured till the issue of the Virtual Completion Certificate.

48. Settlement of Disputes and Differences

48a The Contractor shall try to settle all matters pertaining to this contract first with the Engineer. The decision of the Engineer may be in the form of a certificate, instruction or otherwise. The decision, opinion, direction, certificate for payment with respect to all or any of the matters under Clauses 18, 30, 31 and 32 hereof (which matters are hereinafter referred to as excepted matters) of the Engineer shall be final and conclusive and binding on the Contractor and Employer and shall be without appeal.

48b All other disputes and differences of any kind whatsoever between the Contractor and the Engineer arising out of or in connection with the contract or carrying out the works (whether during progress of work or within defects liability period and whether before or within 365 days of determination / abandonment / breach of the contract) shall then be referred by the Contractor to the Employer giving inter-alia full details of matter under dispute and the reasons thereof. The Employer shall within a period of 60 days from the receipt of such reference from the contractor, give his decision in writing. If the Contractor is dissatisfied with the decision of the Employer, he can refer the matter for arbitration by serving a written notice on the Employer, through the Engineer within a period of 28 days of such decision. The notice shall specify the matters with full details and amount, which are in dispute and referred for arbitration.

49. VOID

50. Program of Works

50a **Detailed Program to be Furnished:**

Within 15 days of receiving letter of Acceptance / Award the Contractor shall prepare and submit a detailed program of works in the form of a Bar Chart / Mile stone network showing all activities & the order of procedure in which he proposes to carry out the works including labor histogram, cash flow and deployment of equipment's. Within 15 days from the date of submission, the Engineer shall convey to the Contractor his comment / approval on the program.

The contractor shall be required to submit the PERT / CPM chart for the various activities involved inthis work including dependencies etc., and regularly monitor the progress of works accordingly.

50b **Program to be Modified**

Subject to the provisions of Clause 39 hereof, if at any time it should appear to the Engineer that the actual progress of the works does not conform to the approved program referred to in sub-clause (i) of this Clause, the Contractor shall produce a revised & detailed program showing the modifications to the original program necessary to ensure the completion of the works within the time for completion as defined in Clause 39 hereof.

(iii) **Cash Flow**

50c The detailed program's shall also show the estimated Cash flow required for each month to complete the works.

50d **Progress Report**

Four copies of monthly progress reports containing the following shall be submitted by the Contractor to the Employer through the Engineer on or before the 5th day of the next month.

50da Monthly detailed progress report showing the progress of individual activities of program as achieved at site till such period and being suitably marked on the approved network diagram, or as directed by the Engineer, shall be provided by the Contractor indicating the actual state of progress during the course of the contract, together with other details of procurement & delivery schedules of materials / equipment's, as required by the Engineer.

50db Labor report in the form prescribed by the Engineer.

50dc Equipment & machinery report in the form pre scribed by the Engineer.50dd Supervisory staff report in the form prescribed by the Engineer.

50de Remedial Measures for covering up delay, if any,

50df Bottlenecks and hindrances,

50dg Minimum 5 Nos. of color photographs of 7" x 5" with each report showing the progress ofworks.

Apart from the above the Contractor shall submit daily report indicating regular deployment of his staff and workers, equipment's, important stages of progress, procurement of construction materials etc. asapproved by the Engineer.

51. Urgent Repairs

If by reason of any accident or failure or other event occurring to in or in connection with the Works, or any part thereof, either during the execution of the Works or during the Period of Defect Liability / Maintenance any remedial or other work or repair shall, in the opinion of the Engineer or Engineer's / Architect's representative be urgently necessary for security and safety of life or for the works or of adjoining property and the Contractor is unable or unwilling at once to do such work or repair, the Employer may employ his own or other workmen do such work or repair, as the Engineer or the Engineer's / Architect's representative may consider necessary. If the work or repair so done by the Employer which is in the opinion of the Engineer, the Contractor was liable to do at his own expense under the Contract, all costs and charges incurred by the Employer in so doing shall on demand be paid by the Contractor to the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor. Provided always that the Engineer or the Engineer's / Architect's representative (as the case may be) shall, as soon after the occurrence of any such emergency, as may be reasonably practicable notify, the Contractor thereof in writing.

52. VOID

53. VOID

54. Contractor to Search

The Contractor shall, if required by the Engineer in writing, search, test as shall be necessary to determine the cause of any defect, imperfection or fault under the directions of the Engineer. Unless such defect, imperfection or fault shall be one for which the Contractor is liable under the contract the cost of the work carried out by the Contractor in searching as aforesaid shall be borne by the Employer. But if such defect, imperfection or fault shall be one for which the Contractor is liable as aforesaid, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall insuch case repair rectifies and make good such defect, imperfection or fault at his own expense in accordance with the provisions of Clause 30 hereof.

55. Interference with Traffic and Adjoining Properties

All operations necessary for the execution of the Works and for the construction of any TemporaryWorks shall so far as in compliance with the requirements of the Contract permits be carried on so as not to interfere unnecessarily or improperly with the public convenience or the access to use and occupation of public or private roads and footpaths or to or of properties whether in the possession of the Employer or of any other person and the Contractor shall save harmless and indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expense whatsoever arising out of or in relation to any such matters in so far as the Contractor is responsible.

56a. **Extraordinary Traffic**

The Contractor shall use every reasonable means to prevent any of the highways or bridgescommunicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his sub-contractors and in particular shall select routes and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and material from and to the site shall be limited as far as reasonably possible and so that no unnecessary damage or injury may be occasioned to such highways and bridges.

56b **Special Loads**

Should it be found necessary for the Contractor to move one or more loads of Constructional Plant Machinery or pre-constructed units or parts of units of work over part of a highway or bridge the moving whereof is likely to damage any highway or bridge unless special protection or strengthening is carried out then the Contractor shall adopt proper & adequate measures and shall be responsible for all the costs and consequences thereof.

56c **Settlement of Extra Ordinary Traffic Claims**

If during the carrying out of the works at any time or thereafter the Employer shall receive any claim arising out of the execution by the Contractor of the Works in respect of damage or injury to highways or bridges he shall immediately report the same to the Engineer and the Contractor and thereafter theContractor shall negotiate the settlement of and pay all sums due in respect of such claims and shall indemnify the Employer in respect thereof and in respect of all claims, demands, proceedings, damages, costs charges and expenses in relation thereto provided always that if and so far as any such claims or part thereof shall in the opinion of the Engineer be due to any failure on the part of the Contractor to observe and perform his obligations then the amount certified by the Engineer to be due to such failure shall be paid by the Contractor.

57a **Contractor to Keep Site Clear**

During the progress of the works the Contractor shall keep the site reasonably free from all unnecessary obstruction and shall store or dispose of any constructional plant and surplus materials and clear away and remove from the site any wreckage, rubbish or temporary works which are no longer required.

57b **Clearance of Site on Completion**

On the completion of the Works the Contractor shall clear away and remove from the site all constructional plant, surplus

materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workmanlike condition to the full satisfaction of the
Engineer / local authorities not later than 30 days from the virtual completion of the works or by suchother later date as fixed by the Engineer.

58 **Construction Plant**

58a **Definition**

For the Purpose of this Clause

58aa The expression "Constructional Plant" shall be deemed to exclude vehicles engaged in transporting any plant, equipment or materials & staff to or from the site.

58ab The expression "Hired Plant" shall mean any Constructional Plant, Temporary Works and materials for Temporary Works held by the Contractor under any agreement for hire thereof.

58ac The expression "Hire Purchase Plant" shall mean any Constructional Plant Temporary Works and materials for Temporary Works held by the Contractor under any agreement for hire purchase thereof.

58b **Hire Purchase of Plant Exclusively for Works**

All Constructional Plant, Temporary Works and materials owned by the Contractor or by any person,company or firm in which the Contractor has a controlling interest shall when brought on to the Site (orin the case of Hire Purchase Plant on the Site on its becoming the property of the Contractor) shall bedeemed to be exclusively intended for execution of the works and shall be deemed to be the property ofthe Employer till completion of the works.

58c **Conditions of Hire of Certain Plant**

With a view to securing in the event of a forfeiture under Clause 45 hereof the continued availability forthe purpose of executing the Works of any of Hired Plant the Contractor shall not bring on to the Site any Hired Plant unless there is an agreement for the hire thereof which contains a provision that the owner thereof will on request in writing made by the Employer within seven days after the date on which any such forfeiture has become effective and on the Employer undertaking to pay all hire chargesin respect thereof from such date, hire such Hired Plant to the Employer on the same terms in all respects as the same was hired to the Contractor save that the Employer shall be entitled to permit theuse thereof by any other contractor employed by him for the purpose of completing the works.

58d **Cost of Hiring Plants for purposes of Clause 45**

In the event of the Employer entering into any agreement for hire of Hired Plant pursuant to the provisions of Sub-Clause (iii) of this Clause all sums properly paid by the Employer under theprovisions of any such agreement and all expenses incurred by him (including stamp duties) in entering in to such agreement shall be deemed for the purpose of Clause 45 hereof to be part of the cost of completing the Works.

58e **Contractor's Certificate as to Hiring Provisions**

The Contractor shall upon request made by the Engineer at any time in relation to any item of Hired Plant forthwith notify to the Engineer in the name and address of the owner thereof and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements of sub-clause (iii) of this Clause. The Contractor shall also upon request as aforesaid give a like notification (but without certificate) in regard to any Hire Purchase Plant. The Contractor shall upon the request made by the Engineer provide the Engineer with true copy/copies of such agreement(s).

58f **Hire Purchase Payments by Employer**

The Employer shall in order to avoid seizure by the owner of any Hire Purchase Plant be entitled to pay to such owner the amount of any overdue installment or other sum payable under any agreement for hire purchase of plant and in the event of his doing so any amount so paid by him shall be debt due from the Contractor to the Employer and shall be deducted by the Employer from any monies due or that may become due to the Contractor under the Contract or otherwise or may be recovered by the Employer from the Contractor as per the law.

58g **Plants Etc. Not to be Removed**

No Constructional Plant, Temporary Works or materials or any part thereof shall be removed from thesite without the written consent of the Engineer, which consent shall not be unreasonably withheld where the same is no longer immediately required for the purpose of completion of the Works. The Employer will permit the Contractor the exclusive use of all such Constructional Plant, Temporary Works and materials in and for the completion of the Works until the happening of any event, which gives right to the Employer to exclude the Contractor from the Site and proceed with the completion ofthe Works.

58h **Re-vesting & Removal of Plant**

Upon removal of any such Constructional plant Temporary Works or materials as have been deemed tohave become the property of the Employer under sub-clause (ii) of this Clause with consent of the Employer the property therein shall be deemed to re-vest in the Contractor and upon completion of the Works the property in the remainder of such Constructional Plant, Temporary Works and Materials asaforesaid shall subject to the provisions of Clause 45 hereof be

deemed to re-vest in the Contractor whoshall remove the same together with Hire Purchase Plant.

58i **Disposal of Plant**

If the Contractor shall fail to remove any Constructional plant Temporary works or materials as aforesaid or any Hired plant, or Hire Purchase Plant within such reasonable time after completion of the Works as may be allowed by the Engineer at its discretion then the Employer may sell any such Constructional Plant, Temporary works and materials as aforesaid and return at the Contractor's expense to the person or company from whom any hired Plant or any Hired Purchases Plant was hired by the Contractor; and after deducting from any proceeds of sale the costs, charges and expenses of andin connection with such sale and of and in connection with return as aforesaid shall pay the balance (if any) to the Contractor but to the extent that the proceeds of any sale are insufficient to meet all such costs, charges and expenses the excess shall be a debt due from the Contractor to Employer & shall be adeductible or recoverable by from any items that may be due from any monies to the Contractor.

58j **Liability for Loss or Injury to Plant**

The Employer shall not at any time be liable for the damage / loss of or injury to any of the Constructional Plant Temporary works or materials which have been deemed to become the property of the Employer under sub-clause of this Clause, save as mentioned in above Clause.

58k **Incorporation of Clause in Sub-Contracts**

The Contractor shall when entering into any sub- contract for the execution of any part of work incorporate in such sub-contract by reference or otherwise the provisions of this Clause in relation to Constructional Plant, Temporary Works and Materials, Essential Hired Plant and Hire Purchase Plantbrought on to the site by the Sub-Contractor.

59a **Labour Laws**

The Contractor shall observe and strictly adhere to all prevailing labour laws inclusive of Contract Labour (Regulation and Abolition) act of 1970 (latest revision) and other safety regulations.

59b **Supply of Water**

The Contractor shall have regard to local conditions provide on the Site to the satisfaction of the Engineer an adequate supply of drinking and other water for the use of the Contractor's staff, workmen, Engineer's / Architect's staff for the work.

59c **Festivals & Religious Customs**

The Contractor and sub-contractor's agents and employees shall in all their dealings with their workmen and labourers for the time being employed on or in connection with the works have due regard to all recognized festivals and religious and other customs.

59d **Epidemics**

In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medicalor sanitary authorities for the purpose of overcoming the same.

59e **Disorderly Conduct**

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his or his sub- contractor's employees and for the preservation of peace and protection of persons and property in the neighborhood of the works against the same butthe contractor shall not interfere with member of any authorized Police Force who shall have free & undisputed access at all times to any part of the Works in the execution of their duties.

59f **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 Engineer's / Architect's representative. The Contractor shall also report such accident immediately to the competent authority whenever such report is required to be lodged by law & take appropriate actions thereof. The Contractor shall submit to the Engineer safety statistics as per the format given in "Annexure F".

59g **Fair Wages**

The Contractor shall in respect of all persons employed by him in factories, workshops or other places occupied or used by him for the execution of the Contract including the Works, pay rates or wages, emoluments and expenses and observe hours and conditions of labour not less favorable than those established for the trade or industry in the district where the work is carried out to which the organizations of employers and trade unions representatives or a substantial proportions of the employers and workers engaged in the trade or industry in the district are affiliated. In the absence of such established rates and conditions the Contractor shall pay rates or wages and observe hours and conditions of labour which are not less favorable than the general level of wages, hours and conditions observed in the trades or industries similar to those in which the Contractor is engaged.The Contractor shall comply with the provision of all labour legislation including the latest requirements of all the Acts, Laws, any Regulation or Bylaws or any local or other statutory Authority applicable in relation to the execution of works, such as:

59ga Minimum wages Act, 1948 (Amended) 59gb Payment of Wages Act, 1936 (Amended)
59gc Workmen's Compensation Act, 1923 (Amended Act No 65 of 1976)
59gd Contract Labour Regulation & Abolition Act, 1970 and Central Rules 1971 (Amended)
59ge Apprentices Act 1961
59gf Any other Act or enactment relating thereto and rules framed thereunder from time to time
59gg Industrial Employment (standing order) Act, 1946 (Amended)
59gh Personal Injuries (Compensation Insurance) Act, 1963 and any modifications thereof & rulemade thereunder from time to time.
59gi Employees' Provident Fund & Miscellaneous Provisions Act, 1952 and amendment thereof.

59ha **Workmen's Compensation**

If, for any reason, the Employer is obliged, by virtue of the provisions of the Workmen's Compensation Act, 1923, or any statutory modification or reenactment thereof to pay compensation to a workman employed by the Contractor in execution of the works, the Employer shall be entitled to recover from the Contractor the amount of compensation so paid and without prejudice to the rights of the Employer under the said Act. The Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Employer to the Contractor under this Contract or otherwise. The Employer shall not be bound to contest any claim made against it under the said Act, except on the written request of the contractor and upon his giving to the Employer full security to the satisfaction of the Employer for all costs for which the Employer might become liable in consequence of contesting such claim.

59hb **Observance by Sub-Contractors**

The Contractor shall be responsible for the observance by sub-contractors employed by him in the execution of this Contract of the provisions hereof and applicable laws, rules and regulations.

59hc Contractor will have to obtain Contractors All Risk insurance policy with an amount equal to 110% of the value of the contract on "all risk basis" including strikes, riots and civil commotion etc. for third party compensation (for Minimum Amount of Third-Party Insurance) as workman compensation policy so as to cover the risks detailed in above clause and that the listed policies normally cover. Policies will have to be taken out jointly in name of BOB and the contractor with BOB named first, Original policies will have to be submitted to BOB.

60. **Safety**

61a First aid appliances including adequate supply of sterilized dressings and cotton wool shall be kept in a readily accessible place.
61b An injured person shall be taken to a public hospital without loss of time, in cases where the injury necessitates hospitalization.
61c Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from ground.
61d 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 rungs shall not be more than 30 cm. When a ladder is used an extra mazdoor shall be engaged for holding the ladder.
61e The excavated material shall not be placed within 1.5 meters of the edge of the trench or half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.
61f 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 / railing of minimum height of one meter.
61g All staff and workers employed in the work shall be provided with safety shoes, helmet, belt, etc.
61h No floor, roof or other part of the structure shall be so overloaded with debris or materials as torender it unsafe.
61i Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
61ja No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
61jb Suitable facemasks should be supplied for use by the workers when the paint is applied in theform of spray or surface having lead paint dry rubbed and scrapped.
61k Overalls shall be supplied by the Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the periods of cessation of work.
61l Hoisting machines and tackle used in the works, including their attachments, anchorage and supports shall be in perfect condition.
61m The ropes used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from defects.
61n Contractor shall appoint "Safety Officer" to maintain safety records to the satisfaction of theEngineer.

CONDITIONS OF FORCE MAJEURE

The terms "Force Majeure" as employed herein shall mean act of God, war, revolt, riot, fire, flood and Acts & Regulations of respective Governments of the two parties namely the Employer and the Contractor.

Note: - "Typhoon" is covered under act of God"

In the event of either party being rendered unable by force majeure to perform any of obligation required to be performed by them under the Contract, the relative obligation of the party affected by such Force Majeure shall upon notification to the other party be suspended for the period of delay which is directly caused by such Force Majeure event.

Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing within (72) seventy-two hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.

Time for performance of the relative obligation suspended by the Force Majeure shall then stand extended by the period of delay, which is directly caused by Force Majeure event. The party who has given such notice shall be executed from timely performance of its obligations under the Contract, for so long as the relevant event of Force Majeure continues and to the extent that such parties performance is prevented, hindered or delayed, provided the party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its performance of the Contract and so to fulfill its obligations under the Contract.

If works to be executed by the Contractor are suspended by Force Majeure conditions lasting for more than (2) two months, the Employer shall have the option of canceling or terminating this Contact in whole or part thereof at Employer's discretion. Upon such termination provisions of Clause 45 shall apply.

Delay or non-performance by a party hereto caused by the occurrence of any of Force Majeure shall not:

a) Constitute a default or breach of the Contract,

b) Give rise to any claim for damages or additional cost or expense occasioned thereby: if such delay or non-performance is caused by the occurrence of any event of Force Majeure. Force Majeure conditions shall not be payable under any circumstances.

SPECIAL CONDITIONS OF CONTRACT

01 Scope of Work

The scope of the work is to carry out

PROPOSED CIVIL & ELECTRICAL – RENOVATION WORKS AT BOB-BHADRA BRANCH, AHMEDABAD.

The Civil works broadly comprise of:

a) Waterproofing Works
b) Civil & Allied works.
c) Painting and Varnishing works.
d) Civil Miscellaneous Works
e) Electrical Works –Wiring, Light Fixtures Fitting etc.

02 Location of Site

The site is located at GROUND, FIRST, SECOND & THIRD FLOOR + TERRACE OF EXISTING PREMISES AT BOB-BHADRA BRANCH, AHMEDABAD.

03 Area for the Contractor

The area to the extent available, at the discretion of the Architect/Engineer, from the said plot will be allocated to the contractor for his stores, offices, erection of plants, workshops etc. Any additional area including area for labour camp etc. shall be arranged by the contractor at his own cost. The Employer neither undertakes any responsibility for providing the area more than the above nor will entertain any claim/ reimbursement etc. towards arrangement of additional area / land etc. by the contractor.

04 Dimensions and Levels

All dimensions and levels shown on the Drawings shall be verified by the Contractor on the Site and he will be held responsible for the accuracy and maintenance of all the dimensions and the levels.

Figured dimensions are in all cases to be accepted and no dimension shall be scaled. Large-scale details shall take precedence over small-scale drawings. In case of discrepancy the Contractor shall ask for clarification from the Engineer before proceeding with the work.

05 Notice of Operation

The Contractor shall not carry out any important operation without the consent in writing of the Engineer.

06 Construction Records

The Contractor shall keep and provide to the Engineer full and accurate records of the dimensions and positions of all new work and any other information necessary for the Engineer.

07 VOID

08 Temporary Works

Before any Temporary Works are commenced the Contractor shall submit at least 7 days in advance to the Engineer for approval, complete drawings of all Temporary Works he may require for the execution of the works. The Contractor shall also submit his calculations relating to strength, if required by the Engineer and shall carry out the modifications that the Engineer may require in accordance with the Conditions of Contract at his own cost. The Contractor shall be solely responsible for the stability and safety of all Temporary Works and unfinished works and for the quality of the permanent works resulting from the arrangement eventually adopted for their execution.

