

PART - A (TECHNICAL BID)

TENDER DOCUMENTS

FOR

E-tender with reverse auction for “Civil Works for installation of Lift at Bank’s Flat, East of Kailash Colony, New Delhi”

TENDER ID	DEL20241003
START DATE	16-10-2024
LAST DATE	29-10-2024 ; 3:00 P.M
OPENING DATE	29-10-2024 ; 3:30 P.M

ARCHITECT : M/s. Vipin Gupta and Associates
B-6, Bhanot Apartments,
5, Local Shopping Centre
New Delhi - 110062

CLIENT : Assistant General Manager (P&E)
State Bank of India, Local Head office
Premises & Estate Department, 5th Floor
D-Block, 11, Parliament Street
New Delhi - 110001

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Tender documents are in two parts (Volumes) i.e. Part - A and Part - B

PART - A (TECHNICAL BID)

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NOTICE INVITING TENDER (NIT)

State Bank of India invites e-tender with reverse auction on item rate basis from the Bank's Empanelled Contractors of Delhi Circle for "Civil Construction Works Category, CE (15-25 lacs) and above" for "Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi"

Details of tenders are as under:

1.	Name of Work	: Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi
2.	Time allowed for completion	: 60 Days from date of placing Letter / mail of Acceptance.
3.	Estimated Amount	: Rs. 19,96,430/- (Rupees Nineteen Lacs Ninety Six Thousand Four Hundred and Thirty Only)
4.	Earnest Money Deposit (EMD)	: Rs. 20,000/- (Rupees Twenty Thousand only) through ONLINE mode i.e. Debit Card/Credit Card/Net Banking/NEFT/RTGS paid through the portal of e-tendering.
5.	Initial Security Deposit (ISD)	: The successful vendor whose tender is accepted by the Bank shall be bound to deposit a sum equivalent 2% of the total value of the contract.
6.	Total Security Deposit	: 5 % of Total Contract Value
7.	Last date and time of Submission of Tenders	: 29-10-2024 upto 3:00 PM
8.	Address at which the Tenders are to be submitted	: <u>Technical Bid</u> : Scan copy of Duly Signed & Stamped UNDERTAKING (Annexure-A) to be submitted / uploaded online <u>Price Bid</u> : Duly filled Price Bid to be uploaded Online Website : www.tenderwizard.com
9.	Date and time of opening of Tenders	: 29-10-2024 upto 3:30 PM
10.	Place of opening Tenders	: Assistant General Manager (P&E), State Bank of India, Local Head office Premises & Estate Department, 5th Floor, D-Block, 11, Parliament Street New Delhi - 110001

11.	Place of opening Tenders	:	Assistant General Manager (P&E), State Bank of India, Local Head office Premises & Estate Department, 5th Floor, D-Block, 11, Parliament Street New Delhi - 110001
12.	Defects Liability Period	:	12 months from the date of handing over of the project to the satisfaction of Bank.
13.	Validity of Offer	:	90 days from the date of opening the Tenders.
14.	Liquidated Damages	:	At the rate of 0.5% of the Contract Value per week which subject to a maximum of 5% of the accepted Contract Value.
15.	Rates	:	This is an Item Rate Tender. Rates quoted by the bidder shall be including all labour, Materials, Royalties, Octroi, taxes etc except GST which shall be paid extra at the rate & as per Govt / Statutory guidelines / Rules
16.	Note	:	If the vendor is found to have delayed the running/in hand project beyond the prescribed time limit specified in related tender document, the vendor will not be issued the new tender until completion of the previous delayed work.
17.	Additional Performance Deposit (ASD) / Additional Performance Guarantee (APG)	:	<ul style="list-style-type: none"> • ASD / APG shall be deposited by the bidder whose bid is accepted only if their bid amount is 7.5% or more below to the estimated cost put to tender • The amount of such ASD / APG shall be the difference amount between 92.50% of the estimated cost and the quoted price / bid • Bank Guarantee or FDR receipt favoring SBI but drawn on any other nationalized Bank may also be accepted as ASD / APG. ASD/APG should be deposited/submitted within 7 days of date of issue of letter of Acceptance.
18.	Date and Time for E- Reverse Auction (Only for Technically Qualified Contractors)		The short listed bidders after the technical evaluation stage will participate in the reverse auction conducted by M/s. Antares Systems Limited. Date and time of reverse auction will be notified to eligible bidders by e-tender agency.

Mode of Submission of Tender:

Technical Bid (only Undertaking) and the Price Bid shall be submitted online only. First the Technical Bids (Undertaking) shall be opened and after that the Price Bids of only those bidders shall be opened who have submitted / uploaded the Technical Bid (Undertaking) and Requisite EMD. The short listed bidders after the technical evaluation stage will participate in the reverse auction conducted by M/s. Antares Systems Limited. Date and time of reverse auction will be notified to eligible bidders by e-tender agency.

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.

State Bank of India has the right to accept / reject any or all tenders without assigning any reasons.

Any corrigendum / addendum in the matter will be published only in service provider portal www.tenderwizard.com

For E-Tender related queries:

Service provider: M/s Antares Systems Limited, Registered Office at: - #24, Sudha Complex, 3rd Stage, 4th Block, Bangalore - 560079. Ph: - 080-49352000 / 40482000 Fax: - 080-49352034

Help Desk: Contact Person: Mr. Pravesh Mani Tripathi, Mobile no. - 9044314492, e-mail - praveshmani.t@antaressystems.com / Mr. Abhay Kumar Singh, Mobile no. - 9708966660, e-mail - abhaykumar@antaressystems.com / Mr. Kushal Bose, Mobile no. 07686913157, e-mail- kushal.b@antaressystems.com (On working days-9 hours-18 hours)

For any other queries, the vendors may contact: Mr. Vipin Gupta, Project Architect, M/s. Vipin Gupta & Associates, Mobile no. - 9810549923, e-mail - vipingupta_arch@rediffmail.com and /or Mr. Shakil Ahmad, Manager (Civil), Mobile no.-9650926440, e-mail- shakil.ahmad1@sbi.co.in.

Assistant General Manager (P&E)

Annexure-A
UNDERTAKING

(Scan Copy in company letter head to be uploaded after duly signing and putting seal / stamp of the Firm)

To,

Assistant General Manager (P&E),
State Bank of India, Local Head office
Premises & Estate Department, 5th Floor,
D-Block, 11, Parliament Street
New Delhi - 110001

Dear Sir,

Subject : E-tender with reverse auction for "Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi"

1. I / We refer to the tender notice (NIT) issued by you for the captioned work.
2. I undertake to submit in Hard copy the tender document along with all terms & Conditions, Specifications and subsequent annexure and Corrigendum's duly signed and stamped by authorized representative/ signatory on becoming L1. However we accept all the terms and conditions along with the specifications, Drawings, Layouts etc defined in the tender documents uploaded at site.
3. I/ We hereby offer to perform, provide, execute, complete and maintain the works in conformity with the drawings, designs, conditions of contracts, specifications, schedule of quantities relating to the works.
4. I/ We have satisfied myself/ ourselves as to the site conditions, examined the drawings and all aspects of the tender conditions, subject to above, I/ We do hereby agree, should this tender be accepted in whole or in part, to:
 - a. Abide by and fullfill all the terms and provisions of the said conditions annexed here to,
 - b. Complete the works within **the period as mentioned in NIT** as per the work programme in two or three shifts if considered necessary by the Employer / Consultants at no extra cost to the Employer.
5. I / We have deposited an **earnest money as per NIT** which will not bear any interest and is liable for forfeiture and I may not be allowed to participate in any of the tender of SBI for a period of 06 months from the date of opening of this tender
 - I. If the offer/Bid is withdrawn by us within the validity period of acceptance.

Or
 - II. If the contract agreement is not executed by us within 15 days from the date of receipt of the letter of acceptance.

Or

III. If we fail to pay the initial security deposit/ ASD/ APG as stipulated.

Or

IV. If the work is not commenced within 7 days from the date of issue of letter of Acceptance by the architect/Bank.

6. I / We understand that the Bank is not bound to accept the lowest or any tender.

(Signature of Authorized Person of the Firm)

(Seal of the Firm)

Name of the Signatory :

Date :

Place :

(On Non -Judicial Stamp paper of appropriate value)

ARTICLES OF AGREEMENT

This agreement made on the _____ day of _____ Two Thousand ____ BETWEEN State Bank of India a corporation constructed under the State Bank of India Act, 1955 and having its Local Head Office at New Delhi and many other places, (hereinafter called "the Employer") of the one part and M/s _____ through its _____ having its registered office at _____ (hereinafter called "the Contractor") of the other part.

WHEREAS the Employer is desirous of executing **Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi** to be carried out as per Schedule-I, to this agreement and has caused Drawings, Bills of Quantities and Specification describing the work to be done.

AND WHEREAS the said Drawings, the Bills of Quantities marked pages ____ to ____ (inclusive) and the Specifications as stated have been signed by or on behalf of the parties hereto:

AND WHEREAS the Contractor has agreed to execute the work upon the Conditions of Tender and the Conditions of Contract and further subject to the Special Conditions set forth in Schedule-II hereto attached (hereinafter collectively referred to as "the said Conditions") as per the said Drawings and as described in the said Specification and included in the said Bills of Quantities for the sum of Rupees _____

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the sum of Rupees _____ to be paid at the time and in the manner set forth in the said Conditions, the Contractor shall upon and subject to the said Drawings and described in the said Specification and Bills of Quantities.
2. The Employer shall pay to the Contractor the said sum of Rs. _____
_____ or such other sum as shall become payable hereunder at the times and in the manner specified hereinafter.
3. The term "The Consultant / The Architect" in the said conditions shall mean **M/s. Vipin Gupta and Associates** or in the event of their ceasing to be Consultants for the purposes of this Contract, such other persons as shall be nominated for that purpose by the Employer, not being a person to whom the contractor shall object for reasons considered to be sufficient by the Employer mentioned in the said Conditions. Provided always that no persons subsequently appointed to be Consultants under this Contract shall be entitled to disregard or overrule any decision or approval or direction

- given or expressed by the Consultants for the time being.
4. The said Conditions, Specifications and Priced Bills of Quantities shall be read and construed as forming part of this agreement, and the parties hereto shall respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their parts respectively in such Conditions, Specifications and Priced Bills of Quantities contained.
 5. This agreement is subject to jurisdiction of courts in Delhi only.
 6. **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** shall exercise powers on behalf of the said Employer for the purpose of the Contract Agreement.
 7. Whereas both the parties agree to sign the following annexure Annexed to this Agreement in token of their acceptance.
 - i) Agreement
 - ii) NIT , Instructions & General Conditions of contract
 - iii) Special & Additional Condition of Contract.
 - iv) Safety Codes
 - v) Specifications.
 - vi) Material Testing & Their Frequency
 - vii) List of Approved Makes / Brands
 - viii) Priced Bill of Quantities.
 - ix) Drawings.
 8. The Bank shall pay the contractor such sum as shall become payable hereunder at the times and in the manner specified in the said Conditions mentioned in the General Conditions of Contract.
 9. Whereas the Contractor hereby undertakes and agrees to carry out and complete the works within **60 days** from the date of handing over site or 7 days from the date of issue of letter of acceptances, whichever is later. The Contractor agrees and has deposited the sum of Rs. _____ by way of Initial Security Deposit and the sum of Rs. _____ by way of Additional Security Deposit (if applicable) for due fulfillment of this Contract for the Works. It is agreed that the Security Deposit shall be deducted from each running bills and refunded to the contractor as per clause 2 of the General Conditions of the Contract Annexed herewith.
 10. Whereas it is agreed that the earnest money as per NIT deposited by the Contractor in the form of Demand Draft along with the tender shall be forfeited in full in case the Contractor does not remit the Initial Security Deposit/ASD/APG within the stipulated period and/or fail to the start of the works by the stipulated date mentioned in the letter of Acceptance.
 11. Whereas Shri _____ is the accredited representative(s) of the Contractor who would be responsible for taking instructions from the Employer in relation to the Works. The Contractor agrees to pay Sales Tax or

any other Tax on material or finished works like Works Contract Tax, Turnover Tax etc. including Income Tax in respect of this Contract of the Works and the Employer will not entertain any claim whatsoever in this regard nor the Employer shall be responsible to pay any Tax as mentioned above. If due to non - payment of any of the aforesaid Tax or other Taxes connected with the Works, the Contractor suffers any loss or damages occurred to the Contractor and the Employer will be entitled to claim damages from the contractor for non completion of the Work within **12 calendar months** stipulated in Para 9, above.

12. Whereas the Contractor hereby declares the list of all the relative working with the Employer which is annexed herewith.

OR

Whereas the Contractor declares that none of his relative is working with the Employer.

OR

Whereas the Contractor declares that he has associated himself with the agencies of the appropriate classes of person for Sanitary and Water Supply Installation etc. or any other specialized job to complete the works.

The Plans, Drawings, Specifications, Contract Documents and the Documents above mentioned shall form basis of this Contract and the decision of **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** for the time being as mentioned in the Conditions of Contract in reference to all matters of dispute as to material, workmanship or account and as to the intended interpretation of the clauses of the Agreement or any of the document attached hereto shall be final and binding on both parties and may be made rule of the court.

13. The work comprises of the **Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi** as mentioned above and all subsidiary and other works connected therewith on the same site as may be ordered to be done from time to time by **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi**. For the time being even though such works may not have been shown on the Plans or described in the said Specifications or Schedule of Quantities of various classes of Work to be done.
14. The Employer through the **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** reserves himself the right of altering the Plans, Drawings and nature of Work of adding to or omitting any items of work or having portions of the same carried out departmentally or otherwise and such alterations or variations shall be carried out without prejudice to this Contract.
15. All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Gurugram and only the courts of Gurugram shall have jurisdiction to determine the same.

16. The several parts of this Contract have been read to us and fully understood by us. In Witness whereof the parties above named have executed these presents today and year first hereinabove written.

Signed, Sealed and Delivered by:

Authorized Representative of Contractor

**Authorized Representative
of the Bank**

SCHEDULE I

Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi all as described in Tender and Drawings inclusive hereto as Specifications.

SCHEDULE II

The following Letters / Correspondence form a part of Agreement:

- 1.
- 2.
- 3.

As witness our hands the day and year first written above,

In presence of

Signature:

Name:

Occupation:

Address:

Signature by the said Employer

Name:

Designation:

Address:

In presence of

Signature:

Name:

Occupation:

Address:

Signature by the said Contractor

Name:

Designation:

Address:

INSTRUCTIONS TO THE TENDERERS

1.0 Scope of Work

Civil Works for installation of Lift at Bank's Flat, East of Kailash Colony, New Delhi all as described in Tender and Drawings inclusive hereto as Specifications.

1.1 Site and its location:

The proposed work is to be carried out at **Bank's Flat, East of Kailash Colony, New Delhi**

2.0 Tender Documents

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

Instructions to tenderers

General Conditions of Contract

Special Condition of Contract

Additional conditions

Technical Specifications

Drawings

Price Bid

NIT

Performance Guarantee Agreement

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

- (a) Price bid
- (b) NIT, corrigenda and addenda
- (c) Additional Conditions
- (d) Technical Specifications
- (e) Drawings
- (f) Special Condition of Contract
- (g) General Condition of Contract
- (h) Instructions to Tenderers

2.3 Complete set of tender documents including relative drawings can be downloaded from e-Tendering portal of e-Tendering service provider engaged by SBI

2.4 The tender documents are not transferable.

3.0

Site Visit

3.1 The tenderer must obtain himself on his own responsibility and his own expenses all information and data which may be required for the purpose of filling this tender document and enter into a contract for the satisfactory performance of the work. The tenderer is requested to satisfy himself regarding the availability of water, power, transport and communication facilities, the character quality and quantity of the materials, labor, the law and order situations, climatic conditions, local authorities requirement, traffic regulations etc; The tenderer will be fully responsible for considering the financial effect of any or all the factors while submitting his tender.

4.0 Earnest Money

4.1 The tenderer are requested to submit the Earnest Money as mentioned in NIT

4.2 EMD in any other form other than as specified above will not be accepted. Tender not accompanied by the EMD in accordance with clause 4.1 above shall be rejected.

4.3 No interest will be paid on the EMD

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

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

5.0 Initial Security Deposit (ISD)

The successful tenderer will have to submit a sum as mentioned in NIT within a period of 15 days of acceptance of tender.

6.0 Security Deposit (TSD)

6.1 Total Security Deposit shall be as per NIT which is including ISD. Balance difference of TSD & ISD shall be deducted from the running bill of the work at the rate of 10% of the respective running account bill i.e. deduction from each running bill account will be 10% till total 3% of contract value is reached. 50% of the total security shall be paid to the contractors on the basis of architect's certifying the virtual completion. The Balance 50% would be paid to the contractors after successful completion defects liability period as specified in the contract.

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

7.0 Signing of contract documents

The successful tenderer shall be bound to implement the contract by signing agreement and conditions of contract attached herewith within 7 days from the receipt of intimation of acceptance of his tender by the Bank.

However, the written acceptance of the tender by the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered into or not.

8.0 Completion period

Time is essence of the contract. The work should be completed in all respects in accordance with the terms of contract within a period as specified in the NIT from the date of handing over of site or from the date of Letter of Acceptance whichever is later.

9.0 Validity of tender

Tenders shall remain valid and open for acceptance for a period as mentioned in the NIT (validity of Offer) from the date of opening of price bid. If the tenderer withdraws his/ her offer during the validity period or makes modifications in his/her original offer which are not acceptable to the Bank, without prejudice to any other right or remedy, the Bank shall be at liberty to forfeit the EMD.

10.0 Liquidated Damages

The liquidated damages shall be as mentioned in the NIT.

11.0 Rate and prices:

11.1 In case of item rate tender

11.1.1 The tenderers shall quote their rates for individual items both in words and figures. In case of discrepancy between the rate quoted in words and figures the unit rate quoted in words will prevail. If no rate is quoted for a particular item the contractor shall not be paid for that item when it is executed.

The amount of each item shall be calculated and the requisite total is given. In case of discrepancy between the unit rate and total amount calculated from multiplication of unit rate and the quantity, the unit rate quoted will govern and the amount will be corrected.

11.1.2 The tenderers need not quote their rates for which no quantities have been given. In case the tenderer quote their rates for such items those will be ignored and will not be considered during execution.

11.1.3 The tenderers should not change the units as specified in the tender. If any unit is changed the tenders would be evaluated as per the original unit and the contractor would be paid accordingly.

The tenderers should not change or modify or delete the description of the item. If any discrepancy is observed he should immediately bring to the knowledge of the Architect/ Bank.

11.1.4 Each page of the BOQ shall be signed by the authorized person and

cutting or overwriting shall be duly attested by him

11.1.5 Each page shall be totaled and the grand total shall be given.

11.1.6 The rate quoted shall be firm and shall include all costs, allowances, taxes, levies etc unless otherwise specified to be paid extra in these tender documents

GENERAL CONDITIONS OF CONTRACT

1.0 Definitions:

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

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

1.1.1 ‘SBI’ shall mean State Bank of India (client) a body corporate created under State Bank of India Act 1955, having its Corporate Centre at State Bank Bhavan, Madame Cama Road, Mumbai-400 021 and LHO at 11, Parliament Street, New Delhi and includes the Client’s representatives, successors and assigns.

‘Architect / consultants’ shall mean M/s. Vipin Gupta & Associates

1.1.2 ‘Site Engineer’ shall mean an Engineer appointed by the Bank as their representative to give instructions to the contractor.

1.1.3 ‘The Contractor’ shall mean the individual or firm or company whether incorporated or not, undertaking the works and shall include legal personal representative of such individual or the composing the firm or company and the permitted assignees of such individual or firm or company.

The expression ‘Works’ or ‘Work’ shall mean the permanent or temporary work described in the ‘Scope of Work’ and / or to be executed in accordance with the contract and includes materials, apparatus, equipments, temporary supports, fittings and things of all kinds to be provided, the obligations of the contractor hereunder and work to be done by the contractor under the contract.

1.1.4 ‘Engineer’ shall mean the representative of the Bank’ Engineer.

1.1.5 ‘Drawings’ shall mean the drawings prepared by the Architects and issued by the Engineer and referred to in the specifications and any modifications of such drawings as may be issued by the Engineer from time to time ‘Contract value shall mean the value of the entire work as stipulated in the letter of acceptance of tender subject to such additions thereto or deductions there from as may be made under the provision herein after contained.

- 1.1.6 'Specifications' shall mean the specifications referred to in the tender and any modifications thereof as may time to time be furnished or approved by the Architects/ consultant.
- 1.1.7 "Month" means calendar month.
- 1.1.8 'Week' means seven consecutive days.
- 1.1.9 'Day' means a calendar day beginning and ending at 00 hr and 24 hrs respectively.

CLAUSE

1.0 Total Security Deposit

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

a) Earnest Money Deposit:

The tenderer shall furnish EMD as specified in the NIT in the form of Demand draft drawn in favor of the State Bank of India on any Scheduled Bank. No tender shall be considered unless the EMD is so deposited in the required form. No interest shall be paid on this EMD. The EMD of the unsuccessful tenderer shall be refunded soon after the decision to award the contract is taken without interest. The EMD shall stand absolutely forfeited if the tenderer revoke his tender at any time during the period when he is required to keep his tender open for acceptance by the SBI or after it is accepted by the SBI the contractor fails to enter into a formal agreement or fails to pay the initial security deposit as stipulated or fails to commence the work within the stipulated time.

b) Initial Security Deposit (ISD)

The ISD shall be as per NIT and shall be deposited within 15 days from the date of acceptance of tender.

c) Retention Money:

Besides the ISD as deposited by the contractor in the above said manner the retention money shall be deducted from the running account bill at the rate of 10% of the gross value of work done by the contractor and claimed in each bill provided the total security deposit i.e. the ISD plus retention money shall both together not exceed 3% of contract value. 50% of the total security deposit shall be

refunded to the contractor without any interest on issue of Virtual Completion Certificate by the Bank' Engineer. The balance 50% of the total security deposit shall be refunded to the contractor without any interest within fifteen days after the end of defect liability period provided the contractor has satisfactorily attended to all defects in accordance with the conditions of contract including site clearance.

2.0 Language

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

3.0 Errors, omissions and discrepancies

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

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

4.0 Scope of work:

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

5.0

(I) Letter of acceptance:

Within the validity period of the tender, the Bank shall issue a letter of acceptance either directly or through the Bank' Engineer by registered post or otherwise depositing at the address of the contractor as given in the tender to enter into a Contract for the execution of the work as per the terms of the tender. The letter of acceptance shall constitute a binding contract between the SBI and the contractor.

(II) Contract Agreement:

On receipt of intimation of the acceptance of tender from the SBI/ Architect the successful tenderer shall be bound to implement the contract and within fifteen days thereof. He shall sign an agreement on a non judicial stamp paper of appropriate value.

6.0 Ownership of drawings:

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

7.0 Detailed drawings and instructions:

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

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

8.0 Copies of agreement

Two copies of agreement duly signed by both the parties (Bank & the Contractor) with the drawings shall be prepared one each for both the parties; a photo copy of such Agreement shall be kept by the Architect.

9.0 Liquidating damages:

If the contractor fails to maintain the required progress or to complete the work and clear the site including vacating their office on or before the contracted or extended date or completion without justification in support of the cause of delay, he may be called upon without prejudice to any other right of remedy available under the law to the SBI on account of such breach to pay a liquidated damages as mentioned in NIT

10.0 Materials, Appliances and employees:

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

11.0 Permits, laws and Regulations:

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

12.0 Setting out work:

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

13.0 Protection of works and property:

The contractor shall continuously maintain adequate protection, of all his work from damage and shall protect the SBI's Premises from the injury or loss arising in connection with contract. He shall make good any such damage, injury, loss, except due to causes beyond his control and not due to his fault or negligence.

He shall take adequate care and steps for protection of the adjacent Premises. The contractor shall take all precautions for safety and protections of his employees on the works and shall comply with all applicable provisions of Govt. and local body's safety laws and building codes to prevent accidents or injuries to persons or property on about or adjacent to his place of works.

14.0 Inspections ofwork:

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

15.0 Assignment and subletting:

The whole of work included in the contract shall be executed by the contractor and he shall not directly entrust and engaged or indirectly transfer, assign or underlet the contract or any part or share thereof or interest therein without the written consent of the SBI though the Architect and no undertaking shall relieve the contractor from the responsibility of the contractor form active superintendence of the work during its progress.