09 VOID

10 Power, Water & Other Facilities

10a The Contractor shall make his own arrangements for the supply of good quality potable water at site, for his labour at site, and all charges for water shall be borne by him. If Municipal water is not available and should it become necessary for Contractor to bore wells for obtaining water for construction purposes or to bring water from outside by tankers, the Employer shall not be liable to pay any charges in connection therewith.

10b The rate quoted in the tender shall also include electric consumption charges for power.

10c For water and electricity, the Contractors shall be entitled to take connections from the temporary water and electric supply connection either by electric supply or diesel generation power obtained by the General Building Contractor, at his cost. The Contractor shall install a sub-meter separately for electricity and water supply at the location adjacent to the main meter for measuring electric / water consumption at their own cost and maintain the wiring / installation in good condition as per the local rules and reimburse the actual consumption charges directly to the General Building Contractor at mutually agreed rates between them. In case of any dispute, the reimbursement charges shall be decided by the Engineer, whose decision shall be final and without appeal.

10d The Contractor is to provide at site at his cost at least one telephone cum fax machine and shall allow the client, consultant and Engineer's / Architect's representative for use of the same at free of cost for local use.

11 Temporary Services

The Contractor shall provide and maintain all temporary services on or about the site, if any requiredfor the execution of the works and shall remove them on completion.

12 Office Accommodation for Contractor

The Contractor shall provide and maintain all necessary office(s), workshops, stores, shelters, sanitary facilities, canteens and other temporary buildings for themselves and their staff at site to the approval of the Engineer.

All temporary buildings of Contractor shall be removed at the completion of the project or at any earlierdate as directed by the Engineer without any extra cost.

All the expenses for obtaining statutory approvals and maintenance of the above facilities as well as running expenses shall be borne by the contractor at no extra cost. It is also responsibility of the Contractor to obtain statutory approvals for providing above facilities.

13 VOID

14 Facilities for Contractor's Employees

The Contractor shall make his own arrangement for the housing and welfare of his staff and workmen including adequate drinking water and sanitary facilities. The Contractor shall also make his own arrangements at his own cost for transport where necessary for his staff and workmen to and from the Sites of the works. The necessary drinking water and sanitary facilities for Employer's & Engineer's / Architect's representative, contractor's staff & labor & visitors at site shall be provided and maintained by the contractor at no extra cost.

15 Lighting for Works

The Contractor shall at all times provide adequate and approved lighting as required for the proper execution and supervision & inspection of the works.

16 Fire Fighting Arrangement

16a The Contractor shall provide suitable arrangements for firefighting at his own cost. For this purpose, he shall provide requisite number of Fire-Extinguishers and adequate number of buckets, some of which are to be always kept filled with sand and some with water. This equipment shall be provided at suitable prominent and easily accessible places and shall be properly maintained.

16b The Contractor may be subject to periodic fire prevention inspections and any deficiency or unsafe condition shall be corrected by the Contractor at his own cost and to approval of the Engineer and the relevant authorities.

These fire prevention inspections shall include but not limited to the following:

a Proper handling, storage and disposal of combustible materials, liquids and wastes.

b Work operations which can create fire hazards.

c Access for firefighting equipment.

d Type, size, number and location of fire extinguishers or other firefighting equipment.

e Inspection and maintenance records of extinguishers.

f Type, number and location of containers for the removal of surplus materials and rubbish.

g General housekeeping

17 Site Books

For the purpose of quick communication between the Engineer and the Contractor or his Agent orRepresentative, Site Books shall be maintained at Site in the manner as described below: -

Any communication, relating to the works may be conveyed through records in the Site Books. Such a communication from one party to the other shall be deemed to have been adequately served in termsof the Contract. Each site book shall have machine-numbered pages in triplicate and shall be carefullymaintained and preserved by the Contractor and shall be made available to the Engineer as and whendemanded. Any instruction which the Engineer may like to issue to the Contractor may be recorded by him in the Site Book and two copies thereof taken by the engineer for his record. The Contractor or his Agency or Representative may similarly record in the Site Book any communication he may like to send to the Engineer. Two copies thereof when sent to the Engineer and receipt obtained thereof, will constitute adequate services of the communication to the Engineer.

18 VOID

19 Site Meetings

Progress and quality evaluation meetings will be held at the site every week. The Contractors senior representative in charge of the project along with his site-in-charge and other staff including staff of approved subcontractors and suppliers as required shall participate in these progress review meetings and ensure all follow up actions. Any additional review meetings shall be held if required, as decided by the Engineer, which also shall be attended by the above-referred representatives.

20 VOID

21 Disposal of Refuse etc.

21a The Contractor shall cart away from site and deposit where directed by the Engineer all refuse, etc. arising from the Works both as it accumulates, at completion of the Works or at the direction of the Engineer.

21b It is the responsibility of the Contractor to obtain a certificate from the local authorities concerned to the effect that all rubbish arising out of Contractor's activities at the construction site or any other offsite activities borrow pits and / or disposal area(s) has been properly disposed off.

This certificate from the authority shall be dated not later than the (last) Certificate of Completion of Works and is to be enclosed with the Payment Certificate in which the Contractor re quests for payment of any Retention money due to him.

22 Contractor to verify site Measurements

The Contractor shall check and verify all site measurements whenever requested by other specialists, Contractors or by nominated or other sub-contractors to enable them to prepare their own shop drawings and pass on the information with sufficient promptness, as will not in any way delay the works. A copy of all such information passed on shall be given to the Engineer.

23 VOID

24 VOID

25 Approved Makes / Agencies

The Contractor shall provide all materials from the list of approved makes or as mentioned in BOQ and also appoint the specialist agency from the approved list / BOQ as provided in the Tender. The Architect / Employer may approve any make / agency within the approved list / BOQ after inspection of their samples / mock-ups and after ascertaining their spare capacities and recent past performances.

The items which are not covered in the List of Approved Makes shall be as per Samples approved by the Architect.

Colours or type if not mentioned elsewhere shall be as approved by the Architect.

26 VOID

27 Procurement of Materials

The contractor shall make his own arrangement to procure all materials required for the work unless otherwise specified elsewhere to be supplied by Employer / Owner. All wastages shall be to the contractors account.

28a **Excise & Sales Taxes, Works Contract Tax for Works**

The Contractor shall pay and be responsible for payment of all taxes, duties, levies, royalties, fees or charges in respect of the works including but not limited to sales taxes, tax on works contract, excise duties and octroi, payable in respect of materials, equipment, plant and other things required for the Contract. All of the aforesaid taxes, duties, levies fees and charges shall be to the Contractor's account and Employer shall not be required to pay any additional or extra amount on this account. Variation of taxes, duties, levies, fees etc., if any, till completion of work shall be deemed to be included in the accepted rates & no extra claim on this account will in any case be entertained.

28b **New Taxes, Duties & Levies, etc.**

However, if a new Tax or Duty or Levy is imposed under as statute or law during the currency of the contract, and the same shall be borne by the Contractor.

29 General Price Variation Adjustment (PVA)

The Contractor's final quoted price as accepted by the Employer shall remain firm during the entire contract period including authorized extension period. There shall not be any price variation for any reason whatsoever.

30 VOID

31 Guarantee and Maintenance during Defect Liability Period.

In pursuant to Clause No. 34 of GCC, the contractor shall guarantee all materials furnished and workmanship for a period of 365 days from the date of virtual completion of work i.e during Defect Liability Period. All failed parts or parts exhibiting unusual wear and tear during guarantee period shall be replaced without any cost to the Owner, and such replacement shall be factory approved new, equal or better than original. All labour, tools, materials, transportation, insurance etc., required in performance of guarantee work shall be at the contractor's expense.

32 VOID

33 VOID

34 Project Execution and Management

In pursuant to Clause No. 14 (i) of GCC, the Sr. Representative shall be assisted by adequate number of Engineers / Supervisors at site on full time basis.

For quality control and monitoring of workmanship, contractor shall assign at least one full time engineer who would be exclusively responsible for ensuring strict quality control, adherence to specifications and ensuring top class workmanship.

35 Tools and Tackles

All tools, tackles, supports, scaffolding and staging etc. required for erection and assembly of the equipment and installation covered by the contract shall be provided by the Contractor himself. In addition, all other materials such as foundation bolts, nuts etc. required for the installation of the equipment shall also be provided by the contractor at his cost.

36 Void

37 Safety Precautions

37a A competent and authorized supervisor shall be on the site whenever the contractor's men are at work. The supervisor should ensure that all plant and machinery used on the site are rendered safe for working and meet with the Indian or International safety standards applicable for the use and operation of such machinery. The supervisor should also ensure that the workmen at site are made to use safety appliances such as safety belts, lifelines, helmets etc.

37b Smoking shall be altogether strictly prohibited in all areas of work as well as where combustible and inflammable goods / materials are stored or lying about.

37c Any hot job such as welding, soldering, gas cutting shall not be carried out without the permission of the Engineer. Such jobs shall not be carried out where inflammable materials are storedor lying about.

All electric connections shall be through adequately sized mechanically protected cables without any joints and with proper and adequate terminals boxes. All power supplies shall be through properly rated fuses with isolating devices. No such hot jobs shall be carried out on holidays and without the presence of the Contractor's Supervisor and Owners permissions.

37d It is entirely the responsibility of the Contractor to practice the principles of 'SAFETY FIRST' during the entire tenure of work with adequate insurance covering injury or death to workmen, loss by theft or damage to materials and property and third party.

37e The Contractor should clear the site of all debris every day to avoid accidents. In case this is not done, the Owners may engage necessary labour to maintain the cleanliness of the premises and removal of debris and recover all or part of the expenditure so incurred from the Contractor.

37f Contractor shall at his own cost ensure that all of his personnel, employees, work men and other associated persons working with him at site are adequately insured as per labour laws and statutory provisions. The Contractor shall be responsible for all injuries / damages to men, materials and properties etc. which may arise from the operations or negligence of himself and / or his sub-contractors and indemnify the Owners for all such expenses which shall be solely to contractor's own account.

37g Contractor shall at his own cost, provide and maintain a full-fledged first-aid-box to give immediate medical aid to the workers / supervisory staff, in case of emergencies.

37h The contractor shall carry out the work strictly as per the safety aspects.

38 Technical Audit

The whole of the work may be technically audited by the Chief Technical Examiner (CTE) of the Central Vigilance Commission, Government of India from time to time. Any defects, improvement or testing etc. conveyed by the Examiner shall be carried out by the contractor at no extra cost, to the satisfaction of the CTE. Any deduction suggested by the CTE either due to faulty workmanship or not adhering to the specification will be affected.

The Employer shall have a right to cause a technical examination and audit of work and running and final bills of the contractor including all supporting vouchers. Abstract, etc. to

be made at the time of the bill. If as a result of this examination or otherwise any sum is found to have been overpaid in respect of any work done by the contractor under the contract the contractor shall be liable to return the amount of over payment and it will be lawful for the employer to recover the samefrom any sum or sums due to him and in any other manner legally permissible and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work, executed by him under the contract, the amount of such under payment shall be duly considered / paid by the employer.

Any sum of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the Employer and set off against any claim of the Employer for the payment of a sum of money arising out of or under any other contract made by the Contractor with the Employer.

The brand /make mentioned in the following list should be used by the Contractor and rate quoted should be based on the same. In case of the brand / make is not available, materials of other makes should be used with prior approval of Architect and Bank. The rates will be revised, based on the difference in basic rates of the make brand / name mentioned below: -

LIST OF APPROVED MAKES FOR CIVIL, CARPENTRY & ELECTRICAL WORKS		
MAKE / SPECIFICATION DETAIL		
Sr. No.	**LIST OF NOMINATED MATERIALS& SUPPLIERS**	**SUGGESTED MAKE LIST**
1	**INTERIOR WORK**	
	Commercial Plywood	NUWUD / Century / Asain / Archid / GREENPLY or equivalent
	Laminated sheet	Archidlam National / Formica/ Greenlam /MERINO
	Veneer	Green / Duro / Century / Timex / Anchor or equivalent
	Particle board (only for modular w/s & storage Unit)	Archidply /Greenlam/Century equivalent ISI make
	Acrylic sheet	ICI, GE or equivalent ISI make
	Marine grade plywood	Century, Kitply, Greenply, Anchor, Orchid, Prince
	Adhesive	Fevicol / Araldite/Anchor or equivalent
	Solid Surfaces (Curion)	DUPOINT/HI-MAC/ STARON OR equivalent
	Marine grade Block Board	Century, Kitply, Greenply, Anchor, Orchid or equivalent
	Flush Door	Century, Kitply, Greenply, Anchor, Orchid or equivalent
	Polish	Asain / Dulex or equivalent
	Latex	MM Foam or equivalent ISI make
	High density foam	U Foam or equivalent ISI make
	Locks	Godrej / Haffle / Hettich / Ebco or equivalent
	Storage Hardware	Godrej / Haffle / Hettich / Ebco or equivalent
	Screws / Nails & other accessories	GKW / Nettleford or equivalent
	False Flooring	Kebao , Armstrong , AMF or equivalent
	Vinyl Flooring	Armstrong ,gerflor, Eurotex ,
	Carpet	Unitex, Armstrong,
	Wooden laminated flooring	Pergo / Armstrong / Euro / Squarefeet or equivalent
	Locks	Godrej / Haffle / Hettich / Ebco or equivalent
	Storage Hardware	Godrej / Haffle / Hettich / Ebco or equivalent
	Screws / Nails & other accessories	GKW / Nettleford or equivalent
	Plain/Toughened glass	Saint- Gobain, Indo Asahi , Modi or equivalent
	Hardware for general staff areas	Dorma / Euro/ Ozone / Enox / Ebco /Hamco or equivalent
	Hardware for main Glass doors (patch fittings)	Dorma / Euro/ Ozone / Enox / Ebco /Hamco or equivalent
	Door Closers (general use)	Dorma / Euro/ Ozone / Enox / Ebco /Hamco or equivalent
	Floor springs (general use)	Dorma / Euro/ Ozone / Enox / Ebco /Hamco or equivalent
	Floor springs for main glass doors	Dorma / Euro/ Ozone / Enox / Ebco /Hamco or equivalent
	Aluminium Sections for Paritions	Jindal / Tata steel or equivalent
	False Ceilings: Gypsum	India Gypsum / Saint Gobin / Asia
	False Ceilings: Grid (As Approved)	Armstrong / AMF or equivalent
	False Ceilings: Grid (Metal Ceiling)	Unimech / AMF / Armstrong /
	GI Sections	India Gypsum / Saint Gobin / Jindal or equivalent

	Acoustical False Ceilings: Mineral fiber board	Armstrong, Hunter Douglas / Peritex or equivalent
.	POP Punning	Gyprock / India Gypsum / Birla
	Paint	Asian / Nerolac / Dulex / Berger or equivalent
	Exterior Paint	Asian / Nerolac / Dulex / Berger or equivalent
	ACP (Exterior / Interior)	Alstone / Eurobond /Alucobond
	silicon	G E / Dow corning / Wacer
	Rolling / Vertical Blind	Vista / Peritex / Winfab / MAC or equivalent
	Frosted Film	Garware or equivalent
2	**Plumbing**	
	CP Fitting	Jaquar /Hindware or equivalent
	Sanitary Ware	Hindware / Cera / Parryware or equivalent
	Sanitary Fittings	Jaquar /Hindware
	Geyser	Bajaj / Sphere Hot / Crompton /Racold / V Guard / Havells
	Stainless Steel sink	Nirali / Diamond or equivalent
	C.I. Pipe	Bengal Iron Corporation or equivalent ISI make
	Urinal Partition Glass	Merino / Saint Gobain/ Modi / Asai
	GI Pipe	Tata/ Jindal / Zenith or equivalent
	CP Fitting	Prince /Astral or equivalent
	PVC & CPVC Pipe	Prince /Astral or equivalent
3	**Civil Work**	
	Ceramic Tiles/vitrified homogeneous glazed tiles.	HR Johnson, Kajaria, Nitco,ASL or equivalent
	Cement	Ultratech , ACC , JK Cement , Ambuja
	Chemical Pasting (Tiles)	Pidilite , Fosroc , Eurokart
	Steel	Sail ,Tisscon , Ispat , Tata

Note:

[a] Where other Material are proposed to be used these should be got approved from the Architect/Bank's Engineer before execution of particular item. In case of Non- Availability of any material of specified make, the Alternative equivalent make should be used only after it is approved in writing by the Employer or the Architect. The Material shall be used in preferential Order only.

[b] Before starting of work, contractor must get all samples/make approved from Architect/Bank's authorities before using at site.

[c] Consultants/Bank's authorities reserve the right to add or delete name of any manufacturers and when required.

[d] Consultants/Bank's authorities reserve rights to select any of the specified brands mentioned above.

LIST OF INDIAN STANDARDS REFEREED TO

1. I.S. NO. 1200 – Latest measurement of building and civil engineer work.
2. I.S. NO. 287 – 1973 recommendation for maximum permissible moisture content of timber used for different purpose in different climatic zones
3. I.S.NO. 1141 – 1973 code of practice for seasoning of timbers.
4. I.S.NO. 6534 – 1971 guiding principles for grading and inspection of timber.
5. I.S.NO. 1200 (part XXI) 1973.
6. I.S.NO. 3845 – 1966 code of practice for joints used in wooden furniture.
7. I.S.NO. 4450 – 1967 wooden flush doors. Type to method of test for.
8. I.S.NO. 4970 – 1973 key for identification of commercial timber.
9. I.S.NO. 3364 (part II) – 1975 methods of measurements and evaluations of defects in timber, part II converted timber.
10. I.S.NO. 1708 – 1969 methods of testing shall clear specimens of timber.
11. I.S.NO 6342 – 1971 Rose wood logs for production of sliced veneers.
12. I.S.NO 5248 – 1969Teakloges for production of sliced veneers.
13. I.S.NO. 2202 (part I) 1973. Specification for wooden flush door shutters (solid core type cat I plywood).
14. I.S.NO. 2338 (part 1) 1967 code pf practice for finishing of wood-based materials part 1 operations and workmanship.
15. I.S. No. 7360 – 1975 Methods of sampling of plywood.
16. I.S.NO. 303 – 1975 Specification for plywood for general purposes.]
17. I.S.NO. 3129 – 1965 Specification for article board for insulation purposes.
18. I.S.NO. 3513 – 1966 (part – III & part iV) High and medium density wood-based laminates part III general purposes. Part IV sampling test.
19. I.S. NO. 1659 – 1979 Block boards.
20. I.S.NO. 7916 – 1974 Decorative plywood using plurality or veneers for decorative faces.
21. I.S NO. 3478 – 1966 Height density wood particle boards.
22. I.S. NO. 1734 (part 1 to XX) Plywood method of test for
    Part I -General
    Part II -Plywood
    Part III -Battens
23. I.S.NO. 1328 – 1970 veneer decorative plywood.
24. I.S. NO 710 Marine ply.
25. I.S.NO 3087 – 1965 Wood particle boards (medium density)
26. I.S. NO. 3087 – 1965 Specification for synthetic rising adhesives for plywood (phonolic & Amino plastic)
27. I.S.NO. 2046 – 1969 Specification for decorative laminate.
28. I.S. NO. 8273 – 1976 Fibrous gypsum plaster boards.
29. I.S. No. 2095 – 1964 Gypsum plaster boards.
30. I.S.NO. 2542 (part 1) – 1978 Gypsum plaster concrete products, methods of test for part 1 – plaster and concrete.
31. I.S NO. 8272 – 1976 Gypsum plaster for use in the manufacture of fibers plaster boards.
32. I.S.NO. 2441 – 1963 Fixing coiling covering code of practice for.
33. I.S.NO. 2835 – 1977 Specification for flat transparent sheet glass.
34. I.S NO. 2395 (part 1) – 1966, 2395 (part 11) – 1967 painting to concrete masonry, plaster surface code of practice for part –1 operation and workmanship part II schedule.
35. I.S.NO. 3548 – 1966 Glazing in building code of practice.
36. I.S.NO 6279 – 1965 Specification for ready mixed paint brushing, matt or egg-shell flat finishing, interior.
37. I.S.NO. 137 – 1965 Specification for ready mixed paint brushing, matt or egg-shell flat finishing, interior to Indian standard colors as required.
38. I.S.NO. 133- 1975 Specification for ready mixed paint brushing, wooden coating, interior it Indian standard colors.
39. I.S. NO 129 – 1950 Specification for enamel interior (a) under coating (b) finishing.
40. I.S.NO. 120- 1950 Specification for ready mixed paint brushing, finishing interior oil glass, for general purposes to Indian standard colors.
41. I.SNO. 533-1973 Specification for gum spirit of turpentine (oil of turpentine.)
42. I.S.NO. 101 – 1964 Methods of test for ready mixed paints and enamel.
43. I.S.NO. 75-1973 Specification for linseed oil, and refined.
44. I.S.NO. 77 – 1973 Specification for linseed oil, and refined.
45. I.S.NO. 124 (part1) – 1976 Specification for ready mixed paint brushing finishing semi- gloss for general purpose.
46. I.S.NO. 5884 – Specification for woolen carpets.