16.0 Quality of materials, workmanship & Test

- i) All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with the Bank's Engineer's instruction and shall be subject from time to time to such test as the Bank's Engineer may direct at the place of manufacture or fabrication or on the site or in an approved testing laboratory. The contractor shall provide such assistance, instruments, machinery, labor and materials as are normally required for examining, measuring, sampling and testing any material or part of work before incorporation in the work for testing a may be selected and required by the Bank's Engineer.

ii) Samples

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

iii) Cost of Tests

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

iv) Cost of test not provided for

If any test is ordered by the Bank's Engineer which is either

- a) If so intended by or provide for or (in the cases above mentioned) is not so particularized, or though so intended or provided for but ordered by the Bank's Engineer to be carried out by an independent person at any place other than the site of the place of manufacture or fabrication of the materials tested or any Government/ approved laboratory, then the cost of such test shall be borne by the contractor.

17.0 Obtaining information related to execution of work:

No claim by the contractor for additional payment shall be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the work or any misunderstanding or the obtaining incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfillment of contract.

18.0 Contractor's superintendence

The contractor shall give necessary personal superintendence during the execution of the works and as long, thereafter, as the Bank' Engineer may consider necessary until the expiry of the defects liability period, stated hereto.

19.0 Quantities:

- i) The bill of quantities (BOQ) unless or otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard method of Measurements and quantities. The rate quoted shall remain valid for variation of quantity against individual item to any extent subject to maximum variation of the contract value by 25%. The entire amount paid under clause 21 hereof as well as amount of prime cost and provisional sums if any shall be excluded.
- ii) **Variation exceeding 25%:** The items of work executed in relation to variation exceeding 25% shall be paid on the basis of provisions of clause 22 (e) hereof.

20.0 Works to be measured

The Bank's Engineer may from time to time intimate to the contractor that he requires the work to be measured and the contractor shall forthwith attend or send a qualified representative to assist the Architect in taking such measurements and calculations and to furnish all particulars or to give all assistance required by any of them. Such measurements shall be taken in accordance with the mode of Measurements detailed in the specifications. The representative of the Bank's Engineer shall take the joint measurements with the contractor's representative and the measurements shall be entered in the measurement book. The contractor or his authorized representative shall sign all the pages of the measurement book in which the measurements have been recorded in token of his acceptance. All the corrections shall be duly attested by both representatives. No over writings shall be made in the measurement book. Should the contractor not attend or neglect or omit to depute his representative to take measurements then the measurements recorded by the representative of the Bank's Engineer shall be final. All authorized extra work, omissions and all variations made shall be included in such measurement.

21.0 Variations

No alteration, omission or variation ordered in writing by the Bank' Engineer shall vitiate the contract. In case the SBI/ Bank's Engineer thinks proper at any time during the progress of works to make any alteration 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 Bank's Engineer shall give notice thereof in writing to the contractor or shall confirm in writing within seven days of giving such oral instructions, the contractor shall alter to, 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, specifications or contract drawings without previous consent in writing of the Bank's Engineer and the value of such extras, alternations, additions or omissions shall in all cases be determined by the Bank's Engineer and the same shall be added to or deducted from the contract value, as the case maybe.

22.0 Valuation of variations:

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

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

23.0 Final measurements:

The measurements and the valuation in respect of the contract shall be completed within one month of the virtual completion of the work.

24.0 Virtual Completion Certificate (VCC)

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

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

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

This issuance of a VCC shall be without prejudice to the SBI's rights and contractors liabilities under the contract including the contractor's liability for defect liability period nor shall the issuance of VCC in respect of the works or work at any site be construed as a waiver of any right or claim of the SBI against the contractor in respect of works or works at the site and in respect of which the VCC has been issued.

25.0 Work by other agencies:

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

26.0 Insurance of works:

26.1

Without limiting his obligations and responsibilities under the contract, the contractor shall insure in the joint names of the SBI and the contractor against all loss or damages from whatever cause arising other than the excepted risks, for which he is responsible under the terms of contract and in such a manner that the SBI and contractor are covered for the period stipulated in clause 28 and 29 of GCC and are also covered during the period of maintenance for loss or damage arising from a cause, occurring prior to the commencement of the period of maintenance and for any loss or damage occasioned by the contractor in the course of any operations carried out by him for the purpose of complying with his obligations under clause.

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

26.2 Damage to persons and property

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

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

26.3 Contractor to indemnify SBI

The contractor shall indemnify the SBI against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision of these sub-clauses of 26.2

26.4 Contractor's superintendence

The contractor shall fully indemnify and keep indemnified the SBI against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claim made under or action brought against SBI in respect of such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expenses to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the SBI if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Bank's Engineer in this behalf.

26.5 Third party Insurance

- 26.5.1 Before commencing the execution of the work the contractor without limiting his obligations and responsibilities under clause 26.0 of GCC shall insure against his liability for any material or physical damage, loss, or injury which may occur to any property including that of SBI, or to any person, including any employee of the SBI, by or arising out of the execution of the works or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to clause 26.0 thereof.

26.5.2 Minimum amount of third party insurance

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

The minimum insurance cover for physical property, injury and death is **Rs. 10 lacs per occurrence with the number of occurrences limited to four**. After each occurrence contractor will pay additional premium necessary to make insurance valid for four occurrences always.

26.6 Accident or Injury to workman:

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

26.6.2 Insurance against accidents etc. to workmen:

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

26.6.3 Remedy on Contractor's failure to insure:

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

Without prejudice to the other rights of the SBI against the contractor, in respect of such default, the employer shall be entitled to deduct from any sums payable to the contractor the amount of any damages, costs, charges, and other expenses paid by the SBI and which are payable by the 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.

27.0 Commencement of Works:

The date of commencement of the work will be reckoned as the date of handing over site or fifteen days from the date of issue of letter of acceptance of the tender by the SBI whichever is later.

28.0 Time of completion:

Time is essence of the contract and shall be strictly observed by the contractor. The entire work shall be completed within as specified in the NIT from the date of commencement. If required in the contract or as directed by the Bank's Engineer, the contractor shall complete certain portions of work before completion of the entire work. However the completion date shall be reckoned as the date by which the whole work is completed as per the terms of the contract.

29.0 Extension of time:

If, in the opinion of the Bank's Engineer, the work be delayed for reasons beyond the control of the contractor, the Bank's Engineer may submit a recommendation to the SBI to grant a fair and reasonable extension of time for completion of work as per the terms for contract. If the contractor needs an extension of the time for completion of the work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion as stipulated in the contract, the contractor shall apply to the SBI through the Bank's Engineer in writing at least 30 days before the expiry of the scheduled time and while applying for extension of time he shall furnish the reasons in detail and his justification if any, for the delays. The Bank's Engineer shall submit their recommendations to the SBI in the prescribed format for granting extension of time. While granting extension of time the contractor shall be informed the period extended times, which will qualify for levy of liquidated damages. For the balance period in excess of original stipulated period and duly sanctioned extension of time by the SBI. The provision of liquidated damages as stated under

clause 9 of GCC shall become applicable. Further the correct shall remain in force even for the period beyond the due date of completion irrespective whether the extension is granted or not.

30.0 Rate of progress:

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

31.0 Work during nights and holidays:

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

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

32.0 No compensation for restrictions of work:

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

Provided that the contactor shall be paid the charges on the cartage only of materials actually and bonafide brought to the site of the work by the contactor and rendered surplus as a result of the abandonment, curtailment of the work or any position thereof and taken back by the contactor, provided however that the Bank's Engineer shall have in such cases the opinion of taking over all or any such material at their purchase price or at local current rate whichever is less.

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

33.0 Suspension of work:

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

34.0 Action when the whole security deposit is forfeited

In any case in which under any clause or clauses of this contract, the contactor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit the Bank's Engineer shall have the power to adopt any of the following course as they may deem best suited to the interest of the SBI.

- a) To rescind the contract (of which rescission notice in writing to the contactor by the Bank's Engineer shall be conclusive evidence) and in which case the security deposit of the contactor shall be forfeited and be absolutely at the disposal of SBI.

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

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

35.0 Owner's right to terminate the contract:

If the contractor being an individual or a firm commit any 'Act of Insolvency' or shall be adjusted an Insolvent or being an incorporated company shall have an order for compulsory winding up voluntarily or subject to the supervision of Govt. and of the Official Assignee of the liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him to do so, to show to the reasonable satisfaction of the Bank's Engineer that he is able to carry out and fulfill the contract and to give security therefore if so required by the Bank's Engineer.

Or if the contractor (whether an individual firm or incorporated company) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of the contractor.

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

- a) has abandoned the contract ;or
- b) has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 14 days after receiving from the SBI through the Bank's Engineer written notice to proceed,or
- c) has failed to proceed with the works with such diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or has failed to remove the materials from the site or to pull down and replace work within seven days after written notice from the SBI through the Bank's Engineer that the said materials were condemned and rejected by the Bank's Engineer under these conditions; or has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contract to be observed and performed by the contractor for seven days after written notice shall have been given to the contractor to observe or perform the same or has to the detriment of good workmanship or in defiance to the SBI's or the Bank's Engineer's instructions to the contrary subject any part of the contract. Then and in any of said cases the SBI and or the Bank's Engineer, may notwithstanding any previous waiver, after giving seven days notice in writing to the contractor, determine the contract, but without thereby affecting the power the SBI or the Bank's Engineer or the obligation and liabilities of the contractor the whole of which shall continue in force as fully as if the contract had not been so determined and as if the works subsequently had been executed by or on behalf of the contractor. And further the SBI through the Bank's Engineer their agents or employees may enter upon and take possession of the work and all plants, tools, scaffoldings, materials, sheds, machineries lying upon the premises or on the adjoining lands or roads use the same by means of their own employees or workmen in carrying on and completing the work or by engaging any other contractors or persons to complete the work and the contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for completing and finishing or using the materials and plant for the works.

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

36.0 Certificate of payment:

The contractor shall be entitled under the certificates to be issued by the Bank's Engineer to the contractor within 10 working days from the date of receipt of certificate to the payment from SBI from time to time. The SBI shall recover the statutory recoveries other dues including the retention amount from the certificates of payments.

They shall provide always that the issue of any certificate by the Bank's Engineer during the progress of works or completion shall not have effect as certificate of satisfaction or relive the contractor from his liability under clause.

The Bank's Engineer shall have power to withhold the certificate if the work or any part thereof is not carried out to their satisfaction.

The Bank's Engineer may by any certificate make any corrections required in previous certificate.

The SBI shall modify the certificate of payments as issued by the Bank's Engineer from time to time while making the payment.

The contractor shall submit interim bills only after taking actual measurements and properly recorded in the Mbooks.

The contractor shall not submit interim bills when the approximate value of work done by him is less than **60 % of the accepted tender amount** and the minimum interval between two such bills shall be **30 days**.

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

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

37.0 SETTLEMENT OF DISPUTES AND ARBITRATION:

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instruction, orders or these conditions or otherwise concerning the work or the execution or failure to execute the same whether

arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter.

- i) If the contractor consider that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the Bank' or in case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract or raise any dispute, the contractor shall forthwith give notice in writing of his claim, or dispute to the **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** and endorse a copy of the same to the Bank', within 30 days from the date of disallowance thereof or the date of deduction or recovery. The said notice shall given full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the Bank be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claim not notified to the **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** in writing in the manner and within the timeaforesaid.
- ii) **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** shall give his decision in writing on the claims notified by the contractor. The contractor may within 30 days of the receipt of the decision of **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi** submit his claims to the conciliating authority namely the **Deputy General Manager & CDO, State Bank of India, Local Head office, New Delhi** for conciliation along with all detail and copies of correspondence exchanged between him and the **Assistant General Manager (P&E), Premises & Estate Department, State Bank of India, Local Head office, New Delhi**.
- iii) If the conciliation proceedings are terminated without settlement of the disputes, the contractor shall, within a period of 30 days of termination thereof shall give a notice to the concerned **CHIEF GENERAL MANAGER** of the Bank for appointment of an arbitrator to adjudicate the notified claims failing which the claims of the contractor shall be deemed to have been considered absolutely barred andwaived.
- iv) Except where the decision has become final, binding and conclusive in terms of the contract, all disputes or differences arising out of the notified claims of the contractor as aforesaid and all claims of the Bank shall be referred for adjudication through arbitration by the Sole Arbitrator appointed by the **CHIEF GENERAL MANAGER of the Bank**. It will also be no objection toany such appointment that the Arbitrator so appointed is a Bank Officer and that he had to deal with the matters to which the contract relates in the course of his duties as Bank Officer. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or

vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid by the said **CHIEF GENERAL MANAGER of the Bank**. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

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

It is also a term of this contract that no person other than a person appointed by such **CHIEF GENERAL MANAGER of the Bank** as aforesaid should act as arbitrator.