47. I.S.NO. 104- 1979 Specification for ready mixed paint Brushing finishing, zinc chrome primer.
48. I.S. NO 5391 – 1969 Adjustable metal chairs for use of typist and operators in telephone exchanges.
49. I.S.NO. 8756 – 1978 Ball catches for use in wooden almirahs.
50. I.S.NO 3499 – 1976 (part 11) chairs for office purposes metal revolving and tilting.
51. I.S.NO. 5416-1969 General purposes wooden chairs methods of test for.
52. I.S NO. 6185 – 1971 High chairs specification and safety requirements for.
53. I.S.NO> 4116 – 1976 Joints used in wooden furniture code of practice for.
54. I.S.NO 3485 – 1966 Joints used in wooden furniture code of practice for.
55. I.S.NO. 7070- 1973 Shelving racks wooden (adjustable and non-adjustable) type.
56. I.S.NO 4414-1977 table tops (wooden)
57. I.S.NO. 5967-1969 Tables, wooden method of test for.
58. I.S.NO. 3564 –1975 Door closures (hydraulically regulated).
59. I.SNO. 3564 – 1979 Drawer locks, cupboards and box locks.
60. I.S.NO. 7981 – (part1) – 1975 Glossary of terms relating to builder's hardware – part 1 locks.
61. I.S.NO. 204- (part 1 & 11) 1978 Tower bolts ferrous metals and non-ferrous metals.

Note: The various items to be used in the interior decoration work shall be of ISI standards. Whenever the items/ products do not have ISI marks standard, shall be got tested from Laboratory for its quality etc. necessary testing charges shall be borne by the contractor.

ADDITIONAL INSTRUCTION FOR CEMENT AND STEEL :

Bank shall not Issue/Supply cement and reinforcement steel to be used for this work.
The cement and reinforcement steel required for the above said work shall be procured by contractor at its own cost. The brands for cement shall be **Ultratech, Ambuja** Company confirming to IS-12269/87 latest amendment ISO-9000 of 53 grade only.
Approved make of TMT reinforcement steel :- **TATA, ESSAR, Electrothurm (ET), National** as per confirming to IS 1786/85 latest amendment TMT Fe-415/Fe-500. TMT Steel shall be purchased by only manufacturing company/Authorized dealer/ Distributor/ Stockiest only shall be allowed to use 6 mm plain steel shall be as per IS 2062/99 with latest amendments of any brand/make.
Any of the above mentioned brands of Cement and Reinforcement steel shall only be used by the contractor at the time of execution.
WASTAGE OF CEMENT AND REINFORCEMENT STEEL:
As the contractor is to bring the cement and steel, the question of considering the wastage on the basic of issue rate does not arise i.e. no separate payment shall be made for any kind of wastage in the materials. The payment for reinforcement bar will be made on theoretical weight basis. The weight shall be computed on the basis of the length of the steel used in the work multiplied by the standard unit weight of MS/HYSD/TMT bar as mentioned in IS code No.1786.
The steel consumption either less than 7.5% of the standard consumption shall be penalized either at the double existing Bank's approved tender rate or the prevailing market rate, whichever is more.
Similarly, for cement also, the less consumption beyond 5% shall be penalized at the double existing Bank's approved tender rate or the prevailing market rate, whichever is more.
TESTING OF CEMENT AND STEEL:
It should be specifically noted that the cement and steel brought by the contractor at site of work shall be used only after the same is tested at the approved laboratory as per the direction of the Engineer- in-charge. Such approved laboratory may be located at Baroda, Ahmedabad or Mumbai.
NOTE:
For steel used only approved above said brand and testing of steel as per IS-CODE -1786 -2008 with latestamendments and edition only.
Contractor also submit test certificate for steel for particular dispatch lot from manufacturer/company/supplier conforming as per IS -1786-2008.
All the charge for the transport and testing of the samples shall have to be borne by the contractor. The frequency of testing such material shall be in accordance to the relevant Indian Standards as directed by Engineer-in-charge.

SIGNATURE OF TENDERER

..... Bidders Signature with Stamp and date

SPECIFICATIONS OF CIVIL WORKS & MATERIALS

M-1 WATER:

1.1 Water shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil and injurious alkalies, salts, organic matter and other deleterious material which will either weaken the mortar or concrete or cause efflorescence or attack the steel in R.C.C. Container for transport, storage and handling of water shall be clean. Water shall conform to the standards specified in I.S. 456-2000.

1.2 If required by the Engineer-in-charge it shall be tested by comparison with distilled water. Comparison shall be made by means of standard cement tests for soundness, time of setting and mortar strength as specified in I.S. 269-1989. Any indication of unsoundness, change in time of setting by 30 minutes or more or decrease of more than 10 percent in strength of mortar prepared with water sample when compared with the results obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

1.3 Water for curing mortar, concrete or masonry should not be too acidic or too alkaline. It shall be free of elements which significantly affect the hydration reaction or otherwise interfere with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces.

1.4 Hard and bitter water shall not be used for curing.

1.5 Portable water shall generally be found suitable for curing mortar or concrete.

M-2 LIME:

2.1 Lime shall be hydraulic lime as per I.S. 712-1984. Necessary tests shall be carried out as per I.S. 6932 (Parts I to X) 1995.

2.2 The following field tests for limes are to carried out ---

a] A very rough idea can be formed about the type of lime by its visual examination i.e. fat lime bears pure white color, lime in form of porous lumps of dirty white color, indicates quick lime, and solid lumps the unburnt lime stone.

b] Acid tests for determining the carbonate content in lime. Excessive amount of impurities and rough determination of class of lime.

2.3 Storage shall comply with I.S. 712-1984. The slaked lime, if stored, shall be kept in a weather proof and damp proof shed with impervious floor and sides to protect it against rain, moisture, weather and extraneous materials mixing with it. All lime that has been damaged in any way shall be rejected and all rejected materials shall be removed from site of work.

2.4 Field testing shall be done according to I.S. 162-1989 to show the acceptability of materials.

M-3 CEMENT:

3.1 Cement shall be ordinary Portland slag cement as per I.S. 269-1989 or Portland slag cement as per I.S. 455- 1976 and revised latest I.S.

M-4 WHITE CEMENT:

4.1 The white cement shall conform to I.S. 8042-1989.

M-5 COLOURED CEMENT:

5.1 Colored cement shall be with white or grey Portland cement as specified in the item of the work.

5.2 The pigments used for colored cement shall be of approved quality and shall not exceed 10% of cement used in the mix. The mixture of pigment and cement shall be properly ground to have a uniform color and shade. The pigments shall have such properties as to provide for durability under exposure to sun-light and weather.

5.3 The pigment shall have the properly such that it is neither affected by the cement not detrimental to it.

M-6 SAND:

6.1 Sand shall be natural sand, clean, well graded, strong, durable and gritty particles free from injurious amounts of dust, clay, kankar nodules, soft or flaky particles, shale, alkali, salts, organic matter, loam, mica or other deleterious substances and shall be got approved from the Engineer-in-charge. The sand shall not contain more than 8% of silt as determined by field tests. If necessary the sand shall be washed to make it clean.

6.2 Coarse Sand : The fineness modulus of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse shall be as under ---

I.S. Sieve Designation	% by weight passing sieve	I.S. Sieve Designation	% by weight passing sieve
4.55 mm	100	600 Micron	30-100
2.36 mm	900-100	300 Micron	5-70
1.18 mm	70-100	150 Micron	0-60

6.3 Fine Sand: The fineness modulus shall not exceed 1.0. The sieve analysis of fine sand shall be as under ---

I.S. Sieve Designation	% by weight passing sieve	I.S. Sieve Designation	% by weight passing sieve
4.55 mm	100	600 Micron	40-85
2.36 mm	100	300 Micron	5-50
1.18 mm	75-100	150 Micron	0-10

M-7 STONE DUST:

7.1 This shall be obtained from crushing hard black tray or equivalent, it shall not contain more than 8% of silt as determined by field test with measuring cylinder. The method of determining silt contents by field test is given as under.

7.2 A sample of stone dust to be tested shall be placed without drying in 200 mm measuring cylinder. The quantity of the sample shall be such that it files the cylinder up to 100 mm mark. The clean water shall be added up to 150 mm mark. The mixture shall be stirred vigorously and the content allowed to settle for 3 hours.

7.4 The height of silt visible as settled layer above the stone dust shall be expressed as percentage of the heightof the stone dust below. The stone dust containing more than 8% silt shall be washed so as to bring the silt content within the allowable limit.

7.5 The fineness modulus of stone dust shall not be less than 1.80.

M-8 STONE GRIT:

8.1 Grit shall consist of crushed or broken stone and be hard, strong, dense, durable, clean, of proper gradation and free from skin or coating likely to prevent proper adhesion of mortar. Grit shall generally be cubical in shape and as far as possible flaky elongated pieces shall be avoided. It shall generally comply with the provisions of I.S. 383-1990. Unless a special stone of a particularly quarry is mentioned, grit shall be obtained from the best black trap or equivalent hard stone as approved by the Engineer-in-charge. The grit shall have no deleterious reaction with cement.

8.2 The grit shall conform to the following gradation as per sieve analysis :

I.S. Sieve Designation	% by weight passing sieve	I.S. Sieve Designation	% by weight passing sieve
12.50 mm	100%	4.75 mm	2.20%
10.00 mm	80-100%	2.36 mm	0.25%

8.3 The crushing strength of grit will be such as to allow the concrete in which it is used to build-up the specified strength of concrete.

8.4 The necessary tests for grit shall be carried out as per the requirements of I.S. 2338 (Parts I to VIII) 1988, asper instruction of the Engineer-in-charge. The necessity of test will be decided by the Engineering-in- charge.

M-9 CINDER:

9.1 Cinder is well brunt furnace residue which has been fused or sintered into lumps of varying sizes.

9.2 Cinder aggregates shall be well burnt furnace residue obtained from furnace using coal fuel only. Itshall be sound clear and free from clay, dirt, ash or other deleterious matter.

9.3 The average grading for cinder aggregates shall be as mentioned below :20 mm 100

10 mm 86
5.75 mm 70
2.36 mm 52

M-10 LIME MORTAR:

10.1 LIME: Shall conform to specification M-2. WATER: Water shall conform to specification M-1. SAND: Sand shall conform to specification M-6.

10.2 PROPORTION OF MIX Mortar shall consist of such proportions of slaked lime and sand as may be specified in the item. The slaked lime and shall be measured by volume.

10.3 PREPARATION OF MORTAR Lime mortar shall be prepared by wet process as per I.S. 1625-1971. Power driven mill shall be used for preparation of lime mortar. The slaked lime shall be placed in the mill in an even layer and ground for 180 revolutions with sufficient water. Water shall be added as required during grinding (care being taken not to add more water) that will bring the mixed material to a consistency of stiff paste. Thoroughly wetted sand shall then be added evenly and the mixture ground for another 180 revolutions.

10.4 STORAGE: Mortar shall always be kept damp, protected from sun and rain till used up, covering it by tarpaulin or open sheds.

10.5 USE: All mortar shall be used as soon as possible after grinding. It should be used on the day on which it is prepared. But in no case mortar made earlier than 36 hours shall be permitted for use.

M-11 CEMENT MORTAR:

11.1 Water shall conform to specification M-1. Cement shall conform to specification M-3. Sand shall conformto M-5.

11.2 PROPORTION OF MIX: 11.2.1 Cement and sand shall be mixed to specified proportions, sand being measured by measuring boxes. The proportion of cement shall be by volume on the basis of 50 Kg./Bag of cement being equal to 0.0342 cu.m. The mortar may be hand mixed or machine mixed as directed.

11.3 PREPARATION OF MORTAR : 11.3.1 In hand mixed mortar, cement and sand in the specified proportions shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogeneous mixture of uniform color is obtained. Mixing platform shall be so arranged that no deleterious extraneous material shall get mixed with mortar or mortar shall flow out. While mixing, the water shall be gradually added and thoroughly mixed to form a stiff plastic mass of uniform color so that each particle of sand shall be completely covered with a film of wet cement. The water cement ratio shall be adopted as directed.

11.4 The mortar so prepared shall be used within 30 minutes of adding water. Only such quantity of mortar shall be prepared as can be used within 30 minutes.

M-12 STONE COURSE AGGREGATE FOR NOMINAL MIX CONCRETE:

12.1 Coarse aggregate shall be of machine crushed stone of black trap or equivalent and be hard, strong, dense, durable, clean and free from skin and coating likely to prevent proper adhesion of mortar.

12.2 The aggregate shall generally be cubical in shape. Unless special stones of particular quarries are mentioned aggregates shall be machine crushed from the best black trap or equivalent hard stone as approved. Aggregate shall have no deleterious reaction with cement. The size of the coarse aggregate for plain cement concrete and ordinary reinforced cement concrete shall generally be as per the table given below. However, in case of reinforced cement concrete the maximum limit may be restricted to 6 mm. less than the minimum lateral clear distance between bars or 6mm. less than the cover whichever is smaller.

TABLE

I.S. Sieve Designation	Percentage Passing for single sized aggregates of nominal size			I.S. Sieve Designation	Percentage Passing for single sized aggregates of nominal size		
	40 mm	20 mm	16 mm		40 mm	20 mm	16 mm
80 mm	-	-	-	12.5 mm	-	-	-
63 mm	100	-	-	10 mm	0.5	0.20	0.30
40 mm	80-100	100	-	4.75 mm	-	0.50	0.50
20 mm	0-20	85-100	100	2.75 mm	-	-	-
10 mm	-	-	85-100				

NOTE:- This percentage may be varied somewhat by the Engineer-in-charge when considered necessary for obtaining better density and strength of concrete.

12.3 The grading test shall be taken in the beginning and at the change of source of materials. The necessary tests indicated in I.S. 383-1990 and I.S. 456-2000 shall have to be carried out to ensure the acceptability. The aggregates shall be stored separately and handled in such a manner as to prevent the intermixing of different aggregates. If the aggregates are covered with dust, they shall be washed with water to make, them clean.

M-13 BLACK TRAP OR EQUIVALENT HARD STONE COURSE:

13.1 Aggregate for Design Mix Concrete: Course aggregate shall be of machine crushed stone of black trap or equivalent hard stone and be hard, strong, dense, durable, clean and free from skin and coating likely to prevent proper adhesion of mortar.

13.2 The aggregates shall generally be cubical in shape, unless special stones of particular quarries are mentioned, aggregates shall be machine crushed from the best, black trap or equivalent hard stones as approved. Aggregate shall have no deleterious reaction with cement.

13.3 The necessary tests indicated in I.S. 383-1990 and I.S. 456-2000 shall have to be carried out to ensure the acceptability of the material.

13.4 If aggregate is covered with dust it shall be washed with water to make it clean.

M-14 BRICK BATS AGGREGATE:

14.1 Brick bat aggregate shall be broken from well burnt or slightly over burnt and dense bricks. It shall be homogeneous in texture, roughly cubical in shape, clean and free from dirt of any other foreign material. The brick bats shall be of 40 mm to 50 mm size unless otherwise specified in the item. The under burnt or over burnt brick bats shall not be allowed.

14.2 The brick bats shall be measured by volume by suitable boxes as directed.

M-15 BRICKS:

15.1 The bricks shall be hand or machine moulded and made from suitable soils and kiln burnt. They

shall be free from cracks and flaws not nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform color. The bricks shall be moulded with a frog of 100mm x 40 mm and 10mm to 20mm deep on one of its flat sides. The bricks shall not break when dropped on the ground from a height of 600 mm.

15.2 The size of modular bricks shall be 190mm x 90mm x 90mm.

15.3 The size of conventional bricks shall be as under ---225 x 110 x 75mm.

15.4 Only bricks of one standard size shall be used on one work. The following tolerances shall be permittedin the conventional size adopted in a particular work.

Length : 3.0 mm Width : 1.50 mm Height : 1.50 mm

15.5 The crushing strength of the bricks shall not be less than 35 Kg./Sq.Cm. The average water absorption shallnot be more than 20% by weight. Necessary tests for crushing strength and water absorption etc. shall be carried out as per I.S. 3495 (Part I to IV)-1992.

M-15A FLYASH BUILDING BRICKS :

The Flyash building bricks shall conform to Grade-5 of IS-13757. The frog of the 80 to 100 mm x 40 mm x 10 to 20 mm size.

The size of modular bricks shall be 190 mm x 90 mm x 90 mm.

The size of conventional brick shall be 230 mm x 110 mm x 70 mm.

Only bricks of one standard size shall used on one work. The following tolerances shall permitted in the conventional size adopted in a particular work:

Length: ñ 4 mm

Width: ñ 2 mm

Height : ñ 2 mm

The physical characteristic of bricks shall be as follows.

The minimum compressive strength of Fly ash building bricks shall not be less than 70 Kg/Sq.Cm. and the testshall be conform to IS-3495 (Part-I).

The averages water absorption not more than 20 percentage by weight and the test shall conform to IS-3495(Part-3). Sampling of Flyash building bricks and criteria for conformity shall be as per I.S.:5454.

M-16 STONE:

16.1 The stone shall be of the specified variety such as Granite/Trap stone/Quartzite or any other type of good hard stones. The stones shall be obtained only from the approved quarry and shall be hard, sound, durable and free from defects like cavities, cracks, sand holes, flaws, injurious veins, patches of loose or soft materials etc. and weathered portions and other structural defects or imperfections tending to affect their soundness and strength. The stone with round surface shall not be more than 5% of dry weight. When tested in accordance with I.S. 1134-1985. The minimum crushing of the strength of the stone shall be 200 Kg./Sq.Cm. unless otherwise specified.

16.2 The samples of the stone to be used shall be got approved before the work is started.

16.3 The khanki facing stone shall be dressed by chisel as specified in the item for khanki facing in required shape and size. The face of the stone shall be so dressed that the bushing on the exposed face shall not project by more than 40 mm. from the general wall surface and on face to be plastered it shall not project by more than 19 mm nor shall it have depressions more than 10 mm from the average wall surface.

M-17 LATERITE STONE:

17.1 Laterite stone shall be obtained from the approved quarry. It shall compacted in texture, sound, durable and free from soft patches. It shall have a minimum crushing strength of 100 Kg/Sq.Cm. in its dry condition. It shall not absorb water more 20% of its own weight, when immersed for 25 hours in water. After quarrying, the stone shall be allowed to weather for some time before using in work.

17.2 The stone shall be dressed into rectangular blocks so that all faces are from waviness and unevenness and the edges true and square.

17.3 Those type of stone in which white clay occurs should not be used.

17.4 Special corner stones shall be provided where so directed.

M-18 MILD STEEL BARS/TMT/CRS BARS:

18.1 Mild steel bars reinforcement TMT/CRS Bars for R.C.C. work shall conform to I.S. 432 (Part-II)-1982 and shall be of tested quality. It shall also comply with the relevant part of I.S. 456-1978 and revised latest I.S. Code.

18.2 All the reinforcement shall be clean and free form dirt, paint, grease, mill scale or loose or thick rust at the time of placing.

18.3 For the purpose of payment the bar shall be measured correct up to 10 mm length and weight payable workedout as per the rate specified below :

(i)	6 mm	0.22 Kg/Rmt.
(ii)	8 mm	0.39 Kg/Rmt.
(iii)	10 mm	0.62 Kg/Rmt.

(iv)	12 mm	0.89 Kg/Rmt.
(v)	14 mm	1.21 Kg/Rmt.
(vi)	16 mm	1.58 Kg/Rmt.
(vii)	18 mm	2.00 Kg/Rmt.
(viii)	20 mm	2.47 Kg/Rmt.
(ix)	22 mm	2.98 Kg/Rmt.
(x)	25 mm	3.85 Kg/Rmt.
(xi)	28 mm	4.38 Kg/Rmt.
(xii)	32 mm	6.32 Kg/Rmt.
(xiii)	36 mm	8.00 Kg/Rmt.
(xiv)	40 mm	9.86 Kg/Rmt

M-19 HIGH YIELD STRENGTH STEEL DEFORMED BARS:

19.1 High yield strength steel deformed bars shall be either cold twisted or hot rolled and shall conform to I.S. 1739-1978 and I.S. 1139-1966 respectively.

19.2 Other provision and requirements shall conform to specification No. M-18 for Mild Steel Bars.

M-20 HIGH TENSILE STEEL WIRES:

20.1 The high tensile wires for use in pre-stressed concrete shall conform to I.S. 2090-1983.

20.2 The tensile strength of the high tensile steel bars shall be as specified in the item. In absence of the given strength and minimum strength shall be taken as per para 6-1 of the I.S. 1785-1962. Testing shall be done as per I.S. requirements.

20.3 The high tensile steel shall be free from loose mill scale, rust, oil, grease or any other harmful matter. Cleaning of steel bars may be carried out by immersion in solvent solution, wire brushing or passing through a pressure box containing carborundum.