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

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

It is also a term of this contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof, shall be paid and fix or settle the amount of costs to be so paid.

38.0 Water Supply

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

- i. That the water used by the Contractor shall be fit for construction purpose to the satisfaction of the Bank's Engineer.
- ii. The Contractor shall make alternative arrangements for the supply of water if the arrangements made by the Contractor for procurement of water in the opinion of the Bank's Engineer is unsatisfactory.
- iii. The Contractor shall construct temporary well/tube well in SBI land for taking water for construction purposes only after obtaining permission in writing from the SBI. The contractor has to make his own arrangements for drawing and distributing the water at his own cost. He has to make necessary arrangements. To

avoid any accidents or damages caused due to construction and subsequent maintenance of the wells. He has to obtain necessary approvals from the local authorities, if required at his own cost. He shall restore the ground to its original condition after wells are dismantled on completion of work or hand over the well to the SBI without any compensation as directed by the Bank's Engineer.

39.0 Power Supply:

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

40.0 Treasure trove etc.:

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

41.0 Method of measurements:

Unless otherwise mentioned in the schedule of quantities or in mode of measurement or elsewhere in these documents the measurement will be on the net quantities or work produced in accordance with up to date as per rules laid down by the Bureau of Indian Standards. In the event any dispute/disagreement the decision of the Bank's Engineer shall be final and binding on the contractor.

42.0 Maintenance of registers:

The contractor shall maintain the following registers as per the enclosed format at site of work and should produce the same for inspection of SBI/Bank's Engineer whenever desired by them. The contractor shall also maintain the records/registers as required by the local authorities/Government from time to time.

- i) Register for secured advance
- ii) Register for hindrance to work
- iii) Register for running account bill
- iv) Register for labor

43.0 PRICE VARIATION ADJUSTMENT (PVA) FOR ALL MATERIALS (INCLUDING CEMENT & STEEL) & LABOUR (Applicable only for completion period beyond 12 months)

In partial modification of the provisions made elsewhere in this contract regarding rate quoted being not subject to any variations, price adjustments to the value of

work payable to the Contractor at tendered rates shall be made towards variations in the prices of materials and labour in the manner specified hereunder:-

If, after written order to commence the work and during the operative period of this contract including any authorized extensions of the original stipulated completion period:-

(a) There be any variation in the Consumer Price Index- General Index- for industrial workers (Base 1982=100) (source – data published from time to time Indian Labor Journal by the Labor Bureau, Government of India);

OR

(b) There be any variation in the All India Wholesale Price Index for all commodities (Base 1993-94=100) (as published from time to time in the RBI Bulletin based on the date issued by the Office of the Economic Advisor to the Government of India); 164 Price Variation Adjustment (PVA) towards (1) Labor Component and (2) Material Component shall be calculated in accordance with the formula A and B respectively, given below, subject to stipulations herein under mentioned:-

FORMULA (A) FOR LABOUR:

$$VL = 0.85P \times \frac{K1}{100CO} \times (C1 - CO)$$

FORMULA (B) FOR MATERIALS:

$$VM = 0.85 \times (P-Y) \times \frac{K2}{100IO} \times (I1-IO)$$

Where -

VL = Amount of Price Variation Adjustment
Increase or decrease in rupees due to labor component

VM = Amount of Price Variation Adjustment
Increase or decrease in rupees on account of materials component

NOTE: Bill period (noted hereunder) signifies the period of actual execution and not date of measurement or preparation of bill.

P = Cost of work done during the period under consideration (bill period) excluding advances on materials and/or adjustments thereof.

Y = Cost of any other materials supplied/ arranged by the Bank at fixed price during the period under consideration (bill period)

K1 = Percentage of labour component calculated as indicated in Note (1) below.

K2 = Percentage of materials component as indicated in Note (2) below.

CO = Consumer Price Index - General Index Number for industrial workers (Base 1982 = 100) referred to at (a) above, ruling on the last due date of receipt of tenders, and as applicable to the centre, nearest to the place of work, for which the index is published)

C1 = Average of above mentioned Consumer Price Index number during the period under consideration (bill period)

IO = All India Wholesale Price Index number for all commodities referred to at (b) above, ruling on the last date for receipt of tenders and as applicable to the centre, nearest to the place of work for which the index is published.

I1 = Average of above mentioned monthly all India Wholesale Price Index numbers during the period under consideration (bill period).

NOTE (1): K1 shall be taken as under:-

<u>Component of work</u>	<u>K 1</u>
a) FURNITURE work including ancillary works and external work And RCC / tanks, septic tanks, etc. if any of sanitary and Plumbing work	30
b) Sanitary and plumbing works including fittings and fixtures (Internal work only)	20
c) FURNITURE installations work including fittings and fixtures (External and internal works)	20

NOTE (2): K2 shall be taken as under:-

<u>Component of work</u>	<u>K 2</u>
a) FURNITURE work including ancillary works as detailed Under Note (1) (a) above	70
b) Sanitary and plumbing works including fittings and fixtures As detailed under Note (1) (b) above	80
c) FURNITURE installations work including fittings and Fixtures as detailed under Note (1) (c) above	80

Stipulations:

- i PVA Clause is operative either way i.e. if the variations in above referred price indices are on the plus side. PVA shall be payable to the contractor and if they are on the negative side PVA shall be recoverable from the contractor for the respective bill period of occurrence offluctuations.
- ii The rates quoted by the Contractor shall be treated as firm for the value of work required to be done in the first 12months of the contract period from 166 the date of written order to commence work and no PVA is admissible on the same on any grounds whatsoever. The value of work required to be done during the first 12 months of the contract period shall be taken as 80% of the value of work to be done on pro-rata basis in 12 months as compared to the total stipulated completion period. No PVA is admissible on the value of work required to be done in first 12 months as worked out above, even if this value of work is actually done in a period longer than 12 months. However, in case of any delay in the first 12 months due to genuine reasons which are not attributable to the contractor and which are beyond his control, such period of delay will be deducted from 12 months and the value of work to be done will be 80% of the pro-rata value of work to be done in such reduced period on pro-ratabasis.
- iii (a) For works where the original stipulated period of completion is not more than 12 months, no PVA whatsoever is permissible under this clause. However, if the period of completion is delayed beyond 12 months on account of genuine reasons which are not attributable to the contractor and which are beyond his control, PVA will be admissible on the value of work done only in excess of value of work required to be done on a prorata basis in the first 12 months minus the period of such genuine delay.

(b) For purpose of admissibility of PVA all the cumulative period of extensions granted for reasons which are solely attributable to the contractor is excluded from the total extended period of the contracts and PVA shall not be admissible on the value of work done during such period of extensions, which are granted for keeping the contract current, but only due to reasons for which the contractor was solely responsible. Periods of extensions granted on account of genuine reasons which are not attributable to the contractor and which are beyond his control will however, be included in the period for which PVA isadmissible.

(c) Notwithstanding anything to the contrary mentioned in any other clause/ clauses of the contract, extensions of the contract period shall be granted by the Architect only with prior approval of the Bank. Extensions granted by the Architect without Bank's prior approval shall not bind the Bank for payment of PVA for work done in the concerned period of extensions.

- iv. (a) Where the total cost of work done beyond the value of work required to be done in the first 12 months (vide note (ii) and (iii) above does not exceed Rs.50 lacs the total amount of PVA worked out on the basis of provisions of foregoing stipulations will be limited to an upper ceiling of 10% of such value of work done in excess of value of work required to be done in the first 12 months, minus the cost of any materials issued/arranged by the Bank at fixed prices i.e. $P - Y$ (these terms being as per definitions given formulae A and Babove).
- (b) Where the total value of work done beyond the value of work required to be done in the first 12 months exceeds Rs.50 lacs, the PVA on the first Rs.50 lacs will be calculated as provided for in the foregoing para and for the balance value of work done for which PVA is admissible subject to foregoing conditions, the PVA will have the upper ceiling of 10% but it will be worked out at a lower rate i.e. 80% of the amount worked out as per the formulae A and B referred to earlier.
- v. In working out the amount of PVA as per all the foregoing stipulations, value of such extra items or such portions of extra items the rates of which are derived from the prevailing market rates of materials and labor will not be included in the value of work done. Value of only such extra items or such portions of extra items, rates of which are derived entirely from tendered rates will be included in the value of work on which PVA as calculated.
- vi. For claiming the payment for PVA the contractor shall keep such books of accounts and other documents, vouchers receipts etc. as may be required by the Bank/ Architect, for verification of the increased claims or reduction to be made as the case may be and he shall also allow Engineers and/or other duly authorized representatives of the Bank/Architects and furnish such information as may be required or called for to enable verification of the claim within a week of such request.
- vii. The contractor is required to submit to the Bank, through the Architect, his claims for PVA separately for each running Bill for the individual bill periods for the work paid to him by the Bank. He will also be required to submit detailed calculations in support of the claims.
- viii. No claim will be entertained from the contractor for interest or any other grounds for non-payment or for any delay in payment of PVA due to late publication or non-availability of the necessary price indices or due to delay in preparation of the Running or Final Bills.

- ix In view of adjustments for variations in process of materials and labor which have been covered in this clause no other adjustments for any reason whatsoever like statutory measures, taxes, levies, etc. will be allowed.

44.0 Force Majeure:

- 44.1 Neither contractor nor SBI shall be considered in default in performance of their obligations if such performance is prevented or delayed by events such as but not to war, hostilities revolution, riots, FURNITURE commotion, strikes, lockout, conflagrations, epidemics, accidents, fire, storm, floods, droughts, earthquakes or ordinances or any act of god or for any other cause beyond the reasonable control of the party affected or prevented or delayed. However a notice is required to be given within 30 days from the happening of the event with complete details to the other party to the contract, if it is not possible to serve a notice, within the shortest possible period without delay.
- 44.2 As soon as the clause of force majeure has been removed the party whose ability to perform its obligations has been affected, shall notify the other of such cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.
- 44.3 From the date of occurrence of a case of force majeure obligations of the party affected shall be suspended during the continuance of any inability so caused. With the cause it and inability resulting there from having been removed, the agreed time of completion of the respective obligations under this agreement shall stand extended by a period equal to the period of delay occasioned by such events.
- 44.4 Should one or both parties be prevented from fulfilling the contractual obligations by a state of force major lasting to a period of 6 months or more the two parties shall each other to decide regarding the future execution of this agreement.

45.0 Local laws, Acts, Regulations:

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

- i) Minimum Wages Act 1948 (Amended)
- ii) Payment of Wages Act 1936(Amended)
- iii) Workmen's Compensation Act 1923(Amended)
- iv) Contract labor regulation and abolition act 1970 and central rules 1971 (amended)
- v) Apprentice act 1961(amended)

- vi) Industrial employment (standing order) Act 1946(amended)
- vii) Personal injuries (compensation insurance) act 1963 and any other modifications
- viii) Employees' provident fund and miscellaneous provisions Act 1952 and amendment thereof
- ix) Shop and establishment Act
- x) Any other act or enactment relating thereto and rules framed there under from time to time.

46.0 Safety Code:

1. All personnel at site should be provided with Helmets and Safety Boots with some identification Mark. Visitors also should be provided with helmets. It should be ensured that these are used properly.
2. First Aid Box should be kept at site with all requisite materials.
3. No one should be allowed to inspect / work at a height without safety belt.
4. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well as suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).
5. Scaffolding or staging more than 3.5 meters above the ground or floors, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
6. Working platforms, Gangways, and Stairways should be so constructed that they do not sag unduly or unequally, and if the height of the platform or the Gangway or the Stairway is more than 3-5 meters above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fenced, as described.

7. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1meter.
8. Safe means of access shall be provided to all working platform and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 Meters in length while the width between side rails in rung ladder shall in no case be less than 30cms for ladder up to and including Meters in length. For longer ladders this width should be increased at least 6mm for each additional 30cms. Uniform step spacing shall not exceed30cms.
9. Adequate precautions shall be taken to prevent danger from electrical equipments. For electrical on line work gloves, rubber mats, and rubber shoes shall be used.
10. All trenches 1.2 Meters or more in depth shall at all times be supplied with at least one ladder for each 30 meters length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1Meter above the surface of the ground. The sides of the trenches, which are 1.5 meters or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 Meters of the edge of the trench or half of the depth of the trench whichever is more. Cuttings shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.
11. Before any demolition work is commenced and also during the process of the work:-
 - (a) All roads and open areas adjacent to the work site shall either be closed or suitably protected;
 - (b) No electrical cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
 - (c) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.

- (d) All necessary personal safety equipment as considered adequate by the site Engineer should be kept available for the use of the persons employed on the site and maintained in a condition suitable for immediate use; and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
 - (e) Workers employed on mixing Asphaltic materials, Cement and lime mortars shall be provided with protective footwear and protective goggles.
 - (f) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
 - (g) Those engaged in welding works shall be provided with Welder's protective eye-shields.
 - (h) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - (i) When workers are employed in sewers and manholes, which are in use, the contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into the manholes so opened shall be cordoned off with suitable railing and provided with warning signals and boards to prevent accident to the public.
- 12 Use of hoisting machines and tackle including their attachments, anchorage and support shall conform to the following standard or conditions:-
- (a) These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good repairs and in good working order.
 - (b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
 - (c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffold, winch or give signals to the operator.

- (d) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or lowering or as means of suspension the safe working load shall be ascertained by adequate means.
 - (e) Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - (f) Motor, gearing, Transmission, Electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced.
 - (g) When workers are employed on electrical installation, which are already energized, insulating mats, wearing apparel such as gloves, sleeves, and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
13. All scaffolds, ladders and other safety devices, mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
14. (i) These and all other necessary safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
- (i) To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the labor officer, Engineers of the Department or their representatives.

(ii) Notwithstanding the above clauses, there is nothing in these to exempt the contractor from the operations of any other Act or rule in force in the Republic of India.

47.0 Accidents:

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

SPECIAL CONDITIONS OF CONTRACT

Scope of Work: As defined & explained in these tender documents.

1.0 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 Bank's Engineer before proceeding with the work.

2.0 Notice of operation:

The contractor shall not carry out any important operation without the consent in writing from the Bank's Engineer.

3.0 Construction records:

The contractor shall keep and provide to the Bank's Engineer full and accurate records of the dimensions and positions of all new work and any other information necessary to prepare complete drawings recording details of the work as constructed.

4.0 Safety of adjacent structures and trees

The contractor shall provide and erect to the approval of the Bank's Engineer such supports as may be required to protect effectively all structures and protective guards to trees which may be endangered by the execution of the works or otherwise take such permanent measures as may be required by the Bank's Engineer to protect the trees and structures.

5.0 Temporary works:

Before any temporary works are commenced the contractor shall submit at least 7 days in advance to the Bank's Engineer for approval complete of all temporary works he may require for the execution of the works. The contractor shall carry out the modifications relating to strength, if required by the Bank's 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.

6.0 Temporary roads

The contractor shall provide access road to the site from the nearest main road at no extra cost and as directed by the Bank's Engineer. The contractor shall also be responsible for proper maintenance of this access road and would take all care to see that existing services, if any, are maintained in working order at his own cost. The laying and maintaining the temporary roads within the site area shall be the contractor's responsibility and the contractor shall take such measures that are necessary and as directed by the Bank's Engineer.

7.0 Water, power, and other facilities:

- a) The rate quoted by the contractor shall include all expenses that are required for providing all the water required for the work and the contractor shall make his own arrangements for the supply of good quality water suitable for the construction and good quality drinking water for their workers. If necessary the contractor has to sink a tube well/ open well and bring water by means of tankers at his own cost for the purpose. The SBI will not be liable to pay any charges in connection with the above.
- b) The rate quoted in the tender shall include the expenses for obtaining and maintaining power connections and shall pay for the consumption charges.
- c) The contractors for other trades directly appointed by the SBI shall be entitled to take power and water connections from the temporary water and power supply obtained by the contractor. However the concerned contractor shall make their own arrangements to draw the supply and pay directly the actual consumption charges at mutually agreed rates between them. All municipal charges for drainage and water connections for construction purposes shall be borne by the contractor and charges payable for permanent connections, if any, shall be initially paid by the contractor and the SBI will reimburse the amount on production of receipts.
- d) The SBI as well as the Bank' Engineer shall give all possible assistance to the contractors to obtain the requisite permission from the various authorities, but the responsibility for obtaining the same in time shall be of the contractor.

8.0 Office accommodation

- a) The contractors shall provide and maintain all necessary offices, workshops, stores, shelters, sanitary facilities, canteens and other temporary structures for themselves in connections with the work at the site at their own cost after getting the approval from the Bank's Engineer.
- b) A site office for the use of SBI/ the Bank' Engineer shall be provided by the contractors at his own expenses.

- c) All temporary buildings and facilities as mentioned above shall be removed on completion of the work or at any other earlier date as directed by the contractors.

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 the responsibility of the contractor to obtain statutory approvals for providing the above facilities

9.0 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 facilities. The contractor shall also make the arrangement at his own cost for transport where necessary for his staff and workmen to and from site of work at his own cost.

10.0 Lighting of works:

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

11.0 Fire fighting arrangements:

- i) The contractor shall provide suitable arrangement 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. These equipments shall be provided at suitable prominent and easily accessible places and shall be properly maintained.
- ii) Any deficiency in the fire safety or unsafe conditions shall be corrected the contractor at his own cost and to the approval of the relevant authorities. The contractor shall make the following arrangements at his own cost but not limited to the following.
 - a) Proper handling, storage and disposal of combustible materials and waste.
 - b) Work operations which can create fire hazards
 - c) Access for firefighting equipments.
 - d) Type, number and location of containers for the removal of surplus materials and rubbish.
 - e) Type, size, number and location of fire extinguishers or other fire fighting equipments.
 - f) General housekeeping.

12.0 Site order book:

A site order book shall be maintained at the site for the purpose of quick communication with the Bank' Engineer. Any communication relating to the works may be conveyed through records in the site order book. Such a communication from one party to the other shall be deemed to have been adequately served in terms of contract. Each site order book shall have machine numbered pages in triplicates and shall carefully maintained and preserved by the contractor and shall be made available to the Bank' Engineer as an when demanded. Any instructions which the Bank' Engineer may like to issue to the contactor or the contractors may like to bring to the Bank' Engineer Two copies of such instructions shall be taken from the site order book and one copy will be handed over to the party against proper acknowledgement and the second copy will be retained for their record.

13.0 Temporary fencing/barricading

The contactor shall provide and maintain a suitable temporary fencing/ barricading and gates at his cost to adequately enclose all boundaries of the site for the protection of the public and for the proper execution and security of the work and in accordance with the requirement of the Bank' Engineer and regulations of local authorities. These shall be altered, relocated and adopted from time to time as necessary and removed on completion of the work.

14.0 Site meetings:

Site meetings will be held to review the progress and quality evaluation. The contactor shall depute a senior representative along with the site representative and other staff of approved sub-contractors and suppliers as required to the site meetings and ensure all follow up actions. Any additional review meetings shall be held if required by the Bank's Engineer.

15.0 Disposal of refuse:

The contactor shall cart away all debris, refuse etc. arising from the work from the site and deposited the same as directed by the Bank' Engineer at his own cost. It is the responsibility of the contactor to obtain approval from the local authorities concerned to the effect that all rubbish arising out of contractor's activities at the construction site or any other site activities borrow pits has been properly disposed off.

16.0 Contractor to verify site Measurements:

The contractor shall check and verify all site measurements wherever requested by other specialist contractors 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.

17.0 Displaying the name of the work:

The contractor shall put up a name board of suitable size as directed by the Bank' Engineer indicating the name of the project and other details as given by the Bank' Engineer at his own cost and remove the same on completion of work.

18.0 Bar bending schedule:

The contractor shall prepare a detailed bar bending schedule for all reinforced concrete works and get them approved by the Bank' Engineer well in advance.

19.0 As built drawings:

- i) For the drawings issued to the contractor by the Bank' Engineer. The Bank' Engineer will issue two sets of drawings to the contractor for the items for which some changes have been made from the approved drawings as instructed by the SBI/ the Bank' Engineer. The contractor will make the changes made on these copies and return these copies to the Bank' Engineer for their approval. In case any revision is required or the corrections are not properly marked, the Bank' Engineer will point out the discrepancies to the contractor. The contractor will have to incorporate these corrections and/or attend to discrepancies either on the copies as directed by the Bank' Engineer and resubmit to him for approval. The Bank' Engineer will return one copy duly approved by him.
- ii) For the drawings prepared by the contractor,
The contractor will modify the drawings prepared by him wherever the changes are made by the SBI/ the Bank' Engineer and submit two copies of such modified drawings to the Bank' Engineer for approval. The Bank' Engineer will return one copy of the approved drawing to the contractor.

20.0 Approved make:

The contractor shall provide all materials from the list of approved makes at his own cost and also appoint the specialized agency for the waterproofing, anti- termite, aluminum doors and windows and any other items as specified in the tender. The Bank' Engineer may approve any make/ agency within the approved list as given in the tender after inspection of the sample/ mock up.

21.0 Procurement of materials:

The contractor shall make his own arrangement to procure all the required materials for the work. All wastages and losses in weight shall be to the contractor's account.

22.0 Excise duty, Taxes, Levies etc.

The contractor shall pay and be responsible for payment of all taxes, duties, levies, royalties, fees, cess or charges in respect of the works including but not limited to sale taxes, tax on works contract excise duty and octroi, payable in respect of material, equipments plant and other things required for the contract. All the aforesaid taxes, duties, levies, fees and charges shall be to the contractor's account and the SBI shall not be required to pay any additional or extra amount on this account. Variation of taxes, duties, levies, etc. if any, till completion of work shall be deemed to be included in the quoted rates and no extra claim on this account will in any case be entertained. If a new tax or duty or levy or cess or royalty or octroi is imposed under as statue or law during the currency of the contract/work the same shall be borne by the contractor.

23.0 Acceptance of tender:

The SBI shall have the right to reject any or all tenders without assigning any reason. They are not bound to accept the lowest or any tender and the tenderer or tenderers shall have no right to question the acts of the SBI. However adequate transparency would be maintained by the SBI.

24.0 Defects after Virtual completion and defects liability period:

Any defect shrinkage, settlement or other faults which may appear within the "Defects Liability Period" which shall be as per NIT from the date of the virtual completion of the work, arising in the opinion of the Architect from materials or workmanship not in accordance with the contract, shall upon the direction in writing of the Architect, 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 then Bank may employ and pay other person /agency to amend and make good such defects, shrinkage, settlement 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 Bank or may be deducted by the Bank, upon the Architect's certificate in writing, from any money due or may be deducted by the Bank, upon the Architect's certificate in writing, from any money due or that may become due to the contractor, or the bank may in lieu of such amending and marking good by the contractor deduct from any money due to the contractor a sum, to be determined by the Architect equivalent to the cost of amending such work and in the event of the amount retained under clause of GCC, hereof being insufficient, recover the balance from the contractor, together with any expenses the Bank 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 Architect as provided in clauses of GCC the contractor shall be liable to make good in the same manner as if such work or material has been done or supplied by the Contractor and been subject to the provisions of this Contract. The Contractor shall remain liable under the provisions of this Contract notwithstanding the signing of any Certificate or the passing of any accounts, by the Architect.

ADDITIONAL CONDITIONS OF CONTRACT

Notwithstanding anything contained herein above the following ADDITIONAL CONDITIONS shall be applicable for this contract / work.

1.0 PRICE VARIATION ADJUSTMENT (PVA):

The rates quoted by the bidder shall remain firm throughout the contract / construction period. PVA & PVA Clause mentioned elsewhere in these documents shall not be applicable.

2.0 WORKING SCHEDULE / BARCHART:

Detailed working date schedule and bar chart for the work shall be prepared by the contractor and got approved from the Bank / Architect. A detailed flow chart of activities highlighting curing, setting time / period, pot life period / predecessor, successor & critical activities etc. shall also be prepared by the contractor for effective management of work and also to make a realistic bar chart / working date schedule.

3.0 RATES:

It may be noted that it is an item rate contract. Rates accepted by the bank shall be for all levels/height and lead unless otherwise specified in the schedule of quantities and shall be inclusive of temporary shifting and installation of furniture to keep branch functional , all man, labour, supervision, materials, tools, equipment, barricading, cordoning, covering scaffoldings, water, electricity, taxes, insurances, arrangements, temporary works, over heads, collection & carting away & final disposal of rubbish & debris, regular cleaning of site etc. required to complete the works in all respect to the satisfaction of the architects / Bank and nothing additional or extra shall be paid on these accounts and / or on account of variation in rates / taxes and / or imposition of new tax / levy during currency of contract / work, except for the items, taxes, works etc. for which there is a specific mention for additional payment in these tender documents. The rates shall remain firm throughout the contractperiod.

4.0 BASIC RATE:

Wherever for any item of work basic rate of materials are specified, the materials of that basic rates as selected by the Bank/ Architect at any commercial establishment/ seller of Ahmadabad or nearby centre, if such materials are not available at Ahmadabad, shall be procured and used by the contractor.

Basic rate of any material (Without processing) is the rate offered by seller against Bill and credit period not exceeding 15 days, including all applicable taxes etc (but excluding GST) ex- godown. Payments for procurement of materials shall be made by the contractor themselves.

If the basic rate of any material actually used for the work is more or less than the basic rate given in schedule of quantities, in that case adjustments in the rate admissible to the contractor shall be modified by adding or subtracting, as the case is, from the accepted tender rates an amount equivalent to difference in the basic rates plus 15 % of difference of the basic rate.

5.0 BRANDED / FINISHING ITEMS:

Branded items such as tiles, construction chemicals, hardware, sanitary wares and other finishing items shall be used as per the samples selected and approved by the architects / Bank from the brands/makes mentioned in the tender document. If the contractor intend to use an equivalent substitute than, they have to produce necessary documentary evidences establishing the equivalency to the satisfaction of the architect/Bank and shall use the same only after approval of the architect.

6.0 INSURANCE

The contractor shall keep the Bank indemnify from all the claims arising out of damage to workman/person & property of Bank and/or third party and the SBI shall have right to recover the cost of such damages /claim from any amount due to the contractor. If the claim amount exceeds the amount due to be paid to the contractor, the contractor shall immediately pay such excess amount to the Bank. Decision of the Bank regarding determination of the amount of claim /damage shall be final & binding to the contractor. Being a short period work, the Bank may not be able to check or verify the various insurance policies required to be taken by the contractor and trust that the contractor has obtained all such policies.

7.0 SITE CONDITION & WORKING HOURS.

The tenderer must visit the site and acquaint themselves with the site conditions. It must be noted that the work is to be carried out in the functional branch without hindering the normal functioning of the Branch. The work may generally be carried out on holidays or after Banking hours.

Height of internal spaces of the branch is higher than normal structures. Average height of internal spaces of the structure in approx. 6 to 6.5 mts for hall and approx. 4.5 mts for rooms. The tenderer should examine all the existing site condition before quoting the rates. All the quoted rates are inclusive of required scaffolding works, lifting of material, carriage etc. Temporary barricade & partitions/screens to be provided by contractor to safeguard bank users from proposed construction activities (for dust, noise, material fall etc.) with out any extra cost.

The Lift shall not be used by Contractor for any propose.

The contractor has to work in coordination with the other contractors and daily/weekly schedule of working shall be prepared in consultation with the Architects/Banks. Regular updating / modification of such schedule shall be required.

For normal functioning of the Bank/Branch the contractor shall be required to shift the furniture etc and/or relocate the existing and/or new loose and/or fix furniture and/or any other item of works and/or any such materials at new location at times. The contractor shall carry out all such activities with utmost priority and without any additional/extra cost to the bank. The tenderer shall quote the rates inclusive of all such activities/works as may be required as per site conditions. The rates quoted by the tenderer shall be inclusive of all such temporary/semi-permanent works/activities.

8.0 GENERAL:

- (i) Source of materials / samples / brands / makes etc. shall be got approved from the Architects / Bank before using. In case of deviations, decision of the Bank shall be final and binding and shall not be open for arbitration.
- (ii) The Architects have their specific role/duties/rights as defined in these tender documents. However in the event of any dispute arising out of differences between the opinions of the Architects and also their role/duties/rights, the Banks' decision shall be final & binding on the Architects and the Contractor and shall not be open to arbitration.
- (vi) Any item mentioned in the BOQ with "TO THE SHAPE" will have measurement of onsite executed to the shape area only.
- (vii) The contractor's qualified & authorized representative shall remain on site during the entire execution process for coordination with various agencies/ Architect/Bank & execution of work.
- (viii) Hidden measurement. It is contractor's responsibility to get the measurement checked immediately on completion of such items. This shall be done before finishing the same & before ceiling boarding done. The Architect shall be provided with such details well in advance so that the other work is not held up due to last moment action.
- (ix) MTC (Manufacturer Test certificate) Where ever applicable shall be arranged & submitted by the contractor.
- (x) Water & Electricity, if available, shall be provided by the Bank at one point without any charges. However, if the water & electricity could not be provided by the Bank, the same shall be arranged by the contractor at their own cost within the quoted/accepted rate. Nothing extra shall be paid by the Bank on account of not providing the water & Electricity.
- (XI) Wherever the specifications are not specified in details the work shall be carried out as per CPWD specifications or Manufacturer's instructions or architects instructions depending upon the site conditions as directed by the Bank/Architects.
- (XII) The contractor shall produce the bills / challans / documentary evidences and proof in respect of genuineness of materials used by him when so ever asked/demanded by the Architects/Bank.

PERFORMA 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 W O
4. Tender Amount
5. Date of Commencement of Work
6. Period allowed for Completion as per Agreement
7. Date of Completion as per Agreement
8. Period for which Extension of Time has been given

Date :Month : Year

1. 1st Extension vide Bank's Letter No
2. 2nd Extension vide Bank's Letter No
3. 3rd Extension vide Bank's Letter No

9. Reasons for which extensions have been previously given (Copies of the previous applications should be attached)
10. Period for which extension is applied for and the reasons thereof including hindrances, time for extra work assigned, if any etc.

Signature of Contractor & Seal

TECHNICAL SPECIFICATIONS (MAKES/MODELS)

S. N	Particulars and Specifications	Approved Make / model
1.	Vitreous China Sanitary ware	HINDWARE/ JAQUAR / KOHLER
2.	Concealed Cistern	HINDWARE / JAQUAR / KOHLER
3.	Plastic W.C. seats Covers	HINDWARE/ JAQUAR / KOHLER
4.	Stainless Steel Sinks	JAYNA/ NIRALI
5.	Wash basin Sensor	HINDWARE / JAQUAR / KOHLER
6.	Health faucets	HINDWARE / JAQUAR / KOHLER
7.	Towel Dispenser	EURONICS/ BOBRIC /TOSHI
8.	Coat Hooks	EURONICS/ EAUSET / JAQUAR / KOHLER
9.	AUTO SOAP Dispenser	EURONICS/ JAQUAR
10.	Angle Valve	HINDWARE / JAQUAR / KOHLER
11.	Towel Ring	JAQUAR / KOHLER
12.	Bib Cock	HINDWARE/ JAQUAR / KOHLER
13.	Handicap Grab	EURONICS/ BOBRIC
14.	Air Purifier	EURONICS/ BOBRIC
15.	Bottle Trap	HINDWARE / JAQUAR / KOHLER
16.	Kitchen Mixer	HINDWARE / JAQUAR / KOHLER
17.	Hand Drier	EURONICS / BOBRIC
18.	Rubber Insulation	ARMAFLEX/ VIDEOFLEX
19.	Cpvc pipes/fittings	HINDWARE TRUFLO / ASTRAL /FINOLEX/ ASHIRWAD
20.	Upvc pipes & Fittings .	HINDWARE TRUFLO /ASTRAL/ FINOLEX/ ASHIRWAD
21.	S.S. Hinged Grating	CHILLY / JAYNA / NIRALI
22.	Check Valves (Dual Slim type)	CASTLE / ZOLOTO / SANT / DRP
23.	Butterfly Valve	CASTLE / ZOLOTO / SANT / DRP
24.	Ball valves (15 to 40mm)	CASTLE / ZOLOTO / SANT / DRP
25.	Gate Valve	CASTLE / ZOLOTO / SANT / DRP
26.	Gunmetal valve (full way valve) Class-I	CASTLE / ZOLOTO / SANT / DRP
27.	C.I. double flanged sluice valve	KIRLOSKAR / SHIVA-DURGA
29.	Foot Valve	CASTLE / ZOLOTO / SANT / DRP
30.	Pressure Reducing Valve (PRVs)	CASTLE / ZOLOTO / SANT / DRP
31.	FRP Manhole cover & frame and FRP Grating	GW Drain / Strong Drain / FIBER ONE
32.	SFRC Manhole COVERS ETC	OMJI / SHRERAM CONCRETE SRCP / KK

33.	Pipe Clamps / Hangers / Support	CAMRY/ CHILLY
34.	Clamps & Support	CAMRY/ CHILLY
35.	Vitrified Tiles	Kajaria/Somany/ H.R.Johnson/NITCO/Orient Bell
36.	Ceramic wall Tiles	Kajaria/Somany/ H.R.Johnson/NITCO/Orient Bell
37.	Ceramic floor Tiles (antiskid)	Kajaria/Somany/ H.R.Johnson/NITCO/Orient Bell
38.	Paints	Asian/ Nerolac/ Berger/ Dulux
39.	Cement paint	Snowcem/ Surfaced/ Durocem
40.	Synthetic Enamel Paint	Asian/ Nerolac/ Berger/ Dulux
41.	Acrylic Emulsion Paint (Interior and Exterior)	Asian/ Nerolac/ Berger/ Dulux
42.	Glazing	Modi Tuff Glass/ Triveni Glass Ltd./ Indo Asahi Glass Co. Ltd./ Saint Gobain
43.	Cement	Grade 43/53 of L&T/ A.C.C./ Ambuja/ Ultratech
44.	Wooden Laminated Flooring	Pergo/ Tiles/ Xylos/ Armstrong/ Vista
45.	Aluminum Fittings	Jindal/ Hindalco/ MAAN
46.	Aluminum Extrusion Sections	Jindal/ Hindalco/ MAAN
47.	Commercial Plywood	Duro/Century/ Green/ Archid
48.	Laminates	Greenlam / Century/ Aica/ Archid
49.	Veneer	Duro/Century / Durian/ Archid/ Green
50.	Drawer Sliding/ Patch Fittings	Earl Bihari (EBCO)/ Godrej/ Hettich/ Dorma
51.	Floor Spring / Door Closer	Godrej / Hardwyn / Dorma/ Haffele
52.	Triple Computer Monitor Mount/ Stand Arm	Vivo/ Dell/ HP
53.	Flush Door	Century/ Archid/ Sonear
54.	Texture Interior Paint	Sandtex Matt/ Dulux/ Berger/ Okios/ Asian
55.	Readymade Computer Drawer	EBCO/ Hettich/ Blum
56.	Paints	Asian/ Nerolac/ Berger/ Dulux
57.	Cement paint	Snowcem/ Surfaced/ Durocem
58.	Synthetic Enamel Paint	Asian/ Nerolac/ Berger/ Dulux
59.	Acrylic Emulsion Paint (Interior and Exterior)	Asian/ Nerolac/ Berger/ Dulux

60.	Glazing	Modi Tuff Glass/ Triveni Glass Ltd./ Indo Asahi Glass Co. Ltd./ Saint Gobain
61.	Cement	Grade 43/53 of L&T/ A.C.C./ Ambuja/ Ultratech
62.	Mineral Fibre False Ceiling	Armstrong/ Indian Gypsum Board/ Gypro
63.	ACP Panels/ Sheets	Alubond/ ALU Decor/ Alstrong/ Alstone
64.	Acrylic Sheets	Sanmati Acrylics/ Acrylic Sheet India/ Acry Plus
65.	Vertical/Roller blinds	Vista/ MAC/ DACK
66.	Corian	Corian/ LG/ Samsung
67.	PU Paint	Asian/ Berger/ ICI
68.	Wall Paper	Elemento/ Marshel
69.	Solid Surface material	CORIAN or equivalent
70.	Tile Adhesive	CICO, Pidilight, Unitile
71.	Insulation	Lioyed Insulation, UP Twiga or equivalent
72.	Rubber/ Poliurethene Foam	MM Foam, U Foam or equivalent

Notes-

1) Contractor should get the sample approved before execution.