20.4 The high tensile wire shall be obtained from manufactures in coils having diameter not less than 350 times thediameter of wire itself so that wire springs back straight on being uncoiled.

M-21 MILD STEEL BINDING WIRE:

21.1 The mild steel wire shall be of 1.63mm or 1.22mm (16 or 18 gauge) diameter and shall conform to I.S. 280- 1978.

21.2 The use of black wire will be permitted for binding reinforcement bars. It shall be free from rust, oil, paint, grease, loose mill scale or any other undesirable coating which may prevent adhesion of cement mortar.

M-22 STRUCTURAL STEEL:

22.1 All structural steel shall conform to I.S. 226-1975. The steel shall be free from the defects mentioned in I.S. 226- 1975 and shall have a smooth finish. The material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. Rivet bars shall conform to I.S. 1148-1992.

22.2 When the steel is supplied by the contractor test certificates of the manufacturers shall be obtained according to I.S. 226-1975 and other relevant Indian Standards.

M-23 GALVANISED IRON SHEETS:

23.1 The galvanized iron sheets shall be plain or corrugated sheets of gauge as specified in item. The G.I. Sheets shall conform to I.S. 277-1992. The sheets shall be undamaged in carriage and handling either by rubbing off of zinc coating or otherwise. They shall have clean and bright surface and shall be free from dents, bends, holes, rust or white powdery deposit.

23.2 The length and width of G.I. sheets shall be as directed as per site condition.

M-23-A G.I.VALLEYS GUTTER, RIDGES :

23-A.1 The G.I. ridges and hips shall be of plain galvanized sheets class-3 of the thickness as specified in item. These shall be 600 mm width and properly bent up to shape without damage to the sheets in process of bending.

23-A.2 Valleys gutters and flashings shall be also of galvanized sheet of thickness as specified in item. Valleys shall be 900 mm. wide overall and flashing shall be 380 mm wide over all. They shall be bent to the required shape without damage to the sheet in the process of bending.

M-24 ASBESTOS CEMENT SHEETS :

24.1 Asbestos cement sheets plain, corrugated or semi-corrugated shall conform to I.S. 459-1970. The thickness of the sheets shall be as specified in the item. The sheet shall be free from all defects such as cracks, holes, deformities, chipped edges or otherwise damaged.

24.2 Ridges and Hips :

24.2.1 Ridges and hips shall be of same thickness as that of A. C. sheets. The types of ridges shall be suitable for the type of sheets and locations.

24.2.2 Other accessories to be used in roof such as flashing pieces, eaves filler pieces, valley gutters, north light and ventilator curves, barge boards etc. shall be of standard manufacture and shall be suitable for the type of sheets and location.

M-25 MANGALORE PATTERN ROOF TILES:

25.1 The Mangalore pattern tiles shall conform to I.S. 654-1992 for Class `AA' or `A' type as specified in item. Samples of the tiles to be provided shall got approved from the Engineer-in0charge. Necessary tests shallbe carried out as directed.

M-26 SHUTTERING:

26.1 The shuttering shall be either of wooden planking of 30mm minimum thickness with or without steel lining or of steel plates stiffened by steel angles. The shuttering shall be supported on battens and beams and props of vertical ballies properly cross braced together so as to make the centering rigid. In places of ballie props, bricks pillar of adequate section built in mud mortar may be used.

26.2 The form work shall be sufficiently strong and shall have camber, so that it assumes correct shape after deposition of the concrete and shall be able to resist forces caused by vibration of concrete, live load of men working with it and other incidental loads associated with it. The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement grout.

26.3 If at any stage of work during or after placing concrete in the structure, the form work sags or bulges out beyond the required shape of the structure, the concrete shall be removed and work redone with fresh concrete and adequately rigid form work. The complete form work shall be got inspected by and approved from the Engineer-in-charge, before the reinforcement bars are placed in position.

26.4 The props shall consists of bullies having 100mm minimum diameter measured at mid length and 80mm at thin end and shall be placed as per design requirement. These shall rest squarely on wooden sole plates 40 mm. thick and minimum bearing area of 0-10 sq.m. Laid on sufficiently hard base.

26.5 Double wedges shall further be provided between the sole plate and wooden props so as to facilitate tightening and easing of shuttering without jerking the concrete.

26.6 The timber used in shuttering shall not be so dry so as to absorb water from concrete and swell or bulge nor do so green or wet so as to shrink after erection. The timber shall be properly sawn and planed on the sides and the surface coming in contact with concrete. Wooden form work with metal sheet lining or steel plates stiffened by steel angles shall be permitted.

26.7 As far as practicable, clamps shall be used to hold the forms together and use of nails and spikes avoided.

26.8 The surface of timber shuttering that would come in contact with concrete shall be well wetted and coated with soap solution before the concreting is done. Alternatively coat of raw linseed oil or oil of approved manufacture may be applied in place of soap solution. In case of steel shuttering either soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Under no circumstances black or burnt oil shall be permitted.

26.9 The shuttering for beams and slabs shall have camber of 4mm per metre (1 in 250) or as directed by the Engineer-in-charge so as to offset the subsequent deflection. For cantilevers, the camber at free end shall be 1/50 of the projected length or as directed by the Engineer-in-charge.

M-27 EXPANSION JOINTS - PREMOULDED FILLER:

27.1 The item provides for expansion joints in R.C.C. frame structures for internal joints, as well as exposed joints, with the use of premoulded bituminous joint filler.

27.2 Premoulded bituminous joint filler, i.e. performed strip of expansion joint filler shall not get deformed or broken by twisting, bending or other handing when exposed to atmospheric condition. Pieces of joint filler that have been damaged shall be rejected.

27.3 Thickness of the pre moulded joint filler shall be 25 mm unless otherwise specified.

27.4 Premoulded bituminous joint filler shall conform to 1.5 1838-1961.

M-28 EXPANSION JOINTS - COPPER STRIPS AND HOLD FASTS:

28.1 The item provides for expansion joints in R.C.C. frame structure for internal joints as well as for exposed joints with the use of necessary copper strip and holdfasts.

28.2 Copper sheet shall be 1.25 mm thick and of 1.25 mm with `U' shape in the middle, copper strip shall have holdfast of 3 mm diameter copper rod fixed to the plate soldered on strip at intervals o f about 30 cm. or as shown in the drawing or as directed. The width of each flange (horizontal side) of the copper plate to be embedded in the concrete work shall be 25 mm Depth of `U' to be provided in the expansion joint, in the copper plate shall be of 25 mm.

M-29 TEAK WOOD:

29.1 The teak wood shall be of good quality as required for the item to be executed. When the kind of wood is not specifically mentioned, good Indian teak wood as approved shall be used.

29.2 Teak wood shall generally be free from large, loose, dead or cluster knots, flaws, warps, twists, shakes, bends or any other defects. It shall generally be uniform in substance and of straight fibers as far as

possible. It shall be free from rot, decay, harmful fungi and other defects of harmful nature, which will affect the strength, durability or its usefulness for the purpose for which it is required. The colour shall be uniform as far as possible. Any effort like painting, using any adhesive or resinous materials made to hide the defects shall render the pieces liable to rejection by the Engineer-in-charge.

29.3 All scantlings, planks etc. shall be sawn in straight lines and planes in the direction of grains and ofuniform thickness.

29.4 The tolerances in the dimensions shall be allowed at the rate of 1.5 mm per face to be planed.

29.5 First Class Teak Wood :

First class teak wood shall have no individual hard and sound knots, more than 6 sq.cm. in size and the aggregate area of such knots shall not be more than 1% of area of piece. The timber shall be closed grained.

29.6 Second Class Teak Wood :

No individual hard and sound knots shall be more than 15 sq.cm. in size and aggregate area of such knotsshall not exceed 2% of the area of piece.

M-29-A NON-TEAK WOOD :

The non-teak wood shall be chemically treated, seasoned as per I.S. Specifications and of good quality. The type of wood shall be got approved before collecting the same on site. Fabrication of wooden members shall be started only after approval. For this purpose wood of Bio, Kalai, Sires, Saded, Behda, Jamun, Sisoo will be used for door frames whereas only Kalai, Siras, ,Halda, Kalam etc. will be permitted for shutters after proper seasoning and chemical treatment.

The non teak wood shall be free from large, loose dead of cluster knots, flows, shakes, warps, bends, or any other defect. It shall be uniform in substance and of straight fibers as far as possible. It shall be free from rots, decay, harmful fungi and other defects of similar nature which will affect the strength, durability or its usefulness for the purpose for which it is required. The colour of the wood shall be uniform as far as possible. The scantlings, planks etc. shall be sawn in straight lines and planes in the directionof grain and of uniform thickness.

The department will use the Agency to produce a certificate from the Forest Department in the event of a dispute and the decision of the Department shall be final and binding to the contractor.

The tolerance in the dimension shall be allowed at 1.5 mm. per face **to be planed.**

M-30 WOODEN FLUSH DOOR SHUTTERS (SOLID CORE) :

30.1 The solid core type flush door shutters shall be of decorative or non-decorative type as specified inthe drawing. The size and thickness of the shutter shall be as specified in drawings or as directed. The timber species for core shall be used as per I.S. 2202-(Part-I)-1991. The timber shall be free from decay and insect attack. Knots and knot holes less than half the width of cross-section of the members, pitch streaks and harmless pin holes shall be permissible except in the exposed edges of the core members. The commercial plywood, cross bands shall conform to I.S. 303-1298.

30.2 The face panel of the shutters shall be formed by gluing by the hot press process on both faces of the core with either plywood or cross bands, or face veneers. The lapping, rebating, opening of glazing, venation etc. shall be provided if specified in the drawing.

30.3 All edges of the door shutters shall be square. The shutters shall be free from twist or warp in its plane. Both faces of the shutters shall be sand papered to smooth even texture.

30.4 The shutters shall be tested for ---

i] End Immersion Test: The test shall be carried out as per I.S. 2202 (Part-I) 1991. There shall be no delaminating at the end of the test.

ii] Knife Test: The face panel when tested in accordance with I.S. 1659-1990 shall pass the test.

iii] Glue Adhesion Test: The flush door shall be tested for glue adhesive test in accordance with I.S. 2202(Part- I)- 1991. The shutters shall be considered to have passed the test if no delaminating occurs in the glue linesin the plywood and if no single delaminating more than 80 mm. in length and more than 3 mm. in depth has occurred in the assembly glue lines between the plywood face and the style and rail. Delaminating at the corner shall be measured continuously around the corner. Delaminating at the knots knot, whole and other permissible wood defects shall not be considered in assessing the sample.

30.5 The tolerance in size of solid core type flush door as under:-

In nominal thickness # 1.2 mm. In nominal height # 3 mm. The thickness of the shutters shall be uniform throughout with a permissible variation of not more than 0.8 mm. when measured at any two points.

M-31 ALUMINIUM DOORS, WINDOWS, VENTILATORS:

31.1 Aluminum alloy used in the manufacture of extruded window sections shall conform to I.S. designation HEA-WP of I.S.:733- 1991 and also to I.S. Designation WVG - WP OF I.S.:1285-1991. The sections shall be as specified the drawing and design. The fabrication shall be done as directed.

31.2 The hinges shall be cast or excluded aluminum hinges of same type as in window but or large size.

31.3 The hinges shall normally be of 50 mm projecting type non projecting type of hinges may also be used if directed. The handles of door shall be of specified design. A suitable lock for the door operable either from outside shall be provided. In double shutter door, the first closing shall have a concealed aluminum alloy bolt at top and bottom.

M-32 ROLLING SHUTTERS:

32.1 The rolling shutters shall conform to I.S. 6248-1991. Rolling shutters shall be supplied of specified type with accessories. The size of the rolling shutters shall be specified in the drawings. The shutters shall be constructed with interlocking lath sections formed from cold rolled steel strips not less than 0.9 mm. thick and 80 mm. wide for shutters up to 3.5 m. Width not less than 1.25 mm. thick and 80 mm. wide for shutters 3.5 m. in width and above unless otherwise specified.

32.2 Guide channels shall be of mild steel deep channel section and of rolled pressed or built up (fabricated) joint less construction. The thickness of sheet used shall not be less than 3.15 mm.

32.3 Hood covers shall be made of M.S. sheets not less than 0.92 mm. thick. For shutters having width 3.5 mts. and above, the thickness of M.S. sheet for the hood covers shall be not less than 1.25 mm.

32.4 The spring shall be of best quality and shall be manufactured from tested high tensile spring steel wire or strip of adequate strength to balance the shutters in position. The spring pipe shaft etc. shall be supported on strong M.S. or malleable C.I. brackets. The brackets shall be fixed on the or under the lintel as specified with raw plugs and screws bolts etc.

32.5 The rolling shutters shall be of self rolling type up to 8 sq.m. clear area without ball bearing and up to 12 sq.m. clear area with ball bearing. If the rolling shutters are of larger then gear operated type shutters shall be used.

32.6 The locking arrangement shall be provided at the bottom of shutter at both ends. The shutters shall be opened from outside.

32.7 The shutters shall be completed with door suspension, shafts, locking arrangements, pulling hooks, handles and other accessories.

M-33 COLLAPSIBLE STEEL GATE :

33.1 The collapsible steel gate shall be in one or two leaves and size as per approved drawings or as specified. The gate shall be fabricated from best quality mild steel channels, flats etc. Either steel pulleys or ball bearings shall be provided in every double channel. Unless otherwise specified the particulars of collapsible gate shall be as under ---

i] Pickets : These shall be of 20 mm. M.S. channels of heavy sections unless otherwise shown on drawings.

The distance centre to centre of pickets shall be 12 cms. with an opening of 10 cms. ii] Pivoted M.S. flats shall be 20 mm. x 6 mm.

iii] Top and bottom guides shall be from tee or flat iron of approved size.

iv] The fittings like stoppers, fixing hold fasts, locking cleats, brass handles and cast iron rollers shall be of approved design and size.

M-34 WELDED STEEL WIRE FABRIC:

34.1 Welded steel wire fabric for general purpose shall be manufactured from cold drawn steel `as drawn' or galvanized steel conforming to I.S. 226-1975 With longitudinal and transverse wire securely connected at every intersection by a process of electrical resistance welding and conforming to I.S. 4948-1974. It shall befabricated and finished in a workman like manner and shall be free from injurious defects and shall be rust proof. The type of mesh shall be oblong or square as directed. The mesh sizes and sizes of wire for square as well as oblong welded steel wire fabric shall be as directed. The steel wire fabric in panels shall be in one whole piece in each panel as far as stock sizes permit.

M-35 EXPANDED METAL SHEETS :

35.1 The expanded metal sheets shall be free from flaws, joints, welds, broken, stands, laminations and other harmful surface defects Expanded metal steel sheet shall conform to I.S. 412 - 1992 except that blank sheets need not be with guaranteed mechanical properties. The size of the diamond mesh of expanded metal and dimensions of strands (width and thickness) shall be as specified. The tolerance on nominal weight of expanded metal sheets shall be of + 10 per cent.

35.2 Expanded metal in panels shall be in one whole piece in each panel as far as stock sizes permit. The expanded metal sheets shall be coated with suitable protective coating to prevent corrosion.

M-36 MILD STEEL WIRE (Wire Gauze Jali) :

36.1 Mild steel wire may be galvanized, as indicated. All finished steel wire shall be well cleanly drawn to the dimensions and size of wire as specified in item. The wire shall be sound, free from slits, surface flaws, rough jagged and imperfect edges and other harmful surface defects and shall conform to

I.S. 280-1992.

M-37 PLYWOOD :

37.1 The Plywood for general purpose shall conform I.S. 303-1998. Plywood is made by cementing together thin boards or sheets of wood into panels. There are always an old number of layers 3, 5, 7, 9 ply etc. The pliesare placed so that the grain of each layer is at right angles to the grain in the adjacent layers.

37.2 The chief advantage of plywood over a single board of the same thickness is the more uniform strength of the plywood along the length and width of the plywood and greater resistance to cracking and slitting with change in moisture content.

37.3 Usually synthetic resins are used for gluier. Phenol resins are usually cured in a hot press which compresses and simultaneously heats the plies between hot plates which maintain a temperature of 90 degree C. to 140 degree C. and a pressure of 11 to 14 Kg./Sq.cm. on the wood. The time of heating may be anything from 2 to 60 minutes depending upon thickness.

37.4 When water glue are used the wood absorbs so much Water that the finished plywood must be dried carefully, When synthetic resins are used as adhesive the finished plywood must be exposed to atmosphere of controlled humidity until the proper amount of moisture has been absorbed.

37.5 According to I.S. : 303-1998 the plywood for general purpose shall be of three grades namely BWR.WWR and CWR depending upon the adhesives used for bonding the veneers and it will be further classified into six types namely AA, AB, AC, BB, BC and CC based on the quality of the two faces, each face being of three kinds namely A, B and C. After pressing, the finished plywood should be reconditioned to a moisture content not less than 8 percent and not more than 16 percent.

TABLE

37.6 THICKNESS OF PLYWOOD BOARDS

Board	Thick
3 ply	3 mm
	4 mm
	5 mm
	6 mm
6 ply	5 mm
	6 mm
	8 mm
	9 mm
7 Ply	9 mm
	13 mm
	16 mm
9 Ply	13 mm
	16 mm
	19 mm
11 ply	19 mm
	22 mm
	25 mm

M-38 GLASS :

38.1 All glass shall be of the best quality, free from specks, bubbles, smokes, veins, air holes blisters and other defects. The kind of glass to be used shall be as mentioned in the item or specification or in the special provisions or as shown in detailed drawings. Thickness of glass panes shall be uniform. The specifications for different kinds of glass shall be as under ----

38.2 Sheet Glass :

38.2.1 In the absence of any specified thickness or weight in the item or detailed specifications of the item of work, sheet glass shall be weighing 7.5 Kg./Sq.m. for panes up to 600 mm. x 600 mm.

38.2.2 For panes larger than 600 mm. x 600 mm. and up to 800 mm. x 800 mm. glass weighing not less than 8.75Kg./Sq.m. shall be used. For bigger panes up to 900 mm. x 900 mm. glass weighing not less than 11.25 Kg./Sq.m. shall be used.

38.2.3 Sheet glass shall be patent flattened glass of best quality and for glazing and framing purposes shall conform to

I.S. 761-1963. Sheet glass of the specified colors shall be used, if so shown on detailed drawings or so specified. For important buildings and for panes with any dimensions over 900 mm. plate glass of specified thickness shall be used.

38.3.0 Plate Glass :

38.3.1 When plate glass is specified it shall be "Polished Patent Plate Glass" of best quality. It shall have both the surface ground flat and parallel and polished to obtain clear undisturbed vision and reflection. The plate glass shall be of the thickness mentioned in the item or as shown in the detailed drawing or as specified. In the absence of any specified thickness, the thickness of plate glass to be supplied shall be 6 mm. and a tolerance of 0.20 mm. shall be admissible.

38.4.0 Obscured Glass :

38.4.1 This type of glass transmits light so that vision is partially or almost completely obscured. Glass shall be plain rolled, figured, ribbed or fluted, or frosted glass as may be specified as required. The thickness and type of glass shall be as per details on drawings or as specified or as directed.

38.5.0 Wired Glass : Glass shall be with wire netting embedded in a sheet of plane glass. Electrically welded 13 mm. Georgian square mesh shall be used. Thickness of glass shall not be less than 6 mm. wired glass shall beof type and thickness as specified.

M-39 ACRYLIC SHEETS :

39.1 Acrylic sheets shall be of thickness as specified in the item and of a specified shape and size as the case may be. Panels may be flat or curved. It should be light in weight. It shall be colorless or colored or opaque as specified in the item. Colorless sheet shall be as transparent as the finest optical glass. Its light transmission rate shall be about 95%. Transparency shall not be affected for the sheets of larger thickness. It shall be extremely resistant to sunlight, weather and low temperatures. It shall not show any significant yellowing or change in physical properties or loss of light transmission over a longer period of use.

The sheet shall be impact resistant also. Sheets should be available in complete range of standard transparent, translucent and opaque colors. Sheets should be available in complete range of standard transparent, translucent and opaque colors. Sheets shall be of such quality that they can be cut, bent and jointed as desired. Solution for the joints shall be used as per the requirement of manufacture.

M-40 PARTICLE BOARD :

40.1 The particle boards used for face panels shall of best quality free from any defects. The particle boards shall be made with phenolmaldehyde adhesive. The particle boards shall conform to I.S. 3087-1990. "Specification for wood particle board for general purpose." The size and the thickness of the particle board shall be as specified.

M-41 EXPANDED POLYSTYRENE OR FRAMES STYROPER SLEBS:

41.1 The expanded polystyrene ceiling boards and tiles shall be of approved make and shall be of size thickness, finish and color and indicated. It shall be of high density and suitable for use as insulting material. The insulting material shall be like slab of thermocole etc.

M-42 RESIN BONDED FIBRE GLASS :

42.1 The resin bonded fiber glass tiles or roils shall be of approved make and shall be sizes, thickness andfinish as indicated.

42.2 For test of Mineral wood thermal insulation Blanket I.S. 3144-1965 followed.

42.3 Insulation wool blanket shall be with the following coverings on one or both sides as indicated.

(1) Bituminizedhessian craft paper suitable for use in position where moisture has to be excluded.

(2) Hessian cloth or Kraft paper for keeping out dust.

(3) G. I. wire netting, suitable or surfaces to be plastered over.

M-43 FIXTURES & FASTENINGS :

General ---

i] The fixtures and fastenings, that is, butt, hinges, tee and strap hinges, sliding door bolts, tower bolts, door latch, bath-room latch, handles, door stoppers, casement window fasteners, casement stays and ventilator catch shall be made of the metal as specified in the item or its specifications.

ii] They shall be of iron, brass, aluminum, chromium plated iron, chromium plated brass, copper oxidized iron, copper oxidized brass or anodized aluminum as specified.

iii] The fixtures shall be heavy, medium or light type. The fixtures and fastenings shall be smooth finished and shall be such as will ensure ease of operation.

iv] The samples of fixtures and fastenings shall be got approved as regards quality and shape before providing them in position.

v] Brass and anodized aluminum fixtures and fastenings shall be bright finished. Holdfasts :

I] Holdfasts shall be made from mild steel flat 30 cm. length and one of the holdfasts shall be bent at right angle and two nos. of 6 mm. dia. holes shall be made in it for fixing it to the frame with screws. At the other end, the holdfast shall be forked and bent at right angles in opposite directions.

Butt Hinges :

i] Railway standard heavy type butt hinges shall be used when so specified.
ii] Tee and strap hinges shall be manufactured from M.S. sheet. Sliding Door Bolts (Aldrops) :
i] The Aldrops as specified in the item shall be used and shall be got approved.Tower Bolts (Barrel Type) :
i] Tower bolts as specified in the item shall be used and shall be got approved.Door Latch :
i] The size of door latch shall be taken as the length o f latch.Bathroom Latch :
i] Bathroom latch shall be similar to tower bolt.Handle :
i] The size of the handles shall be determined by the inside grip length of the handles. Handles shall have abase plate of length 50 mm. more than the size of the handle.
Door Stoppers :
i] Door stoppers shall be either floor door stopper type or door catch type. Floor stopper shall be of overallsize as specified and shall have a rubber cushion.
Door Catch :
i] Door catch shall be fixed at a height of about 900 mm. from the floor level such that one part of the catch isfitted on the inside of the shutter and other part is fixed in the wall with necessary wooden plug arrangements for appropriate fixity. The catch shall be fixed 20 mm. inside the face of the door for easy operation of catch.
Wooden Door Stop With Hinge :
Wooden door stop of size 100 mm. x 60 mm. x 40 mm. shall be fixed on the door frame with a hinge of 75 mm. size and at a height of 900 mm. from the floor level. The wooden door stop shall be provided with 3 coats of approved oil paint.
Casement Window Fastener :
i] Casement window fastener for single lead window shutter shall be left or right handed as directed.Casement Stays (StraightPeg. Stay) :
i] The stays shall be made from a channel section having three holes at appropriate position so that the windowcan be opened either fully or partially as directed.
Size of the stay shall be 250 mm. to 300 mm. as directed.
Ventilator Catch :
i] The pattern and shape of the catch shall be as approved.Pivot :
i] The base and socket plate shall be made from minimum 3 mm. thick plate, and projected pivot shall not be less than 12 mm. dia. and 12 mm. length and shall be firmly riveted to the base plate case of iron pivot andin single piece base in the case of brass pivot.

M-44 PAINTS :

44.1 Oil Paints :

Oil paints shall be of the specified color and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint or specified shade or tint is not available white ready mixed paint with approved strainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.

All the paints shall meet with the following general requirements -

i] Paint shall not show excessive setting in a freshly opened full cane and shall easily be redispressed with paddle to a smooth homogeneous state. The paint shall show no curdling, levering, caking or color separation and shall be free from lumps and skins.

ii] The paint as received shall brush easily, possess good leveling properties and show no running or sagging tendencies.

iii] The paint shall not skin within 48 hours in a three quarters filled closed container.

iv] The paint shall dry to a smooth uniform finish free from roughness, grit unevenness and other imperfections.

Ready mixed paid shall be used exactly as received from the manufacturers and generally according to their instructions and without any admixtures whatsoever.

44.2 Enamel Paints :

The enamel paint shall satisfy in general requirements as mentioned in specification of oil paints. Enamel paints shall conform to I.S. 2933-1991.

M-45 FRENCH POLISH :

The French polish of required tint and shade shall be prepared with the below mentioned ingredientsand other necessary materials :

i] Denatured spirit of approved quality.
ii] Shellac.
iii] Chandras.
iv] Pigment.

The French polish so prepared shall conform to I.S. 348-1991.

M-46 MARBLE CHIPS FOR MARBLE MOSAIC TERRAZZO :

46.1 The marble chips shall be of approved quality and shades. It shall be hard, sound, dense and homogeneousin texture with crystalline and coarse grains. It shall be uniform in color and free from stains, cracks, decay and weathering.

46.2 The size of various colors of marble chips ranging from the smallest up to 20 mm. shall be used where the thickness of top wearing layers is 6 mm. in size. The marble chips of approved quality and colors only as per grading as decided by the Engineer-in-charge shall be used for marble mosaic tiles or works.

46.3 The marble chips shall be machine crushed. They shall be free from foreign matter, dust etc. Except as above the chips shall conform to I.S. 2114-1990.

M-47 FLOORING TILES :

A] Plain Cement Tiles -

47.1.1 The plain cement tiles shall be of general purpose type. These are the tiles in the manufacture of which nopigments are used. Cement used in the manufacture of tiles shall be as per Indian Standards.

47.1.2 The tiles shall be manufactured from a mixture of cement and natural aggregates by pressure process.During manufacture, the tiles shall be subjected to a pressure of not less than 140 Kg./Sq.cm. The proportion of cement to aggregate in the backing of the tiles shall be not leaner than 1:3 by weight. The wearing face, though the tiles are of plain cement, shall be provided with stone chips of 1 to 2 mm size. The proportion of cement to the marble chips aggregate in the wearing layer of the tiles shall be three parts of cement to one part of chips by weight. The minimum thickness of wearing layer shall be 3 mm. The color and texture of wearing layer shall be uniform throughout its face and thickness. On removal from mould, the tiles shall be kept in moist condition continuously at least for seven days and subsequently, if necessary, for such long period as would ensure their conformity to requirements of I.S. 1237- 1990 requiring resistance to wear and water absorption.

47.1.3 The wearing face of the tiles shall be plain, free from projections, depressions and cracks and shall be reasonably parallel to the back face of the tile. All angles shall be right angle and all edges shall be sharp and true.

47.1.4 The tile sizes shall generally be square shape 24.85cm. x 24.85cm. or 25cm. x 25cm. The thickness of the tiles shall be 20 mm.

47.1.5 The tolerance of length and breadth shall be plus or minus 1 mm. The tolerance on thickness shall be plus 5 mm.

47.1.6 The tiles shall satisfy the tests as regards transverse strength, resistance to wear and water absorption as per I.S. 1237-1980.

47.2 B] Plain Coloured Tiles :

47.2.1 These tiles shall have the same specifications as for plain cement tiles as per (A) above except that they shall have a plain wearing surface wherein pigments are used. They shall conform to I.S. 1237-1990.

47.2.2 The pigment used for coloring cement shall not exceed 10% by weight of cement used in the mix. The pigments, synthetic or otherwise, used for coloring tiles shall have permanent color and shall not contain materials detrimental to concrete.

47.2.3 The color of the tiles shall be specified in the item or as directed.

47.3 C] Marble Mosaic Tiles :

47.3.1 These tiles have the same specifications as per plain cement tiles except the requirements as stated below ---

47.3.2 The marble mosaic tiles shall conform to I.S. 1237-1990. The wearing face of the tiles shall be mechanically ground and filled. The wearing face of tiles shall be free of projections, depressions and cracks and shall be reasonably parallel to the back face of the tiles. All angles shall be right angles and all edges shall be sharp and true.

47.3.3 Chips used in the tiles be from smallest up to 20 mm. size. The minimum thickness of wearing layer of tiles shall be 6 mm. For pattern of chips to be bad on the wearing face, a few samples with or without their full size photographs as directed shall be presented to the Engineer-in-charge for approval.

47.3.4 Any particular samples, if found suitable shall be approved by the Engineer-in-charge, of he may ask for particular sized chips to be more or less in the sample presented. The samples shall have to be made by the contractor till a suitable sample finally approved for use in the work. The contractor shall ensure that the tiles supplied for the work shall be in conformity with the approved sample only, in terms of its dimensions, thickness of backing layer and wearing surface, materials, ingredients, color shade, chips, distribution etc. required.

47.3.5 The tiles shall be prepared from cement conforming to Indian Standards or coloured Portland cement generally depending upon the color of tiles to be used or as directed.

47.4 D] Chequered Tiles :

47.4.1 Chequered tiles shall be plain cement tiles or marble mosaic tiles. The former shall have the same

specification as per (A) above and the latter as per marble mosaic tiles as per (C) except as mentioned below.

47.4.2 The tiles shall be of nominal size of 250mm. x 250mm. or as specified. The centre to centre distance of the chequer shall not less than 25mm. and not more than 50mm. The overall thickness of the tile shall be 22mm.

47.4.3 The grooves in the chequers shall be uniform and straight. The depth of the grooves shall not be less than 3mm. The chequered tiles shall be plain, coloured or mosaic as specified. The thickness of the upper layer measured from the top of the chequers shall not be less than 6mm. The tiles shall be given the first grinding with machine before delivery to site.

47.4.4 Tiles shall conform to relevant I.S. 1237-1990.

47.5 E] Chequered Tiles for Staircases :

47.5.1 The requirements of these tiles shall be the same as chequered tiles as per (D) above except in following respects :

i] The length of a tile including nose shall be 330 mm.ii] The minimum thickness shall be 28 mm.

iii] The nosing shall have also the same wearing layer at the top.

iv] The nosing edge shall be rounded.

v] The front portion of the tile for a minimum length of 75mm. from and including the nosing shall have grooves running parallel to nosing and at centres not exceeding 25mm. Beyond that the tiles shall have normal chequer pattern.

M-48 ROUGH KOTAH STONE :

48.1 The kotah stones shall be hard, even, sound and regular in shape and generally uniform in color. The color of the stone shall generally be green. Brown coloured stones shall not be allowed for use. They shall be without any soft veins, cracks or flaws.

48.2 The size of the stones to be used for flooring shall be size 600mm. x 60mm. and/or size 600mm. x 450mm. as directed. However, smaller sizes will be allowed to be used to the extent of maintaining the required pattern. Thickness shall be as specified.

48.3 Tolerance of minus 30 mm. on account of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be plus 3mm.

48.4 The edges of stones shall be truly chiseled and table rubbed with coarse sand before paving. All angles and edges of the stone shall be true, square and free from chipping and the surface shall be true and plain.

48.5 When machine cut edges are specified, the exposed edges and the edges at joints shall be machine cut. The thickness of the exposed machine cut edges shall be uniform.

M-49 POLISHED KOTAH STONES :

49.1 Polish kotah stone shall have the same specifications as per rough kotah stone except as mentioned below.

49.2 The stone shall have machine polished smooth surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished. the stones to be used for dado, skirting, platforms sink, veneering, sills, steps etc. where machine polishing after the stones are fixed in situ is not possible shall be double polished.

M-50 DHOLPUR STONE SLAB :

50.1 Dholpur stone slab shall be of best quality as approved by the Engineer-in-charge. The stone slab shall be without any veins, cracks, and flaws. The stone slab shall be even, sound and durable, regular in shape and uniform color.

50.2 The size of the stone shall be as specified in the item or detailed drawing or as approved by the Engineer-in-charge. The thickness of the stone shall be as specified in the item of work with the permissible tolerance of plus or minus 2 mm. The provisions in respect of polishing as for polished kotah stone shall apply to polished Dholpur stone also. All angles and edges of the face of stone slab shall be fine chiseled or polished as specified in the item of work and all the four edges shall be machine cut. All angles and edgesof the stone slab shall be true and plane.

50.3 The sample of stone shall be got approved from the Engineer- in-charge for shade and tint for a particular work. It shall be ensured the stones to be used in a particular work shall not differ much in shade or tint from the approved sample.

M-51 MARBLE SLAB:

Marble slabs shall be white or of other color and of best quality as approved by the Engineer-in-charge. Slab shall be bard, close, uniform and in texture. They shall also be free defects and cracks. The surface shallbe machine polished to an even and perfectly plane surface and the edges, machine cut

true and square.The rear face shall be rough enough to provide key for the mortar.

Marble slabs with natural veins, if selected shall have to be laid as per the pattern given by the Engineer-in- charge. Size of the slabs shall be minimum 450mm. x 450mm. and preferably 600mm. x 600mm. However, smaller sizes will be allowed to be used to the extent of maintaining required pattern.

The slab shall not be thinner than the specified thickness at its thinnest part. A few specimen of finished slab to be used shall be deposited by the contractor in the office for reference.

Except as above, the marble slabs shall conform to I.S. 1130-1993 or as revised from time to time.

M-52 GRANITE STONE SLAB:

52.1 Granite shall be of approved color and quality, The stone shall be hard even, sound and regular in shape and generally uniform in color. It shall be without and soft veins, cracks or flaws.

52.2 The thickness of the stone shall be specified in the item.

52.3 All exposed faces shall be double polished to tender truly smooth and even reelecting surface. The exposed edges and corners shall be rounded off as directed. The exposed edges shall be machine cut and shall have uniform thickness.

M-53 P.V.C. FLOORING:

53.1 P.V.C. sheets for P.V.C. floor covering shall be homogenous flexible type, conforming to I.S. 3462-1991. The P.V.C. covering shall neither develop any toxic effect while put to use not shall give off any disagreeable odors.

53.2 Thickness of flexible type covering or tiles shall be as specified in the description of the item.

53.3 The flexible type shall be backed with hessian or other woven fabric. The following tolerance shall be applicable on the nominal dimensions of the sheet rolls or tiles :

(a)	Thickness	+/- 0.15 mmLength or width
1.	300 mm Square tiles	+/- 0.20 mm
2.	600 mm Square tiles.	+/- 0.40 mm
3.	900 mm Square tiles.	+/- 0.60 mm
4.	Sheets and rolls.	+/- 0.10 percent.

53.4 Adhesive :

53.4.1 The adhesive for PVC flooring shall be of the type and make recommended by the manufacturers of PVC sheetstiles.

M-54 FACING TILES:

54.1 The facing tiles (burnt clay facing bricks) shall be free from cracks, flaws, and nodules of free lime. They shall be thoroughly burnt and shall have plane rectangular faces with parallel sides and sharp straight right angled faces. The texture of the finished surface that will be exposed when in place, shall conform to an approved sample consisting not less than four stretcher bricks each representing resistance to penetration by rain and greater durability than common bricks. The tiles shall conform to I.S. 2691-1995.

54.2 The standard size of facing brick tiles shall be 19 x 9 x 4 cms. The facing brick tiles shall be provided with frog which shall conform to I.S. 1077-1992.

54.3 The permissible tolerance in dimensions specified above shall be as follows.

Size	Tolerance for	
	1st Class Brick	2nd Class Brice
19 cm	+/- 6 mm	+/- 10 mm
9 cm	+/- 2 mm	+/- 7 mm
4 cm	+/- 1.5 mm	+/- 3 mm

The tolerance for distortion or war page of face or edges of individual brick from a plane surface and from astraight line respectively shall be as follows :

Facing dimensions.	Permissible tolerance.
Max. below 19 cms.	Max. 2.5 mm.
Max. above 19 cms.	Max. 3.0 mm

54.5 The average compressive strength obtained as a sample of five tiles when tested in accordance with the procedure aid as per I.S. 1077-1992 shall be not less than 175 Kg/Sq.cm. The average compressive strength of any individual brick shall not less than 160 Kg/Sq.cm.

54.6 The average water absorption for five brick tiles shall not be exceed 12 percent of average weight of brick before testing. The absorption for each individual brick shall not exceed 25 percent.

54.7 The brick tiles when tested in accordance with I.S. 1077-1992 the rate of efflorescence shall not be more than "Slightly effloresced".

M-55 WHITE GLAZED TILES:

55.1 The tiles shall be of best quality as approved by the Engineer-in-charge. They shall be flat and true to shape. They shall be free from cracks, crazing, spots, chipped edges and corners. The glazing shall be of uniform shade.

55.2 The tiles shall be of nominal size of 150mm. x 150mm. unless otherwise specified. The maximum variation from the stated sizes, other than the thickness of tile, shall be plus or minus 1.5mm. The thickness of the tile shall be 6mm. except as above the tiles shall conform to I.S. 777-1988.

M-56 GALVANISED IRON PIPES AHND FITTINGS:

Galvanized iron pipe shall be of the medium type and of required diameter and shall comply with I.S. 1239-1990. The specified diameter of the pipes shall refer to the inside diameter of the bore. Clamps, screw and all galvanized iron fittings shall be of the standard `R' or equivalent make.

M-57 BIB COCK AND STOP COCK:

57.1 A bib cock is a draw off tap with a horizontal inlet and a free outlet. A stop cock is a valve with a suitable means of connection for insertion in a pipe line for controlling or stopping the flow.

57.2 They shall be of screw down type and or brass chromium plated and of diameter as specified in the description of the item. They shall conform to I.S. 781-1990 and they shall be of best Indian make. They shall be polished bright.

57.3 The minimum finished weight of bib cock and stop shall be as given below--Dia. Bib Cock Stop Cock Dia. Bib Cock Stop Cock

8 mm. 0.25 Kg. 0.25 Kg. 15 mm. 0.40 Kg. 0.40 Kg.
10 mm. 0.30 Kg. 0.35 Kg. 20 mm. 0.75 Kg. 0.75 Kg.

M-58 GUN METAL WHEEL VALVE:

58-1 The gun metal wheel valve shall be of approved quality. These shall be of gun metal fitted with wheel andshall be of gate valve opening full way and of the size as specified. These shall conform to I.S. 778-1990.

M-59 WHITE GLAZED PORCELAIN WASH BASIN:

59.1 Wash basin shall be of white porcelain first quality best Indian make and it shall conform to I.S. 2556-(Part- IV)-1994 and I.S. 771-1990. The size of the wash basin shall be as specified in the item. The wash basin shall be of one piece construction with continued over-flow arrangements. All internal angles shall be designed so as to facilitate cleaning. Wash basin shall have single tap hole or two holes as specified. Each basin shall have a circular waste hole which is either rebated or beveled internally with 65 mm. dia. at top and 10 mm. depth to suit the waste fitting. The necessary stud slot to receive the bracket on the underside of the basin shall be provided. Basin shall have an internal soap holder recess which shall fully drain into the bowl.

59.2 White glazed pedestal of the quality and color as that of the basin shall be provided where specified in the item. It shall be completely recessed at the back for reception of supply and water pipe. It shall be capableof supporting the basin rigidly and adequately and shall be so designed as to make the height form the floor to top of the rim of basin 750 mm. to 800 mm. as directed.

M-60 EUROPEAN TYPE WATER COLSET/WITH LOW LEVEL FLUSHING:

60.1 The European type water closet shall be white glazed conforming to I.S. 2556-1994 and I.S. 771-1692.

60.2 `S' trap shall be provided as required with water seal not less not less than 50 mm.

The solid plastic seat and cover shall be of the best Indian make conforming to I.S. 2548-1996. They shall be made of moulded synthetic materials which shall be tough and hard with high resistance to solvents and shall be free from blisters and other surface defects and shall have chromium plated brass hinges and rubber butter of suitable size.

M-61 ORISSA TYPE WATER CLOSED:

61.1 The specification of Orissa type white glazed water closet of first quality shall conform to I.S. 2556 (Part-III) 1994 and relevant specification of Indian type water closet except that pan will be with the integral squating pan of size 580 mm x 440 mm. with raised footrest.

M-62 INDIAN TYPE WATER CLOSET:

The Indian type white glazed water closet of first class quality, size as specified in the item and conforming to I.S. 771-1979 and I.S. 2556-(Part-II)-1994. Each pan shall have integral flushing ring of suitable type with adequate number of holes all around as directed to have satisfactory flushing. It shall also have an inlet at back of front for connecting flush pipe as directed. The inside of the bottom of the pan shallhave sufficient slope from the front towards the outlet and the surface shall be uniform and smooth. Pan shall be provided with 100 mm. diameter `P' or `S' trap with approximately 50 mm. water seal and 50 mm. diameter vent horn.

FOOT RESTS: A pair of white glazed earthen ware rectangular foot rests of minimum size 250 mm. x 130 mm. x 20 mm. shall be provided with the water closet.

M-63 GLAZED EARTHEN WARE SINK :

The glazed earthenware sink shall be of specified size, color and quality. The sink shall conform to I.S. 771- Part-II-1992. The brackets for sinks shall conform to I.S. 775-1990.