TECHNICAL SPECIFICATIONS

SOIL, WASTE, VENT & RAINWATER PIPES & FITTINGS

1. Scope of Work

- a) Work under this section shall consist of furnishing all labour, materials, equipments and appliances necessary and required to completely install all soil, waste, vent and rainwater pipes and fittings as required by the drawings, and given in the Schedule of Quantities.
- b) Without restricting to the generally of the foregoing, the soil, waste, vent pipes system shall include the followings: -
 - i. Vertical and horizontal soil, waste and vent Pipes, and fittings, joints, clamps, connections to fixtures.
 - ii. Connection of pipes to municipal sewer lines.
 - iii. Floor and urinal traps, cleanout plugs, inlet fittings and rainwater heads /Khurras.
 - iv. Testing of all pipe lines.

2. General Requirements

- a) All materials shall be new of the best quality conforming to specifications and subject to the approval of Engineer in Charge.
- b) Pipes and fittings shall be fixed truly vertical, horizontal or in slopes as required in a neat workmanlike manner.
- c) Pipes shall be fixed in a manner as to provide easy accessibility for repair and maintenance and shall not cause obstruction in shafts, passages etc.
- d) Pipes shall be securely fixed to walls and ceilings by suitable clamps at intervals specified.
- e) Access doors for fittings and cleanouts shall be so located that they are easily accessible for repair and maintenance. Any access panel required in the Civil structure, false ceiling or marble cladding etc. shall be clearly reported to the Engineer in Charge in the form of shop drawings so that other agencies are instructed to provide the same.

3. Piping System

- a) **Soil, Waste and Vent Pipes**
 - i. Vertical soil and waste stacks shall be connected to a separate horizontal drain / single horizontal drain at ground floor generally as shown on the drawings.

- ii. Head (Starting point) of drains and sewage/waste water sumps (as and where applicable) having a length of greater than 4m upto connection to the main drain or manhole shall be provided with a 80/100mm vent pipe terminating above roof / a Maxi-Filtra with an ACF cartridge shall be provided close to the MH as directed by the Engineer in Charge.

4. Soil Waste and Vent Pipes and Fittings above Ground

- a) Soil, waste, vent, anti-syphonage and rain water pipes shall be PVC pipes.
- b) All pipes shall be straight and smooth and inside free from irregular bore, blow holes cracks and other manufacturing defects. Pipes shall be centrifugally spun iron so pipes conforming to IS 3989-1979 and fittings shall be conforming to IS 3989-1979.
- c) Fittings
- d) Fitting shall conform to the Indian Standard as for pipes. Contractor shall use pipes and fittings of matching specifications.
- e) Fittings shall be of the required degree of curvature with without access door.
- f) Access door shall be up with 3MM thick insertion rubber washer and white lead. The bolts shall be lubricated with grease or white lead for easy removal. The fixing shall be air and water tight.

5. Floor Traps & Urinal Traps

Floor traps shall be cast iron, deep seal with an effective seal of 50 mm. The trap and waste pipes shall be set in cement concrete blocks firmly supported on the structural floor.

6. CLEANOUT PLUGS

Contractor shall provide cast brass cleanout plugs as required. Cleanout plugs shall be thread and provided with key holes for openings. Cleanout plugs shall be fixed the pipes by a G.I. socket drip seal caulked. (Detail with sketch).

7. Cleanout Plugs

Floor Clean Out Plug

Clean out plug for soil, waste or rain water pipes laid under floors shall be provided near pipe junctions bends, tees, "Yes" and on straight runs at such intervals as required as per site conditions. Clean out plugs shall terminate flush with the floor levels. They shall be cast brass suitable for the pipe dia. With screwed to a G.I socket. The socket shall be joined to the pipe with drip seal/pipe seal.

8. Pipe Joints

Field-proven push-fit connection with improved and modified lip ring of high ageing-resistant shall be provided with the pipes and fittings for easy push-fit installation, installation procedure shall be followed.

9. Encasing in Cement Concrete

- a) Encasing of pipes is required to provide stability to the line and prevent its damage during construction.
- b) Soil and waste pipes under floor

Pipes laid in sunken slabs and in wall chases (when cut specially for the pipe) shall be encased in cement concrete as per BOQ and in 75mm in bed and all round. When pipes are running well above the structural slab, the encased pipes shall be supported with suitable cement concrete pillars of required height at intervals of 1.8m. All drainage pipes except when fixed above ground or in exposed locations shall be encased in cement concrete as specified above for soil and waste pipes. The bed and encasing thickness shall however be 150mm in bed and all round as shown on the drawing/specified in the BOQ.

10. Cutting and Making Good

Contractor shall provide all holes cut outs and chases in structural members necessary and required for the pipe work as building work proceeds. Wherever cut outs, holes are left in the original construction, they shall be made good with cement concrete and the surface restored as in original condition.

11. Sleeves/Cutouts

Contractor shall utilize all cutout and sleeves provided during construction to prevent breaking. The annular space between the pipe and the sleeve shall be filled up with approved type of fire hydrant sealant. When sleeves are misplaced or inaccurately located contractor shall make the holes in the wall or structural members at his own cost but only with the prior permission of the Engineer in Charge.

12. Testing

- a) Entire drainage system shall be tested for water tightness and smoke tightness during and after completion of the installation. No portion of the system shall remain untested. Contractor must have adequate number of expandable rubber bellow plugs, manometers, smoke testing machines, pipe and fitting work test benches and any other equipment necessary and required to conduct the tests.
- b) All materials obtained and used on site must have manufacturers hydraulic test certificate for each batch of materials used on the site.

13. Measurements

a) **General**

- i. Rates quoted for all items quoted shall be inclusive of all work and items given in the specifications and Schedule of Quantities
 - ii. Rates are applicable for the work in basements, under the ground, floors, in shafts at ceiling level area for all depths and building upto 45m in height.
- b) Rates are inclusive of cutting holes and chases in masonry work and making good the same.
- c) Rates are inclusive of pre-testing and on-site testing of the installations, materials and commissioning of the works.
- d) Pipes (unit of measurement. Linear meter to the nearest centimeter)
- e) Soil, waste, vent, anti-syphon age, rain water pipes, and drainage pipes shall be measured net when fixed correct to a centimeter including all fittings along its finished length.
- f) G.I. pipes/PVC shall be measured per running meter correct to a centimeter for the finished work, which shall include fittings e.g. Bends, Tees, Elbows, Reducers, Crosses, Sockets, Nipples and Nuts. The length shall be taken along center line of the pipes and fittings. All pipes and fittings shall be classified according to their diameter, method of jointing and fixing substance, quality and finish. The diameter shall be diameter of internal bore.
- g) Cement concrete around pipes shall be measured in plan and area of pipe shall be deducted from the concrete quantity.
- h) Slotted angles/channels shall be measured per linear meter of finished length and shall include support bolts and nuts embedded in masonry walls with cement concrete blocks and nothing extra will be paid for making good the same.
- i) Fittings (excluding pipe fittings) (Unit of measurement by numbers)
- Urinal traps, trap gratings, hoppers, cleanout plugs shall be measured by number per piece and shall include all items described in the relevant specifications and Schedule of Quantities.

SPECIFICATIONS OF INTERIOR & FURNISHING WORKS

1. General:

1. Without forgoing the requirements of the Conditions of Tender and the Conditions of Contract the works in general shall confirm to the "Latest Specifications" published by CPWD, New Delhi and the "Specifications for Works" stated in this tender. In case of items not covered by the General Specifications referred above, reference shall be made to the appropriate I.S. Code. If there is any difference in the particular specifications of individual item of work and the description of item as given in the Schedule of Quantity, the latter shall prevail. In case of any work for which there is no specification in I.S. Specifications or in the specifications forming part of tender documents or in case there is any variation, such work shall be carried out in all respects in accordance with the instructions to be issued by the Architects. The term Department shall mean the Employer. Any reference to ISI shall also mean reference to its successor Bureau of Indian Standards. All corrections to "Latest Specifications" or revisions of I. S. shall be deemed to apply to this contract.
2. Materials bearing ISI certification mark shall be given highest preference for use in the works.
3. Where the Contractor is required to do, perform, execute (etc.) any work or service or the like, it shall be deemed to be at his own cost. Absence of terms providing supplying, installing, fixing, etc. shall not even remotely entitle the Contractor to any additional payment thereof.
4. The rates accepted in the Schedule of Quantities apply to all floors, heights, depths, leads, lifts, spans, sizes, shapes, locations, etc. unless a distinction has been included in the very Schedule.
5. The Specifications and the Schedules may have been divided into various sub-heads for convenience only. This does not limit applicability of one to the other nor does it absolve the Contractor of his responsibility to complete any trade/item of work as reasonably inferred from one or more of such sub-heads.
6. The Schedule of Quantities is not necessarily based on "Schedule of Rates - Delhi 2003 or any of its later/earlier versions. Hence the Schedule of Quantities shall be read and construed according to explanations given herein and intentions gathered therefrom. A mere parallel drawn from the said Schedule of Rates shall therefore not form a basis for a variation and, or additional payment.
7. All work under this contract is deemed to be performed above subsoil water level. However, removal of water collected from rains and the like shall be treated as part of contractual risk/obligation.
8. Screws, bolts, nuts, washers, hold fasts, lugs, anchors, clamps, plugs, suspenders, brackets, straps and fasteners of the like are deemed to be included in the rates of various items unless the Schedule of Quantities expressed a different intention.
9. Resetting any displacements, making good holes/chases and such other incidental jobs are included in rates of respective items for which these are required.
2. Concrete Work (Plain or Reinforced):
 1. Centering, shuttering, staging, form work, strutting, propping (their provision and removal) shall not be paid for separately unless exclusion thereof is specifically described in the item.
 2. The rates of concrete work do not include rendering or plastering but hacking and preparing surface for receiving the finishes shall be done as early as possible.

3. Any chamfers, grooves, drips, etc. which are generally and customarily required shall be provided in the concrete work integrally or otherwise without extra charges as directed by the Architect.

3. Steel Work:

3.1 The measurement of railing shall be the length of top wood/steel section as per situation along the centre line.

3.2 Painting in relation to steel work shall be two or more coats of approved synthetic enamel plus a coat or primer including preparation of surfaces, fillers etc. The priming coat shall be measured & paid separately in the relevant item.

3.3 Circular work, bends, stepping are not payable extra.

3.4 The steel work in single sections of R.S. Joists, flats, Tees Angles fixed independently with or without connecting plate, is described in these clauses.

(a) Fabrication

The steel section as specified shall be straightened and cut square to correct lengths and measured with a steel tape. The cut ends exposed to view shall be finished smooth. No two pieces shall be welded or otherwise jointed to make up the required length of a member.

All straightening and shaping to form, shall be done by pressure. Bending or cutting shall be carried out in such a manner as not to impair the strength of the metal.

(b) Painting

All surfaces which are to be painted, oiled or otherwise treated shall be dry and thoroughly cleaned to remove all loose rust. Surfaces not in contact but inaccessible after shop assembly, shall receive the full specified protective treatment before assembly. This does not apply to the interior of sealed hollow sections. Part to be encased in concrete shall not be painted or oiled. A priming coat of approved steel primer i.e. Red Oxide Zinc chrome primer conforming to IS: 2074 shall be applied before any member of steel structure are placed in position or taken out of workshop.

(c) Welding

Welding shall generally be done by electric arc process as per IS: 816 and IS: 823. The electric arc method is usually adopted and is economical. Where electricity for public is not available generators shall be arranged by the contractor at his own cost unless otherwise specified. Gas welding shall only be resorted to using oxyacetylene flame with specific approval of the Engineer-in-charge. Gas welding shall not be permitted for structural steel work. Gas welding requires heating of the members to be welded along with the welding rod and is likely to create temperature stresses in the welded members. Precautions shall therefore be taken to avoid distortion of the members due to these temperatures stresses.

The work shall be done as shown in the shop drawings which should clearly indicate various details of the joints to be welded, type of welds, shop and site welds as well as the types of electrodes to be used. Symbol for welding on plane and shops drawings shall be according to IS: 813.