The pipes shall conform to I.S. 1239-Part-I-1990 and I.S. 404-1993 for steel and lead pipes respectively. 32 mm. brass waste coupling of standard pattern with brass chain and rubber plug shall be provided withsink.

M-64 GLAZED EARTHEN WARE LIPPED TYPE FLAT BACK URINAL/CORNER TYPE URINAL:

The lipped type urinal shall be flat back or corner type as specified in the item and shall conform to I.S. 771- 1992. It shall be of best Indian make and size as specified and approved by the Engineer-in-harge. The flat back or corner type urinal must be of first class quality, free from any defects, cracks etc.

M-65 LOW LEVEL ENAMEL FLUSHING TANK:

65.1 The low level enamel flushing tank shall be of 15 liters capacity. It shall conform to I.S. 774-1990. The flushing cistern shall be of best quality and free from any defects. The flushing tank shall have outlet 32 mm diameter. The outlet shall be connected with W.C. Pan by lead pipe of P.V.C. pipe as specified. Theflushing tank shall be provided with inlet and outlet for fixing G.I. inlet pipes and over flow pipes. The flushing cistern shall be provided with chromium plated handle for flushing. The flushing tank shall be provided with bracket of cast iron so that it can be fixed on wall at specified height. The brackets shall conform to I.S. 775-1990.

M-66 CAST IRON FLUSHING CISTERN:

66.1 The cast iron flushing cistern shall be of 15 liters capacity. It shall conform to I.S. 774-1990. The flushing cistern shall be of best quality free from any defects.

66.2 The flushing cistern shall have outlet of 32 mm diameter. The outlet shall be connected to lead pipe of 32 mm diameter. The lead pipe shall conform to I.S. 404 (Part-I) 1993. For fixing G.I. inlet pipes and overflow pipe 20 mm dia. inlet and outlet shall be provided. The flushing cistern shall be provided with galvanized iron chain and pull of sufficient length and shall be got approved from the Engineer-in-charge. The

cast iron flushing cistern shall be painted with one coat of anticorrosive paint and two coats of paints. The flushing cistern shall be fixed on to C.I. brackets. The brackets shall conform to I.S. 775-1990.

M-67 FLUSH COCK:

Half turn flush cock (heavy weight) shall be of gun metal chromium plated of diameter as specified in the description of the item. The flush cock shall conform to relevant Indian Standards.

M-68 CAST IRON PIPES AND FITTINGS :

68.1 All soil, waste, vent and anti syphonage pipes and fittings shall conform to I.S. 1729-1991. The pipes shall have spigot and socket ends with head on spigot end. The pipes and fittings shall be true to shape, smooth, cylindrical their inner and outer surfaces being as nearly as practicable concentric. They shall be sound and nicely cast and shall be free from cracks, laps, pin holes or other imperfections and shall be neatly dressed and carefully fettled.

68.2 The end of pipes and fittings shall be reasonably square to their axis.

68.3 The sand cast iron pipes shall be of the diameter as specified in the description and shall be in length of

1.5 M., 1.8 M. & 2.0 M. including socket ends of the pipe unless shorter length are either specified or required at junction etc. The pipes and fittings shall be supplied without ears unless specified or directed otherwise.

68.4 Tolerances : The standard weights and thickness of pipes shall be as shown in the table below. A tolerance up to minus 10% may however be allowed against these standard weights.

Sr. No.	Nominal dia of bore	Overall Thick	Wight of pipe excluding ears		
			1.5 m long	1.m long	2 m long
1.	75 mm	5.00 mm	12.83 Kg.	16.52 Kg.	18.36 Kg.
2.	100 mm	5.0 mm	18.14 Kg.	21.67 Kg.	24.15 Kg.
3.	150 mm				
4.	250 mm				

A tolerance up to minus 15% in thickness and 20 mm. in length will be allowed. For fittings tolerance in lengths shall be plus 25 mm. and minus 10 mm.

The thickness of fittings and their socket and spigot dimensions shall conform to the thickness and dimensions specified for the corresponding sizes of straight pipes. The tolerance in weights and thickness shall be the same as for straight pipes.

M-68-A P.V.C. Pipes & Fittings:-

1. All soil, waste and vent pipes & fittings shall conform to I.S. 4985-1988 & I.S. 13592:1992. The pipes are provided with an integral rubber ring type socket at one end while the other end in kept plain, smooth & free from

burrs. The pipes and fittings shall be true to shape, smooth & cylindrical. They shall be free from cracks, laps, pinholes or other imperfection and shall be nearly dressed and carefully fettled.

2. The P.V.C. Pipes shall be of the diameter as specified in the description and shall be in length of 6.0,3.0 & 1.8 m including socket ends of the pipe unless shorter length are either specified or required at junction etc. Tolerances on specified length shall be + 10 mm and- 0 mm.

3. Rubber real rings for joints and Access Doors shall be manufactured in accordance with IS: 5382-1998. There are made out or natural rubber with a shore 'A' hardness of 40+5.

4.1 The mean outside diameter, outside diameter at any point and wall thickness manufactured plain or with socket shall be as shown in the following table:-

* All dimensions in millimeters.

Sr. No.	Nominal/Outside dia	Mean outside Diameter		Outside diameter at		Wall thick.	
		Min.	Max.	Min.	Max.	Min.	Max
1.	75	70.0	75.3	74.1	75.9	3.2	3.8
2.	100.	110.00	100.4	108.6	111.4	3.2	3.8

4.2 Minimum Wall thickness of sockets on pipes & Dimensions of sliding socket of pipes shall be as shown in following table.

* All dimensions in millimeters.

Sr. No.	Nominal outside diameter	Minimum wall thick of sockets on pipes.		Socket Depth min.	Mean insidediameter of socket at mil point	
		S2, Min	S3, Min		Min	Max
1.	75	2.9	2.4	40.00	75.1	75.3
2.	110	2.9	2.4	48.0	110.1	110.4

* The outside diameter of pipe shall be obtained by the method given in IS: 12235(Part-1)-1998, wall thicknessshall be measured by the method given in IS:12235(Part-2)1998.

4.3 The permissible variation between the mean outside diameter & the nominal outside diameter of a pipe shallbe positive in the form + x, where is less than or equal to greater of the following two values.

a) 0.03 mm, and

b) 0.003 x nominal outside diameter- rounded off to the next higher 0.1 mm.

4.4 The permissible variation between the outside diameter at any point (d1) & the nominal outside diameter(de)of a pipe shall not exceed the greater of the following two values.

a) 0.5mm, and

b) 0.012 de rounded off to the next higher 0.1

4.5 The thickness of fittings and their socket & spigot dimensions shall conform to the thickness and dimensionsspecified for the corresponding sizes of straight pipes.

M-69 NAHNI TRAP :

Nahni trap shall be of cast iron and shall be sound and free from porosity or other defects which affect serviceability. The thickness of the base metal shall not be less than 6.5 mm. The surface shall be smooth and free form crack, chips and other flaws or any other kind of defects which affect serviceability. The size of Nahni trap shall be as specified and shall be of self cleansing design.

The Nahni trap shall be of quality approved by the Engineer- in-charge and shall generally conform to the relevant Indian Standards.

The Nahni trap provided shall be with deep seal, minimum 50 mm. except at places where trap with deep seal cannot be accommodated. The cover shall be cast iron. Perforated cover shall be provided on the trap of appropriate size.

M-70 GULLY TRAP :

Gully trap shall conform to I.S. 651-1992. It shall be sound, free from defects such as fire cracks or hair cracks. The glaze of the traps shall be free from crazing. They shall give a sharp clear note when struck with light hammer. There shall be no broken blisters.

The size of the gully trap shall be as specified in the item.

Each gully trap shall have one C.I. grating of square size corresponding to the dimensions, of inlet of gully trap. It will also have a water tight C.I. cover with frame inside dimensions 300mm. x 300mm. the cover weighing not less than 4,53 Kg. and the frame not less than 2.72 Kg. The grating cover and frame shall be of sound and good casting and shall have truly square machined seating faces.

M-71 GLAZED STONE WARE PIPE AND FITTINGS :

The pipes and fittings shall be of best quality as approved by the Engineer-in-charge. The pipe shall be of best quality manufactured from stone-ware of fire clay, salt glazed thoroughly burnt through the whole thickness, of a close even texture, free from air blows, fire blisters, cracks and other imperfections, which affect the serviceability. The inner and outer surfaces shall be smooth and perfectly glazed.

The pipe shall be capable to withstand pressure of 1.5 m. lead without showing signs of leakage. The thickness of the wall shall not be less than (1/12)th of the internal dia. The depth of socket shall not be less than 38 mm. The socket shall be sufficiently large to allow a joint of 6 mm. around the pipe. The pipes shall generally conform to relevant I.S. 651-1992.

M-72 WALL PEG SAIL :

72.1 The aluminum wall peg rail shall have three aluminum pegs of approved quality and size. It shall be fixed on teakwood plank of size 450 mm x 75 mm x 20 mm. The teak wood shall be French polished or oil painted as specified..

G.I. WATER SPOUT:

The G.I. pipes of 40 mm dia shall be of medium quality and specials shall be of `R' brand or equivalent brand of best quality.

73.1 The pipe shall have length as required for the thickness of well in which it is fixed, and at the outside end tee and bend cut at half the length shall be provided and at either end coupling shall be provided and shall have better fixing. The water spout shall be provided as per detailed drawings or as directed.

M-73 ASBESTOS CEMENT PIPE (A.C. PIPE) :

74.1 The asbestos cement pipe of diameter as specified in the description of the item shall conform to I.S. 1926-1980. Special like bends, shoes cowls, etc. shall conform to relevant Indian Standards. The interior of pipe shall have a smooth finish, regular, surface and regular internal diameter. The tolerance in all dimensions shall be as per I.S. 1926-Part-I-1980.

M-74 CRYDON BALL VALVE :

Ball valve of screwed type including polythene float and necessary lever etc. shall be of the size as mentioned in the description of item and shall conform to I.S. 1703-1989.

M-75 BITUMEN FELT FOR WATER PROOFING AND DAMP PROOFING :

76.1 Bitumen felt shall be on the fiber bases and shall be of type 2, self finished felt grade-2 and shall conform to I.S. 1322-1998.**SELECTED EARTH :**

77.1 The selected earth shall be that obtained from excavated material or shall have to be brought from outside as indicated in the item. If item does not indicate anything, the selected earth shall have to be brought from outside.

77.2 The selected earth shall be good yellow soil and shall be got approved from the Engineer-in-charge. In no case black cotton soil or similar expansive and shrinkable soil shall be used. It shall be clean and free fromall rubbish and perishable materials, stones or brick bats. The clods shall be broken to a size of 50 mm. or less. Contractor shall make his own arrangements at his own costs for land for borrowing selected earth. The stacking of materials shall be done as directed by the Engineer-in-charge in such a way as not to interfere with any constructional activities and in proper stacks.

77.3 When excavated material is to be used, only selected stuff got approved from the Engineer-in-charge shall be used. It shall be stacked separately and shall comply with all the requirements of selected earth mentioned above.

M-76 CRACKSEAL :

Crack seal manufactured by chemistich/Chemisol Indian Ltd., is an acrylic base ready application compound.

M-77 CAST IRON STEPS :

The cast iron steps shall be clean, well-cast and they shall be free from air and sand holes, cold shuts and warping which are likely to impair the utility of the castings. The portion of the step which projects from wallsof the manhole shall have a raised required designed above the general plane of the top surface of the step along the edges of the tread to provide adequate non-slip grip. The steps shall be of dimensions 375 mm x 150 mm x 25 mm with necessary holding arrangement and carting minimum weight of 4.5 Kg. confirming to I.S. 5455-1992 or its latest version.

The cast iron steps shall be coated with a material having tar base or a place bituminous composition of cashew-nut shall liquid. The coating shall be smooth and tenacious. It shall not flow when exposed to a temperature of 63 degree C and shall not be brittle as to chip off at temperature of 0 degree C.

SPECIFICATIONS FOR ELECTRICAL WORKS

General:

The scope of work covers execution and completion of the electrical installation work in accordance with drawings & specifications.

Rules & Regulations:

The installation shall be generally carried out in confirmatory with the requirements of Indian Electricity Act 1910 (as amended up to date) and the latest Indian Electricity Rules and supplementary Regulations of the State Electricity Departments and Electricity Undertakings and where the installation is subject to inspection and approval of Fire Insurance and Explosives Authorities, such installation shall be planned and executed to conform to their special Rules.

1.0 Point Wiring:

1.1 Supply:

The following material shall be included in a point wiring and accessories.

a) Conduit - PVC rigid 2.0mm thick conduit and accessories.

b) Wires - PVC insulated copper conductor multi-stranded flexible type wires ISI mark of 1.0, 1.5, 2.5, 4.0, 6.0, 10, 16sq.mm

c) Switches - 5 Amp single pole, two-way switch, 5-amp socket, 15 Amp switch and socket, fan Regulators with flush metal boxes wherever concealed and front plates and boxes of company make for surface mounting all of approved make.

d) Cover plates for outlet boxes - 3 mm thick formica / Hylam sheet specially for electrical purposes.

e) Hardware's - screws and washers non rusting type brass type.

Switch Boards and outlet Boxes - Factory made boxes of approved make for flush mounting for switches and accessories and 16 SWG m.s. sheet with Gl boxes as outlet boxes with knock-outs for conduit entries and tapped holes for screws.

Holders - Pendant holders / angle holders / ceiling rose etc. of approved make white in color.

g) Industrial Sockets - Industrial type metal clad with metallic top.

1.2 Installation:

All conduit shall be concealed / surface mounted in / on walls, beam, column, slabs or concealed in false ceiling in all A/C areas etc. by necessary Charis or clamping with saddles, spacers of hot deep Gl. made. Charis shall be made in walls to conceal the conduits and then refilling of the Charis with cement mortar All switch boards and outlet boxes (placed for bracket wall points) shall be concealed / surface in/on walls and should be kept in line and level with help of spirit level. Fan boxes shall be provided with nut welded on top with threaded hook and check nut. Wire drawing should be done with the help of draw wire. The conduits shall be cleaned of all foreign materials before inserting the wires Drawing of wires should be done such that the insulation of wires is not damaged.

All works shall be done as per instruction and satisfaction of the Consultant.

For surface conducing wiring, the conduit fitting switch/ceiling fan regulator boxes etc. shall be installed surface exposed. Flexible conduits shall not be used earth continuity conductors. Separate earth wire shall be provided either inside or outside the flexible conduits which shall be connected by means of earth clips to the earth system at one end and to the equipment at the other end as per IS 3043-1987.

Size of wire shall be chosen to limit Voltage drop within 5 %. Area of conductor shall be 1.0, 1.5, 2.5, 4.00 and 10.0 sq. mm copper. Generally, not more than 8 to 10 points shall be wired in one circuit.

1.3 Testing:

After completion of wiring, installation of switches etc., testing shall be done for insulation resistance as specified in the tender

Notes: No Joints shall be allowed in any wires in the conduits, all wires shall only be joined oi connected at termination points. All circuits shall have individual neutrals and one neutral shall riot complete the whole wiring system.

Circuit's mains shall start from Distribution board to switch board or from Meter board to Distribution. The circuit's mains include supply and installation of two nos. of wires with earth wire for single phase mains and four nos. of wires with earth wire for three phase mains.

2.1 Supply:

a) Conduit - PVC rigid 2.0mm thick conduit and accessories.

b) Wires - PVC insulated copper conductor multi-stranded flexible type wires ISI mark of 1.0, 1.5, 2.5, 4.0, 6.0, 10, 16 sq.mm

2.2 Installation:

a) For conceal wiring system all conduits shall be laid in the slab before casting of slab and shall be concealed in walls by making charts in walls and refilling the same before the final plaster of wall is done. All the switch boards and outlet boxes also shall be installed concealed in line and level.

b) For surface wiring system all conduits / PVC trunking shall be clamped with hot deep Gl. saddles / spacers on wall, ceiling, beam, column etc. in line align with the help of spirit level. All the switch boards and outlet boxes shall be surface mounted type and to be installed in line and level.

c) Wires shall be drawn in conduit after cleaning of conduits and drawn with the help of draw wires. No damage to the insulation of wires should be done while drawing.

2.3 Testing:

After completion of wiring, installation of switches etc.. testing shall be done for insulation resistance as specified in the tender.

3.0 Distribution Boards:

3.1 Supply:

Distribution boards shall be of sheet metal with rated bus bars, factory made. They shall be for three-phase or single-phase distribution system as per the requirements or schedule of quantities.

3.2 Installation:

The distribution board shall be concealed in wall, flush mounted or surface mounted and should be in line and level. These shall be factory tested. Final MCBs on sub circuits shall be marked by permanent markers on the DB door

3.3 Test:

After installation of MCBs, it shall be tested.

4.0 M.C. B & ELMCB.

4.1 Supply:

MCB: These shall be SP.SPN.TP or TPN as specified in drawings Rating of 2A, 6A, l6A, 25A. 30A, 63A. 10KA fault level, as per IS-8828--S978; BS 3871-part l.

ELMCB: These shall be of SPN. TPN and specified in drawings of rated value. ELMCB - BS-4293 neutral advance feature at closing neutral will be first to contact at the time of opening neutral breaks last after allowing the phases to open first Since the ELCB is to be used as main switch, it shall have safe interrupting clearance as per IEC 408/IS 4064. The ELCB shall have terminals to terminate aluminum conductor up to 25 mm2. The ELMCB shall have sensitivity of 30 - 300 mA as per requirements

4.2 Installation:

All ELMCB and MCBs shall be installed in the DB on din rail provided in the DB, spares shall be blocked by blank plates.

4.3 Testing:

All ELMCB should be tested for overloading, short circuit, earth leakage tripping and MCBs should be tested for overloading and short circuit tripping

5.0 Material:

All materials, fittings and appliances used in the electrical installation shall be of the best quality of approved manufacturer and shall conform to the latest Indian Standard Specifications wherever these exist.

6.0 Workmanship:

Good workmanship and neat appearance are the prerequisites for compliance with the various sections of these specifications. The work shall be carried out under direct supervision of a person holding Certificate of Competency issued by the State Government and in accordance with the statutory rules and regulations in force. The relevant ISI code of practice shall be followed wherever applicable.

7.0 Drawing:

The set of all relevant electrical drawings, with specifications are furnished to the Contractor for his own use until the completion of the contract. However wherever required, detailed drawings shall be prepared and got approved.

On completion of the work, completion drawings shall be prepared and five copies of the same should be submitted to the Employer. The completion drawings shall indicate clearly the main switch board, the runs of various mains and sub-mains, position of points and their controls. All circuits shall be clearly indicated and numbered in the wiring diagrams and all points shall be given the same number as the circuit to which they are electrically connected.

8.0 Marking & Apparatus:

When a board is connected to voltage higher than 250 volts, all the terminals or leads of the apparatus mounted on it shall be marked in the following colors to indicate the different poles or phases to which the apparatus or its different terminals may have been connected.

Three Phases	--	Red, Blue & Yellow
Neutral	--	Black
Off wire	--	White or Grey
Earth wire	--	Green

Where four wire three phase wiring is done, the neutral shall be in black color and the other three wire in another color. Where more than one switch, each such switch has shall be marked to indicate which section of the installation it controls. The main switch shall be marked as such and where there is more than one main switch is the building, each such switch shall be marked to indicate which section of the installation it controls.

All marking required under this clause shall be clear and permanent.

9.0 Materials:

All materials used in the construction of fittings shall be of such quality, design and construction that will provide adequate

protection in normal use against mechanical and electrical failures and exposures to the risk of injury or electric shock and shall withstand the effects of exposure to atmosphere.

10.0 Ceiling Rose:

Ceiling rose and similar attachments - A ceiling rose or any other similar attachments shall not be used on a circuit, the voltage of which normally exceeds 250 Volts. Normally only one flexible cord shall be attached a ceiling rose. Specially designed ceiling roses shall be used for multiple pendants

11.0 Socket Outlets & Plugs:

A socket outlet shall not embody fuse terminals as an integral part of it. But the fuse may be embodied in plug in which case the plug shall be non-reversible and shall be so arranged and connected that the fuse is connected to an outer or phase conductor or the non-earthed conductor of the circuit. Every socket outlet shall be controlled by switch will be on the live side of the line. In an earthed system of supply, the outlet and plug shall be three pin type and the third terminal connected to earth.

Every lighting fitting shall be controlled by a switch and where control at more than point is necessary by as many as two ways and intermediate switches as there are control points. Lights, fans and socket outlets shall be so located as to provide maximum comfort to the occupant and to enable him to utilise the electricity in the most economical manner.

Where conductors are required to be drawn through tube or channel leading to the fittings, the tube or channel must be free from sharp angles or protecting edges and of such size as will enable them to be wired with the conductors used for the final sub-circuit without removing the braiding or taping. As far as possible all tubes or channels should be of sufficient size to permit looping back.

c) Where a light fitting is supported by one or more flexible cords, the maximum weight to which the twin flexible cords can be subjected shall be as follows:

SIZE OF TWIN FLEXIBLE CORDS

Nominal cross sectional		No. & diameter area of in wires		Maximum permissible weight	
Sq.Inch	**Sq.mm.**	**Sq.Inch**	**Sq.mm.**	**Sq.Inch**	**Sq.mm.**
0.006	0.5	14/0.0076	14/0.193	1.4	3
0.0010	-	23/0.0076	23/0.93	2.3	5
0.0017	1.5	40/0.0076	40/0.193	4.3	10

Where a weight is greater than 4.5 Kgs. (10 Lbs) then it has to be supported, two or three twin flexible cords shall be used so that the maximum weight to which any cord is subjected does not exceed the above values, or Alternatively other support viz. suitable metal pipe or suitable support shall be provided.

No inflammable shade shall form a part of a light fitting unless such shade is well protected against all risks of fire. Celluloid shade or light fitting shall not be used under any circumstances.

Enclosed type fittings shall be provided with a removable glass receptacle, arranged to enclose the lamp completely and of such size or construction as to prevent undue heating of the lamp or if the position of fitting be such that the glass receptacle is liable to mechanical damage the glass shall be protected by a suitable wire guard.

12.0 Fittings Wire:

The use of fitting wire shall be restricted to the internal wiring of the lighting fittings. Where fittings wire is used for wiring fittings, the sub-circuit leads shall terminate in a ceiling rose or connector from which they shall be carried into the fittings.

13.0 Lamp Holders:

Lamp holders for use on brackets and the like shall have not less than 1.3 cm (1/2") nipple and all those for use with flexible pendant shall be provided with cord grips. All lamp holders shall be provided with shade carriers. Where center contact Edison screw lamp holders are used, the outer or screw contact shall be connected to the ' middle wire ' or the neutral or to the earthed conductor of the circuit.

14.0 Lamps:

All incandescent lamps, unless otherwise required, shall be hung at height of 2.5m (8 ft.), above the floor level They shall be provided with caps of the following patterns:

Up to and including 200 watt.	-	Standard Bayonet (B)
Above 200 watts and not exceeding 300 watts	-	Edison Screw (E.S.)
Above 300 watts	-	Golliath Screw (GS)

15.0 Fans, Regulators and Clamps:

Ceiling Fans: Ceiling fans including their suspension shall conform to IS : 374-1951 and to the following requirements :

All ceiling fans shall be wired to ceiling roses or to special connector boxes and suspended from hooks or shackles with insulators between hooks and suspension rods. There shall be no joint in the suspension rod but if joints are unavoidable then such joints (2") minimum length and both ends of the pipes shall touch together within couplers and shall in addition to, be secured by means of split pins; alternatively, the two pipes may be welded.

Canopies on top of suspension rod shall effectively hide the suspension.

The leadings-in-wire shall be of nominal cross section area not less than 0.002 sq.inch (3.00.029") and shall be protected from abrasion.

ii) Exhaust fans shall be erected at the places indicated by the Architects. For fixing an exhaust fan, a circular hole shall be provided in the wall to suit the size of the frame, which shall be fixed by means of rag bolt embedded in the wall. The exhaust fan shall be aired as near to the hole as possible by means of a flexible cord, care being taken that the blades rotates in the proper direction.

TESTING OF INSTALLATION

16.0 Insulation Resistance:

The insulation resistance shall be measured by applying between earth and the whole system of conductors or any section thereof with all fuses in place and all switches closed and except in earthed concentric wiring all lamps in position or both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it need not exceed 500 volts for medium voltage circuits. Where the supply is derived from the three wire (AC or DC) or a poly phase system, the neutral pole of which is connected to earth either direct 01 through added resistance, the working pressure shall be deemed to be that which is maintained between the outer or phase conductor and the neutral.

The insulation resistance measured as above shall not be less than 50, divided by the number of points on the circuits provided that the whole installation shall be required to have an insulation resistance greater than one megohm.

Control rheostats, heating and power appliances and electrical sings may, it required, be disconnected from the circuit during the test, but in that event the insulation resistance between the case of frame work and all live parts or each rheostat appliance and sign shall not be less than that specified in the relevant IS specifications shall not be less than half a megohm.

The insulation resistance shall also be measured between all conductors connected to one or phase conductor of the supply and all the conductors connected to the middle wire or the neutral or to the other pole or phase conductors of the supply and its value shall not be less than that specified in sub clause(b)

On completion of an electric installation (or an extension to an installation) a certificate shall be furnished by the contractor countersigned by the qualified supervisor the installation was carried out. The certificate shall be in the prescribed form as required by the local Electrical Supply Authorities. One such recommended form is given in Appendix-B.

Testing of earth continuity path: The earth continuity conductor including metal conduits and metallic envelopes of cables in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit-breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

Testing of polarity of non-linked single pole switches:

In a two-wire installation a test shall be made to verify that all non-linked single pole switches have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to an outer of phase conductor or to the non-earthed conductor of the supply.

In a three wire or a four-wire installation, a test shall be made to verify that every non-linked single pole switch is fitted in a conductor which is labeled or marked for connection to one of the outer or phase conductor of the supply.

17.0 CONDUIT CAPACITY:

Maximum number of PVC insulated cables confirming to IS: 694-1977 that can be drawn in one conduit shall be as follows:

Nominal cross-sectional area of conductor SIZE OF CONDUIT

	20 mm		25mm		32mm		38mm		51mm		64mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1.5	5	4	10	8	18	12	--		--		--	
2.5	5	3	8	6	12	10	--		--		--	
4	3	2	6	3	10	8	--		--		--	
6	2	-	5	4	8	7	--		--		--	
10	2	-	4	3	6	5	8	6	--		--	
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	7	9	7
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

NOTE:

1. The above table shows the max. Capacity of conduits for a simultaneous drawing of cables.

2 The columns headed 'S' applies to runs of conduit which have distance not exceeding 4.25m between draw in boxes and which do not deflect from the straight by an angle of more than 15 The columns headed 'B' apply to runs of conduit which deflect from the straight by an angle of more than 15.

18.0 CABLES

18.1 Cables shall be supplied by Electrical Contractor

18.2 Cable Specifications:

All cables shall be as per latest IS 1554 Part I PVC insulated heavy duty electric cables Part I for working Voltages up to and including 1100 V.

All power cables shall be PVC insulated, armored, inner sheathed, PVC insulated aluminum conductor. Control cables shall be of copper conductor.

The core insulation and inner sheath shall confirm to the requirement of Type A IS 5831 STI IS respectively. Similarly, for outer sheath. Cables shall have armor of steel wire up to 0 D of 18 mm and flat steel strip for higher OD.

Cables shall be supplied in drums of 1000 mts. for and up to 6 sq mm and 10 sqmm and above in 500 mts.

18.3 Cabling:

Cabling shall be done with help of jack and rollers. Cable shall be passed through RCC Hume Pipe wherever road crossing or pathway crossing is there. All cables shall rise form cable trenches in GI Pipes. Cable shall be tagged as per cable schedule at every 30 mts. by Aluminum tags of minimum 2mm thick securely fastened. They shall also be identified near the terminations

Above the cable trenches cable route markers shall be installed as per rules and regulations at every 30 mts and at every turnings of the cables or branching of cables

All cables shall be laid in trenches at a depth of 750mm and as shown in drawings. Before laying of cables sand shall be spread then the cable shall be laid which shall again be covered with sand minimum 150mm from the top of the largest dia of the cable. Then second class bricks shall be laid across the trench completely covering the trench, lastly excavated soil shall be back filled and compacted by watering intermittently

All cables after laid shall be checked for insulation level and meggered before back filling. Cable entries in GI pipes or Hume pipes shall be sealed by cable compound or putty for smaller dia of pipes.

If required for the- cable- to run on cable trays then the cable shall be clamped by 16 SWG GI saddles and damps all works should be done to the satisfaction of the Engg - in Charge.

18.4 Terminations:

Cable shall be terminated by means of single compression glands and terminated by solderless crimped type lugs. All should be done to the satisfaction of the Engg.-in-Charge. If the cores do not have any color identification, then they should be identified by insulation tape of various phases. Cable shall enter any termination point by means of double compression glands, using reducers if required or drill of holes in gland plates. IF panel installed on a cable trench which does not have any bottom excess then holes shall be drilled in one line for the cables then the gland plates is cut into two halves from the centre of the hole. Cables inserted and sealed and the armour in the bottom should open and earthed to the earth bus. Crimping of lugs shall be done by hand crimping tool or hydraulic crimping tool with conducting jelly applied to conductors. Insulation shall be cut immediately after the lugs and care should be taken that the conductor is not left open. All jointing and crimping shall be carried out by licensed and experienced jointers approved E.I.C. and termination and straight joint shall be of 'Taped' or heat shrinkable type as specified.

18.5 Testing:

Before energizing, the megger test shall be carried out for insulation resistance between phase to phase and phase to earth.

For cable up to 1.1 KV grade 1000 KV mugger shall be used.

D.C. High Voltage test shall be conducted after installation on the following and test results are recorded as per format furnished by the Engineer-in-charge.

a) All 1000 Volts grade cables in which straight through joints have been made.

b) All cables above 1100 V grade.

For record purposes test data shall include the measure values of leakage current verses time.

The DC High voltage test shall be performed as detailed below in the presence of the EIC or his authorized representative only.

Cables shall be installed in final position with the entire straight through joints complete. Termination shall be kept on unfinished so that the motors, switchgears, t transformers, etc.. Are not subjected to test Voltages

The Test Voltage shall be as under:

i) For cable 3.3 KV Grade 5.4 KV DC

ii) For cable 66 KV Grade 10.8 KV DC

iii) For cable 11 KV Grade 18 KV DC

Cable schedule and layout drawings must be marked for AS BUILT conditions during the installations work and shall be approved by the Site Engg.

IDENTIFICATION OF EARTHED AND EARTHED NEUTRAL CONDUCTORS AND POSITION OF SWITCHES AND CUTOUTS THEREIN:

Where the conductors include an earthed conductor of two-wire system or an earthed neutral conductor of a multi-wire system or a conductor which is to be connected thereto, the following conditions shall be compiled with

1. An indication of a permanent nature shall be provided by the owner of the earthed or earthed neutral conductor, or the conductor which is to be connected thereto, to enable such conductor to be distinguished from any live conductor. Such indication shall be provided.

a) Where the earthed or earthed neutral conductor is the property of the bidder, at or near the point of commencement of the supply.

b) Where a conductor forming part of a consumer's system is to be connected to the bidder's earthed or earthed neutral conductor, at the point where such connection is to be made.

c) In all other cases, at a point corresponding to the point of commencement of supply or at such other point as may be approved by an inspector.

2. No cut-out, link or switch other than a linked-switch arranged to operate simultaneously on the earthed or earthed neutral conductor and live conductor shall be inserted or remain inserted in any earthed or earthed neutral conductor of a two-wire system or in any earthed or earthed neutral conductor of a multi-wire system or in any conductor connected thereto with the following exceptions

a) A link for testing purposes - OR -

b) A switch for use in controlling a generator or transformer.

NOTE: The Electrical Contractor Shall Produce Copy of Valid License for Practicing Issued by Statutory Authority for This Purpose Before Commencing the Work.

INSTALLATION TESTS CERTIFICATE
BY ELECTRICAL CONTRACTOR

This contractor is to certify that the work is carried Out
Work confirming to IE Rules and code of practice. He has to
Give the test report is under.

(i) Insulation Resistance test is R - N M. Ohms
Y - N M. Ohms
B - N N. Ohms

(ii) Load test: -

5A - 1000 W Power Point - 15 Minutes

15A - 3000 W Power Point - 15 Minutes

(iii) Earth resistance for each electrode - 1 Ohm
- 2 Ohm
- 3 Ohm
- 4 - N - E
Volts

(iv) Certificate of makes of materials used in the work

(v) Circuit diagram

(vi) Certified that the electrification work has been carried out under the supervision of licensed Electrical supervision.

(vii) Certified that the earthing plate / pipe has been verified and Placed at correct depth confirming to IE Rules.

Signature of Electrical Supervision Signature of Contractor

Name:

License No.

IMPORTANT POINTS TO BE NOTED

1) Rates for LIGHT, FAN, EX. FAN, CALL BELL, RAW POWER ETC. POINTS include the cost of main wires and PVC pipes from LDB-ROW POWER DB to DIFFERENT SWITCHBOARDS WITH REQUIRE CIRCUITS

2) Rates for COMPUTER POWER POINTS include the cost of wires and PVC pipes from UPS DB to COMPUTER POWER POINTS.

3) Rates for COMPUTER I/O include the cost of DATA cables and PVC pipes from SERVER SWITCH to COMPUTER NODES.

4) Rates for TELE POINTS include the cost of TELEPHONE Wires and PVC pipes from EPABX/CRONE BOX to TELE. POINTS.

5) Rates for SMOKE/HEAT DETECTORS includes the cost of wires and PVC pipes

6) Rates for A.C./POWER POINTS include the cost of wires and PVC pipes from A.C. DB to DIFFERENT A.C. AND POWER POINTS WITH REQUIRE CIRCUITS.

7) THE CONTRACTOR SHOULD SUBMIT THE BUILTUP SLD OF PANEL, SLD OF DIFFERENT DBS TO DIFFERENT SWITCHBOARDS WITH NUMBERING, SLD OF DATARACK TO DIFFERENT I/O POINTS WITH NUMBERING, TELE. KRONE BOX TO DIFFERENT TELE. POINTS WITH NUMBERING, ETC. AFTER EXECUTION OF THE BRANCH.

8) THE CONTRACTOR SHOULD USE MAX. 3 CIRCUITS IN ONE CONDUIT FOR UPS & RAW POWER POINTS.

9) THE CONTRACTOR SHOULD USE MAX. 3 WIRES OF DATA & TELE. IN ONE CONDUIT.

10) EVERY CONDUIT – UPS, RAW POWER, DATA & TELE. SHOULD BE SEPARATE.

11) ELECTRICAL WORK SHALL BE CARRIED OUT LICENSED ELECTRICIAN AND LICENSED CONTRACTOR. WORK SHALL BE CARRIED OUT AS PER I.E RULES, IS CODE. CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY FIRE/ SHORT CIRCUIT IN THE WORK EXECUTED.

LIST OF APPROVED MAKES FOR ELECTRICAL & ELECTRICAL WORKS		
MAKE / SPECIFICATION DETAIL		
SR.NO.	**LIST OF NOMINATED MATERIALS& SUPPLIERS**	**SUGGESTED MAKE LIST**
1	Electrical	
	Light Fittings	Philips / Wipro / Osram / Havells / Crompton G.
	MCCB, MCB , RCCB, DB, ICTPN TP, HRC Fuse, change over switch, switchfuse Unit	L&T, ABB, Legrand, Siemens, Schneider
	FRLS insulated Elec. Wire/ cable armored, unarmored, Sheathed, unsheathed, flexible LT cable, Multi core, single core cable, flat cable	Finolex/Polycab/Havells/RR kabel/KEI
	PVC conduit (HEAVY DUTY ONLY)	CAP/Finolex/Polycab
	PVC insulated copper conductor Wires	Finolex/ Polycab/RR Cable
	Distribution Box	Legrand/ Schneider/ ABB/Siemens
	MCB & MCCB	Legrand/ Schneider/ ABB/Siemens/L&T
	Light Fixture & Lamps	Philips/ Wipro Osram / Havells / Crompton G./ Halo nix
	HT cable	Polycab/Havells
	Modular Switches	ABB/ Legrand/ MK/ANCHOR/ELLEYS/ROMA
	DLP Trunking	Legrand/Schneider or equivalent
	Power cable	CCI/ Sky tone/ Universal/ LAPP/ Torrent
	End Termination	Raychem/ Mahindra/ELMEX
	PANEL	Crompton/L&T/C&S
	Fan	Crompton/Havells/Bajaj/Usha
	Raceway & Alu. Trunking	Tata/Jindal/Zenith
	Casing Capping	Finolex/Cap or equivalent
	Weather proof socket outlet with MCB	ABB/MDS/LEXIC/Neptune/Elcon- Clipsal, Siemens, Schneider (Merlin Gerin)
	Miniature Circuit Breaker	ABB/MDS/LEXIC/ Clipsal/Siemens/HPL
	Earth Leakage Circuit Breaker	MDS/LEXIS/Siemens/HPL
	MCB Distribution Boards in sheet steel housing (double door)	ABB/MDS/LEXIC/Siemens/HPL
2	Distribution	
	MV Contractor/Timer/Relays/Starters	Legrand/ Schneider (MG)/ ABB/Siemens/L&T
	Molded case circuit breakers	Legrand/ Schneider (MG)/ ABB/Siemens/L&T
	SFU/Fuses	HPL/ L&T. Siemens, GE Power, Schneider (MG)
	ACB	Schneider (MG)/ ABB/Siemens/L&T
	Single Phase Preventer (Current base)	L&T, Minilec

..... Bidders Signature with Stamp and date

	Raising Mains & Tap Off (Power coated)	Zeta, C&S, Siemens
	MV Switchboards (Powder Coated)	Tricolite Electrical Industries, conlec Engineers Pvt. Ltd,Vidyut Control Pvt Ltd., Trinitron Milestone Switchgear,Unilec Ltd, Madhu Electrical Advance Electro Control Pvt Ltd.
3	Low Tension System	
	Light & Fan Wire	Polycab, Finolex, Havells
	Telephone Wires	Delton, Skyline, Finolex, Rallison, Batra Henley
	Telephone Tag Blocks	Krone / Pouyet/ TVS
4	Cables and Accessories	
	1100Volts grade Cables	CCI, Universal, Fort Gloster, Polycab, RPG (Asian), Nicco
	Cable Lugs	Dowells
	Cable compression Glands	Peeco/ Comet
	Cable Trays / Cable ladders	Slotco, Bharti, RICCO, Pilco, MM Enterprises
5	Metering & Protection	
	Cast Resin current transformers	Gilbert Maxwell, Kappa AE, Precise
	Meters (Digital)	L&T Roshab, Automatic Electric, Siemens, Socomex
	Selector switches	HPL/L&T Salzer, Kaycee
	Indication lamp	L&T Vaisno Teknic
	KWH Electronics Digital Meter	Secure, L&T, Enercon, Socomec- HPL
6	EPABX	
	Exchange/ Console Panel	Copper connection, Flash Hymax, Accord CG, Tata Telecom, Panasonic
	CVT	Logicstat, Blue Bird, Selvon, Max Power
	UPS	HPL- Socomec, Tata Liebert, APC, Invensys, Copper Connection
	Hand Set	Beetle, Tata phone, Crompton
	Tape off	Cat Vision, Shyam
7	Electrical Items	
	Panel Switch Gear & related Item	
	LT Panel/Bus Duct	By any Panel manufacturer who process C.P.R.I. certificate for specified fault level & IP level protection
	Fuse Disconnector switch/switch fuse unit	L&T, Siemens/ Schneider/ABB/Legrand
	Ammeter Voltmeter	AE/L&T/MECO/Rishabh
	Digital Meters/ Intelligent Multifunctional Digital mater	AE/HPL/CONZERV

	Selector Switch, Push button switch / emergency switch	KAY CEE/ L&T/ Siemens/ Schneider
	Indication Lamp	AE/L&T/Siemens/ Schneider
	CT's	L&T / AE/ Kappa
	AT's	L&T/Siemens/ Schneider/ Legrand
	Voltage stabilizer for air conditioner (4/5KVA)(170-270V)	V Guard/Microtek
	Air Conditioner - Split Inverter AC(5/3 star) - (.75 ton - 1ton,1.5 ton,1.8ton-2ton)	Daikin/Blue Star/ Carrier
	Air Conditioner - Cassette Inverter AC (5/4/3 star) - (2.9 ton - 3.5 Ton)	Daikin/Blue Star/ Carrier
8	Transformer	
	Distribution Transformer	Jindal /Areva/ Muskaan/Alstom
	11 or 33 KV VCB	Crompton/ Alstom/ ABB
	HT Termination & Jointing kit	Ray Chaem / Mahindra/ ELMEX
	Cable Glands	Dowell's / Siemens/Braco
	Lugs & Thimbles	Dowell's / Johnson
	Up to & including 11KV cables (ISI marks)	CCI/ Skytone/ Gloster/ Havells
	Insulating Mats	ISI Marked
	Capacitor Bank (ISI marked)	GE Power/ BHEL/EPCOS/ L&T
	Lightning Arrestor	Altas/ Alstom/ GE power
	Protection & Another Relay	ABB/ Siemens/ Schneider/ L&T/ Allen Bradley
9	Internal Wiring Related Works	
	MCB/RCCS/Isolators (ISI) marked MCB DB	L&T Siemens/ Schneider/ Legrand
	PVC Conduit	CAP / BEC/ Seiko/ AKG
	PVC insulated copper wire (ISI marked)	Skyline/ Finolex/ Havells/ Polycab
	Telephone Cable	Sky tone/ Delton/ NICCO/Polycab/ Finolex
	Switch, TV & Telephone socket & boxes (Modular Type)	CPL/ Legrand/ABB/Anchor
10	Miscellaneous Items	
	Lightning Protection Unit	Erico/ Phoenix/ INDELEC
	Relays	L&T/ABB/Siemens/BCH
	Contractors	L&T/ GE Power/BCH/ Siemens/ABB
	Changeover switch	C&S/Havells/ L&T/HPL
	KWH, PF, Frequency meter	BHEL/ AE/Havells/ L&T/ALSTOM
	Push Buttons	L&T/ Siemens
	Timers	L&T/ Legrand/ Schneider/Siemens/GE

..... Bidders Signature with Stamp and date

	Timer Switch	L&T/ Legrand/ Schneider/Siemens/GE
11	Networking	
	Switches	Brocade/Cisco/Digi-Link/3Com/Nortel/Foundry/D-Link
	Patch Panel, Patch cord and I/o	Digi-Link / Tyco(AMP) /Schneider/D-Link
	Cable	Digilink/Clipser/National/Polycab/Lapp/Finolex
	Racks	ComRack / HCL / ValRack / APW President
	Light fittings	
	WIPRO MAKE – Immaculate series - 600 mm x 600 mm – 36 W - CRCO10R036HP57. (or equivalent make)	
	WIPRO MAKE – Halo make – 6W - CRDL11R008HP57. (or equivalent make)	
	WIPRO MAKE – Halo make – 22W - CRDL11R023HP57. (or equivalent make)	
	PHILIPS MAKE – Smart Glow – 600 mm x 600 mm - 37W. (or equivalent make)	
	PHILIPS MAKE – Green Led – 7W and 12 W (or equivalent make)	
	PHILIPS MAKE – Line Light– 28 W. (or equivalent make)	

Note:

[a] Where other Material are proposed to be used these should be got approved from the Architect/Bank's Engineer before execution of particular item. In case of Non- Availability of any material of specified make, the Alternative equivalent make should be used only after it is approved in writing by the Employer or the Architect. The Material shall be used in preferential Order only.

[b] Before starting of work, contractor must get all samples/make approved from Architect/Bank's authorities before using at site.

[c] Consultants/Bank's authorities reserve the right to add or delete name of any manufacturers and when required.

[d] Consultants/Bank's authorities reserve rights to select any of the specified brands mentioned above.

LIST OF INDIAN STANDARDS REFEREED TO

SR. NO.	IS NO.		DESCRIPTION
1)	IS:2026-1977	:	Distribution transformers & fittings.
	IS:3639	:	Fittings and acc. For P.T
2)	IS:7886	:	
	IS:660	:	Installation of Transformer
3)	IS:2516-1972	:	Specification for A.C circuit breakers
4)	IS:335	:	Insulating oil for Transformers & switch gear.
5)	IS:2505	:	CT for measuring and protection.
6)	IS:3155	:	Voltage Transformer.
7)	IS:3236 Part II	:	Voltage Transformer.
8)	IS:373	:	Busbar arrangement and marking.
9)	IS:2099	:	Bushing
10)	IS:5621	:	Large Hollow Porcelains
11)	IS:2544	:	Insulators
12)	IS:2629 & 2633	:	Hot Dip Galvanizing
13)	IS:3842	:	Relays
14)	IS:1248:-1958	:	Meters (measuring).
15)	IS:3072-1975	:	Installation of Switch gears.
16)	IS:692	:	HV cable
17)	IS:1255	:	Installation of HV cable and jointing
18)	IS:3043	:	Code of practice for earthing
19)	IS:4047-1977	:	HD Air breaker, Switch gears and fuses for Voltage not exceeding 1000 Volts.
20)	IS:8106-1966	:	Selection, installation and maintenance of fuses up to 650 Volts.
21)	IS:4237:1967	:	General requirements for switch gear and control gear for voltage not exceeding 1000 Volts
22)	IS:2607:1976	:	Air-break isolators for Voltage not exceeding 1000 Volts.
23)	IS:8623-1977	:	Factory built assemblies of switch gear and control gear for voltage up to and including 1000 Volts A.C and 1200 Volts D.C
24)	IS:375-1963	:	Marking and arrangement of switch gear busbars main connectors and auxiliary wiring.
25)	IS:2147-1962	:	Cubical Boards
26)	IS:8084-1972	:	Insulated conductor rating.
27)	IS:2675-1983	:	Enclosed distribution fuse boards and cutouts for Voltage not exceeding 1000 Volts.
28)	IS:8828-1978	:	Miniature Circuit Breaker.
29)	IS:9926-1981	:	Fuse wire used in re-wearable type electric fuses up to 650 Volts.
30)	IS:1554 (Part I)	:	PVC insulated electric cables Heavy duty.
31)	IS:3961 (Part II)	:	Recommended current rating for cables.
32)	IS:2982	:	Copper conductor in insulated cables and cores.
33)	IS:8130	:	Conductor for insulated electric cables and flexible cords.
34)	IS:3975	:	Mild steel wires, strip and tapes for armoring cables.
35)	IS:5831	:	PVC insulation and sheath of electric cables.
36)	IS:1753	:	Aluminum conductor for insulated cables.
37)	IS:4288	:	PVC insulated and PVC sheathed solid aluminum conductor cables of voltage rating not exceeding 1100 volts.
38)	IS:961	:	Recommended current rating for Cable.
39)	S:732	:	Code of practice for electrical wiring installation system

			Voltage not exceeding 650 Volts.
40)	IS:1646	:	Code of practice for fire safety of Buildings (general) electrical installation.
41)	IS:1953	:	Rigid steel conduits for electrical wiring.
42)	IS:2667	:	Fittings for rigid steel conduits for electrical wiring.
43)	IS:3480	:	Flexible steel conduit for electrical wiring.
44)	IS:3837	:	Accessories for rigid steel conduits for electrical wiring.
45)	IS:694	:	PVC insulated cables (wires).
46)	IS:2509	:	Rigid non-metallic conduits for electrical wiring.
47)	IS:6946	:	Flexible (playable) nonmetallic conduits for electrical installation.
48)	IS:1293	:	Three pin plugs and sockets.
49)	IS:8180	:	Conductors for insulated electrical cables and flexible codes.
50)	IS:9537-1980	:	Specification for conduit for electrical installation.
51)	IS:3419	:	Accessories for non-metallic conduits for electrical wiring.
52)	IS:3854	:	Switches.
53)	IS:6538	:	Plugs.
54)	IS:2834-1954	:	Shunt Capacitors for power systems.
55)	IS:2208	:	HRC cartridge fuse and links up to 660 volts.
56)	IS:1913-1969	:	General and safety requirement for lighting fittings.
57)	IS:2944-1981	:	Code of practice for lighting public thorough fares.
58)	IS:3528	:	Waterproof electric lighting fittings.
59)	IS:3553-1966	:	Water tight electric lighting fitting.
60)	IS:1239-1958	:	Mild Steel tubular and other wrought steel pipe fitting.
63)	IS:2149-1970	:	Luminaries for street light.
64)	IS:9224	:	HRC fuses having rupturing capacity of 90 KA
65)	IS:2312-1967	:	Exhaust Fan.
66)	IS:374-1979	:	Class I Ceiling Fan.

NOTE: All codes and standards mean the latest where not specified otherwise the installation shall generally follow the Indian Standard codes of practice of relevant British Standard Codes of Practice in the absence of corresponding Indian Standards.

PLEASE FOLLOW:

a. Indian Electricity Act of 1910 and rules issued there under revised up to date.
b. Special Attention should be given to Rule No. 50.
c. Regulations for electrical equipment in building issued by The Bombay Regional Council of insurance Association of India

II – ACCOUNT OF SECURED ADVANCE, IF ADMISSIBLE ON MATERIALS HELD AT SITE BYTHE CONTRACTOR

No.	Item	Quantity	Unit	Amount	Remarks
1	2	3	4	5	6

Total Value of materials at site

Secured Advance @ .....% of above value

Certified (i) that the materials mentioned above have actually been brought by the contractor to thesite of the work and no advance on any quantity of any of this item is outstanding on their security,
(ii) that the materials are of imperishable nature and are all required by the contractor for use in the work in connection with the items for which rates of finished work have been agreed upon.

Dated signature of Project Architect preparing the billDesignation

Signature of the Contractor----------

III. C E R T I F I C A T E

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 Project Architect

The work recorded in the above-m e n t i o n e d measurements has been done at the site satisfactorily as per tender drawings, conditions and specifications.

_____

Project Architect

Proforma for "Memorandum for Payment" IV

RUNNING BILL NO. _____

1. Total amount due since previous bill (D) (A+B) Rs._____
2. ~~PVA on account of escalation in price of steel, cement and other materials and labour as detailed in separate statement enclosed : Rs._____~~
3. Deductions :

i) Secured Advance paid in the previous R.A. Bill Rs._____

ii) Retention money on value of works as per accepted tenders : up to date amount Rs. _____

Less : Already recovered (-) Rs. _____

Balance to be recovered Rs._____(-) Rs _____

iii) Mobilization advance, if any

a) Outstanding amount (Principal + Interest) as on date Rs. _____

b) To be recovered in this bill Rs.

iv) Any other departmental material cost to be recovered as per contract, if anyRs. _____

v) Any other departmental service charges to be recovered if any, as per contract (water, poweretc)

Enclose statement Rs. _____

Total deduction as per contractor Rs._____(-) Rs._____

Net amount payable as per Contract (E-F) Rs._____Rs._____

(G)

(Rupees .....) in words

The bill amounting to .....(both figures and words) has been scrutinized by me after due check of the measurement of works as required and is recommended for payment.

Signature of Project Architect with seal Date:

The Project Architect's certification amounting to ..... (both figures and words) has been scrutinized by me and after due test check of the measurement of works as requiredis recommended for payment amounting to.....(both figures and words)

Signature of Project Architect's Date:

STATUTORY DEDUCTIONS:

1. Total amount due (E) Rs. _____
2. Less : Income Tax Payable Rs._____ Net Payable Rs. _

The figure given in the Memorandum for Payment has been verified and the bill passed for paymentRs ..... (Words and figures)

Date : Signature of the RM

..... *Bidders Signature with Stamp and date*

Proforma V of Certificate of Payment by Bank

Certificate No. Interim/	Dated	
Client:	Project No.	Building Work/Interior Work
	Particulars:	
Contractor:	Contract/Letter NO.	Dated:
	Contractor's Bill No.	Dated:

This is to certify that the amount given below (*) is due to the Contractors for the work done by them and/or against materials delivered at site and/or for advance towards contact on the above referred project.

Advance against contract	Rs.	
Less: Advance adjusted to-date	Rs.	
Balance Advance	Rs.	
Advance against material delivered at site	Rs.	
Amount of work done to-date	Rs.	
Total	Rs.	
Less: Retention on work done	Rs.	
Less: Previously certified up to	Rs.	
PRESENT CERTIFICATE (*)	Rs.	

RUPEES … …….

The cost of cement or any other material supplied or payments made by BOB directly, if any and notcovered herein above, should be adjusted before making the payment of the certified amount (*)

Necessary Deduction U/S 194C of the Income Tax 1961 and sales tax may be made before paying the above certified amount.

By a copy of this letter, we are intimating the Contractors to call on you for the necessary payment.

Remarks, if any:

The details of Insurance Policy are given in the next page.

Signature of Project Architect _____

Enclosures: Bill

Client's Copy

VI - DETAILS OF INSURANCE POLICIES

Type of policies	Name of Insurance	Amount Rs.	Policy No.	Validity
CAR Policy including 3rd Party liability Workmen's Compensation		The Insurance shall be for an amount equal to 110% of the contract value.		Till Site handingover to bank
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.

Project Architect

PROFORMA OF HINDRANCE REGISTER

Name of Work : Date of start of work :

Name of Contractor : Period of completion :

Agreement No. : Date of completion :

Sr.No.	Nature of hindrance	Date of occurrence of hindrance	Date of which hindrance was removed	Period of hindrance	Signature SE/PE	Remarks
1	2	3	4	5	6	7

Project Architect

SAFETY CODE

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 case where 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 rungs shall not be more than 30 cm. When a ladder is used an extra mazdoor shall engaged for holding ladder.
5. The excavated material shall not be placed within 1.5 meters of the edge of the trench of the half of the depth of trench whichever is more. All trenches and excavation shall be provided with necessary fencing and lighting.
6. NO floor, roof or other part of the structure shall be so overloaded with debris or materials as to render it unsafe.
7. Workers employed on mixing and handling material such as asphalt, cement mortar of concrete and lime mortar shall be provided with protective footwear and rubber hand-glove.
8. Those engaged in welding works shall be provided with welder's protective eye shield and gloves.
9. i) No paint containing lead or lead products shall be used except in the form of paste and readymade paint.

   ii) Suitable facemasks should be supplied for use by the workers when the paints applied in the form of spray or surface having lead paint dry rubbed and scrapped.
10. Overalls shall be supplied by the Contractor to the painters and adequate facilities shall provide to enable the working painters to wash during the periods of cessation of work.

PROFORMA 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

	Dated	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 previousapplications should be attached)

10. Period for which extension is applied for and the reasons thereof including hindrances, timefor extra work assigned, if any etc.

Signature of Contractor

BIDDER'S PROFILE:

All the supporting Documents are required to be submitted with tenders. Details filled in this form must be accompanied by sufficient documentary evidence, in order to verify the correctness of the information. All the documents should be attested by the bidder.

SR. NO.	DESCRIPTION	BIDDERS PARTICULARS
C.1	Name of the Bidder/Firm	
C.2	Permanent Account Number	
C.3	GST No.	
C.4	Registered Office address along with Pin code	
C.5	Email Address	
C.6	Phone/Mobile nos.	
C.7	Name of Director/Partner/Proprietor	
C.8	Name of the person who have power of attorney or Authorized Signatory	

..... *Bidders Signature with Stamp and date*

MANDATORY INFORMATION REQUIRED FOR PREQUALIFICATION OF THE BIDDER FOR CIVIL WORKS FOR BHADRA BRANCH, AHMEDABAD.

IMPORTANT:
1. Please type or handwrite in capital letters.
2. Attach copies of the supporting documents.
3. Please use additional sheets if required.

1.	Name of the Bidder/Firm:	
2.	Email address:	
3.	Telephone number office:	
4.	Telephone number office:	
5.	Fax no.:	
6.	Address 1:	
7.	Address 2:	
8.	City:	
9.	Pin code:	
10.	Year of Establishment (Submit Valid Proof):	
11.	Status of the Firm:	Proprietary / Partnership / Pvt. Ltd. / Pub. Ltd.
12.	Names of the directors/Partners/proprietor:	
13.	Name and address of the Bankers – 1:	
14.	Name and address of the Bankers – 2:	
15.	Registration number and date with Registrar of Companies/Firms:	
16.	PAN Card Number:	
17.	GST Number (Firm should be registered in "work contract"):	
18.	Request copies of the Balance sheet of last 3 years: **CA Certificate of Amounting Rs. 50.0 Lacs (Average Turnover of last 3 years should be attached)**	
19.	Current Year solvency certificate from your Banker **(Not less than 13.50 Lakh) (Dated 2024-2025)**	
20.	Empanelment with the other PSU Bank / Government Organizations preferably in Gujarat State	
21.	Field of activities:	
22.	Main Activity:	
23.	Value of the total Civil & Electrical work done in last 3 years (Submit work order) :	

..... *Bidders Signature with Stamp and date*

24.	List particulars of minimum 1 successfully completed works during last 7 year's amounting to **Rs. 21.50 lakh** or more:	
25.	List Number of Technical staffs working in the organization:	
26.	List number of other staffs working in the organization:	
27.	Have you in past carried out any works for **Bank of Baroda** or its subsidiaries?	
28.	Have you been ever disqualified or levied penalty by the **Bank** in past for non-fulfillment of the contractual obligations? If yes, please provide details in brief:	
29.	Have you been ever been put on a holiday list or banned by any Public Sector Units? If yes please provide details in brief:	

IMPORTANT NOTES:

(1) All tenders must be submitted with last three years income tax returns or audited balance sheet with CA Certificate of Average Turnover for Last 3 years (Not less than **50.0 lakh**).

(2) All tenders must have adequate work orders or completion certificates to qualify technically. In last Seven Years, Contractor should have completed:

ONE SIMILAR WORKS OF RS. 21.52 LAKHS: (Mention Detail):

TWO SIMILAR WORKS OF RS. 13.50 LAKHS: (Mention Detail):

THREE SIMILAR WORKS OF RS. 10.76 LAKHS: (Mention Detail):

For BANKS / PSUS / FIS enclose certificate from employers. (In last 3 year). Copy of work order and completion certificate of bank is mandatory. Without work order and completion certificate applicant will be disqualified.

(3) In case tenderer is below certain % of bank's architect's estimate, separate bond from tenderer will be required for the quality of work/workmanship as per drgs. & specifications.

(4) Contractor shall submit prequalification documents in the same sequence as in technical bid. If details are not provided in the same sequence tender may be disqualified.

(5) Price bid shall not be modified or altered and shall be hand written with signature and seal (if bid is altered the tender may be disqualified).

Please Note: Bank has a right to prequalify/disqualify any application without giving any reason to any applicants.

I/We confirm that to the best of our knowledge this information is authentic and accept that any deliberate concealment will amount to disqualification at any stage.

SEAL AND SIGNATURE OF THE BIDDER/S.
DATE:
ADDRESS:

NO. OF ENCLOSURES: ……

…… *Bidders Signature with Stamp and date*

ANNEXURE – 1

List of Projects Executed by the Organisation during the Last -07- Years ending on 31.03.2024 and Projects Not Less Than Value of Rs. 10.76 Lakhs (Minimum 3 Nos.)

Sl. No.	Name of work/ project with Address.	Name & full postal address of the owner Specify	Contract Amount (Rs.)	Stipulated time of completion (months)	Actual time of completion (months)	Any other relevant information Actual Amount of the Project. if Increased, give reasons.	Enclose client's certificate for satisfactory completion

Notes:

1. Information has to be filled up specifically in this format. Please do not write remark "As indicated in Brochure".
2. Date shall be reckoned from the date of advertisement of the notice.
3. For certificates, the issuing authority shall not be less than an Executive In charge.

Sign and Seal

Date:

ANNEXURE – 2

(WORK ON HAND)

Sl. No.	Name of work/ project with Address.	Name& full postal address of the owner Specify whether Govt. under tanking along with name, address and contact nos. of -2- persons (Executive Engineers or top officials of the organization)	Contract Amount (Rs.) with copy of Work Order	Stipulated time of completion (months)	Present Status of the Project	Any other relevant information Actual Amount of the Project. if Increased, give reasons.

Notes:

1. Information has to be filled up specifically in this format. Please do not write remark "As indicated in Brochure".

Sign and Seal

Date:

..... *Bidders Signature with Stamp and date*

ANNEXURE – 3

PROFORMA OF HINDRANCE REGISTER

Name of the work: Date of state of work:
Name of Contractor: Period of Completion:
Agreement No. : Date of completion

Sr. No	Nature of Hindrance	Date of occurrence of hindrance	Date of which hindrance was removed	Period of hindrance	Signature Of Architect	Remarks

Consultant/ Architect

Sign and Seal

Date:

ANNEXURE – 4

(To be submitted on Bidder Letterhead)

FORM OF GUARANTEE FOR WATER PROOFING / EXTERNAL PAINTING

Name of the Project:

Free Maintenance Guarantee- Waterproofing / External Painting work

By _____

We hereby guarantee that the surfaces treated by us for waterproofing / External building & compound Wall Painting work in the above work for M/s._____ the general building Contractor for the Above work, shall remain water tight, should however due to any unforeseen defect left out in the work Carried out by us at the time of execution of the work, there be any leakage from any surface treated by us during the period of ten years from the date of virtual Completion of the work i.e. from _____to _____ the same shall be rectified by us without any extra cost to the _____(Name & Address of the Bank).

However, we shall not be responsible in any way if our work is tampered with or if the body of the Structure is damaged due to sinking, cracking and or by any other act of god beyond our control.

Signature of Contractor

Date:

CHECKLIST FOR SUBMISSION OF TENDER

PARTICULARS	SUBMITTED (√)	NOT SUBMITTED (√)
TENDER DOCUMENTS SEALED AND SIGNED		
AVERAGE ANNUAL TURNOVER		
CERTIFICATE OF FINANCIAL TURN OVER (C.A. Certified)		
CERTIFIED COPIES OF WORK ORDER, WORK COMPLETION CERTIFICATE & PERFORMANCE CERTIFICATES FROM THE RESPECTIVE PREVIOUS EMPLOYERS		
SOLVENCY CERTIFICATE		
EMD		
ANNEXURE – 1, 2, 3 & 4		

Sign and Seal

Date:

END OF TECHNICAL BID

----------XXXX---------- XXXX---------- XXXX---------- XXXX---------- XXXX---------- XXXX----------

..... Bidders Signature with Stamp and date