As far as possible every efforts shall be made to limit the welding that must be done after the structure is erected so as to avoid the improper welding that is likely to be done due to heights and difficult positions on scaffolding etc. apart from the aspect of economy. The maximum dia of electrodes for welding any work shall be as per IS: 814 and appendix B' of IS: 823. Joint surfaces which are to be welded together shall be free from loose mill scale, rust, paint, grease or other foreign matter, which adversely affect the quality of weld and workmanship.

4. Flooring:

4.1 The rates of cement concrete flooring and marble chips flooring are exclusive of dividing strips for formation of panels.

- 4.2 Borders, margins, bands, nosings, etc. are not payable extra. Treads shall be measured as floors, risers as skirtings. However, areas of returns (finished thickness), nosing shall be added respective items.
- 4.3 No extra shall be paid for cutting of glazed tiles or for wastage thereof.
- 4.4 Marble/Kota stone slabs shall be of selected quality, hard & sound and shall be approved by the Architects. The thickness of the slabs shall be as specified in the description of the item. Tolerance of 2mm shall be allowed for the thickness. In respect of length & breadth of slabs (Where flooring to be laid) a tolerance of 5mm shall be allowed. Every slab shall be cut to the required size and shape, top waviness shall be removed, the sides (edges) shall be removed, the sides (edges) shall be table rubbed with coarse sand or machine rubbed before paving. All angles of the tiles shall be true equal and free from chipping and the surface shall be true and plane.
- 4.5 Marble slab/kota slab shall be cleaned, wetted and mopped before laying.
- 4.6 Polishing shall be done by machine in four different courses. Ist course shall be of rubbing with carborundum stone No. 60, the second with No. 120, and the third with No. 320 to get even and smooth surface without pinholes. Where ever use of machine is not feasible to work, polishing shall be done by hand with No. 60, No. 80 and with No. 120 carborundum stone respectively. Lastly oxalic acid shall be dusted over the surface @ 33 gm per square meter sprinkled with water and rubbed hard with namdah block (pad of wooden rags).
- 4.7 Marble chips, kota stone, marble (all floors, skirting, risers, dado, counter tops, treads) shall finally be polished with approved floor wax polish as directed at no extra cost.
- 4.8 Marble (counter tops) shall be of full width and in single piece upto length of 1.5m. Granite for name-plate shall be in one single piece.
5. Finishing:
1. Items of plastering apply to all locations including rough sides of walls, curved surfaces, all heights, etc. without limiting generally of para 1.4.
 2. Preparation of surfaces including raking out joints, hacking, brushing, watering, etc. is included.
 3. Drip mouldings shall not be payable extra.
 4. Grooves shall be provided in plaster as directed by Architect at corners of ceiling slabs around the columns & beams at no extra cost.
 5. Strips of G.I. chicken mesh 250mm wide shall be provided in plaster at all junctions (which are flush) between masonry/columns, masonry/beams.
6. Wood Work:
- 6.1 The areas of doors & windows shutters shall be measured to the nearest cm in closed position covering the rebates of the frame but excluding the gap between the shutter and the frame. Over lap of two shutters shall not be measured. All work shall be measured for finished dimensions. No allowance shall be made for dimensions supplied beyond those specified. Length of each piece shall be measured overall nearest to 1 cm, so as to include projections for tenons, scraves or mitres, width and thickness shall be measured to the nearest mm.
- 6.2 Where painting, polishing has been included in the item the same shall be executed as per Architect's directions. Painting shall be two or more coats of approved synthetic enamel plus a coat of fire resistant primer to wood work as approved by Architect and shall conform to BS-476 part 7 for class I surface spread of flame. Preparations of surfaces, fillars, etc. are included. This primer shall also be applied before polishing (i.e. French Spirit Polish). The fire resistant primer shall be measured & paid separately in the relevant item.
- 6.3 All flush door shutters shall have teak lipping on all edges as directed with extra thickness of lipping of meeting edges of double shutter doors.

Glasses 5.5mm thick or 4mm thick shall respectively weigh not less than 13.75 Kg/sqm. Or 10 Kg/sqm.

Bends, stepping and circular shapes in railings are integral part of the rate.

The widths of various rails & styles shall be as described in the items or shown in the drawing.

All aluminum section & fittings used shall be ISI marked. All screws for fixing of fittings/fixtures shall be of matching finish.

In case of composite units (M.S. frame + teak wood shutter) the hold fasts shall be added or fixed with counter sunk machine screws. Also the M.S. frames shall have necessary holes and other arrangement for receiving/fixing of fittings

7. Plaster of Paris Punning (P. O. P.)

If the plaster surface is to be finished with plaster of paris punning, the surface shall be combed slightly with the wire brushes or nails before it is completely set to form key for plaster of Paris punning. The surface shall be thoroughly cleaned of dust then only damped but not soaked before the application of plaster of paris punning. The Gypsum for preparing punning shall be approved quality. It shall be dry and free from lumps and shall be suitably packed in watertight bags or containers. Paste shall be prepared by adding required quantum of water and it shall be used before it sets. No dropping paste shall be used in the work. Punning shall be applied to the prepared surface with steel trowel to a thickness required to make the surface produce perfectly smooth and even surface working from top to bottom. It shall then be sand papered to give a smooth and even surface. Any unevenness shall be made good by applying putty, made of plaster of paris mixed with water, then sand papering the same after it is dry. Pilling in plaster shall be made good with plaster of paris mixed with colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. The surface shall be allowed to dry thoroughly before the regular coat of paint is applied. The measurement shall be in square metre.

8. Plastic Emulsion Paint:

Plastic emulsion paint shall be of approved manufacturer and shall generally conform to IS-5411 (Part-I)-1969.

The colour and shade of the emulsion shall be got approved by the Architect. Double scaffolding shall be used, ladden if used shall be tied with old gunny bags at top to prevent damage or scratches to the walls. The instructions of the manufacturer shall be followed, in application of priming and finishing coats. Turpentine or any other solvent shall not be used for thinning the paint.

Minimum 3 coats of paint shall be applied inclusive of primer coat. If a proper and even surface is not obtained to the satisfaction of the Architects in 3 coats, Contract shall carry out additional coats of painting to approval at his expenses. Care shall be taken that dust or other foreign material does not settle or disfigure the various coats. The measurement shall be in square metre.

9. Miscellaneous:

The work of cupboard/cabinets shall be done as per drawings. The depth of cupboards shall be as shown in drawings. The work includes holdfasts and other accessories usually required for complete installation. All inner surfaces shall be painted & outer face polished as per Architects approval. All exposed cut ends of boards shall be provided with hardwood lippings. Kail wood to be used shall be of the best available quality. The joints in cement concrete pavements/roads shall be formed as per design and pattern. The joints shall be cleaned and neatly filled with 'A' grade sealing compound. Side kerbs shall be made in situ to design and volume paid for in the same item. Required side forms shall not be paid separately.

For whitewashing, colour washing, distempering on sand faced plaster or on rough cast plaster with stone aggregate upto 10mm, only flat single surface will be measured and paid.

In the case of R.C.C. Jallies upto 50mm thick only single flat surface will be considered for each side of painting.

SPECIFICATIONS FOR SERVICES

1. General

1.1 The drawings for services are diagrammatic but shall be followed as closely as actual construction permits. Any deviations from the drawings shall be in conformity with architectural and structural drawings. The dimensions designated by the manufacturers shall take precedence over the drawings.

2. At completion of work the Contractor shall submit one set of tracings and two sets of prints of "As-Built-Drawings". These drawings shall, among others, include invert levels, pipe runs, diameters, location of valves, access panels, layout of equipment, piping connections and such other information for maintenance & future extensions. Guarantees given by manufacturers shall be assigned to the Employer along with names & addresses of manufacturers, suppliers and information about spare parts.

3. All site test shall be carried out with prior intimation to the Bank Engineer / Architect. All defects shall be rectified and tests conducted again to the satisfaction of the Bank Engineer / Architect. In addition to the test required by the specifications, the Contractor shall also conduct tests required by the Architect and by the Municipal or other Authorities.

4. All work shall be executed by competent and licensed persons. The contractor shall maintain liaison with Municipal and other controlling Authorities. He shall obtain their approvals and certificates as required by the bye - laws at appropriate stages.

5. No cutting / chasing shall be done in load bearing structural members without prior approval of the Asstt. Engineer. Sleeves and openings shall be provided during the progress of construction in preference to cutting at later date.

6. The Architect may require typical mock up(s) to be installed in advance for approval. Undamaged materials from the mock up shall be allowed to be reused in the work.

7. Unless otherwise described in the item CI / SCI pipes and fittings shall be a spigot and socket type.

8. G.I. pipe spouts shall be paid as per item of G.I. pipes (internal work). Cutting and making good is included. The free ends may be skew-cut.

9. Wherever use of G.I. pipes is called for the same shall be medium class (class - B)

2. Materials :

2.1 The materials shall conform to the specifications and in absence thereof to Indian Standards. The products should bear the ISI Mark.

2.2 The makes of materials for use in this work are broadly approved as per list given below. The Contractor shall, however, get particular makes and samples approved before ordering:

2.3 Notwithstanding any interim or final approval the Contractor remains responsible for satisfactory performance of all fittings & fixtures. The liability of the Contractor is not limited by any approval of the make of materials.

2.4 The item rate of mirror includes extra packing piece of AC plain sheet, where required due to offset between plaster & glazed tiles surface.

3. Testing

1. The sand cast iron soil, waste and vent pipes and fittings including joints shall be tested by pumping smoke into the pipe at the lowest end.
2. All G.I pipes and fittings including joints shall be tested to hydraulic pressure of 6 kg / cm² (60 meters) avoiding water hammer. The test pump having been stopped the test pressure should maintain without loss for at least half an hour. The pipes and fittings shall be tested in sections as the work of laying proceeds keeping the joints exposed for inspection during the testing.
3. All stone ware pipes shall be tested with water pressure of 1.5m head of water at the highest point of the section under test.

TECHNICAL SPECIFICATION FOR SANITARY & PLUMBING WORKS

Sanitary Ware & Allied Fittings:

General:

All sanitary fixtures and their allied fittings should be of best quality, manufactured by reputed manufacturer. These should be approved by the consultant / IIBF representative before use.

- Squatting pattern W.C. pan (Orissa Pattern Closets)

The water closets shall be of vitreous china of specified size and pattern, integral flushing rim. It shall have the flushing inlet at the back. The Orissa closets should be I.S.I marked of approved quality conforming to IS -2556.

The squatting type Indian water closets (Orissa Closet) shall be sunk in floor sloped towards the pan in a workmanship like manner. The closet shall be fixed on a proper cement concrete base of 1:3:6 proportion, taking care that the cushion is uniform and even without closet, to receive the specified thickness of the floor finishing. The joint between the closet and the PVC. Trap shall be made with W.C. ring and rubbed lubricant and shall be of leak proof.

- Flushing Cistern:

The flushing of the Indian water closet (Orissa closet) shall be done polystyrene high level valve less symphonic flushing cistern (PVC low level cistern) of approved brand and quality I.S.I. marked and capacity as specified. The connection between the cistern and water closet shall be made by 32 mm dia G.I. flush pipe, made from G.I. pipe (Light quality) or 32 mm dia. PVC pipe as specified in the tender schedule. The flush pipe with an offset should be fixed to wall using C.I. holder bat clamps. The capacity of the cistern should be 10 ltrs. As per I.S.S. the cistern shall be fixed on cast iron or rolled steel /PVC cantilever brackets (built in type) which shall be firmly embedded screwed in the wall, with C.C. M20. the cistern shall be provided with 20mm dia PVC. Overflow pipe with fittings which shall terminate into mosquito proof coupling secured in a manner that will permit it to be readily cleaned or renewed.

- Wash Hand Basin:

The wash hand basin shall be of the white vitreous china of approved quality, make and brand I.S.I. marked. It shall be one piece construction with an integral combined overflow. The size of the basin shall be as specified. Each basin shall be provided with one 15 mm dia C.P. Brass pillar Tap, 32 mm dia C.P. waste C.P. chain and rubber plug, unions, joints, C.P. Bottle trap casted PVC waste pipe complete in all respects of approved quality.

The basin shall be supported on a pair of R.S. or C.I. cantilever brackets (built in type) and embedded and fixed in wall with cement concrete, M20. these brackets shall be painted to the required shade with two coats of synthetic enamel paint over coat of priming. The waste of the basin shall discharge into a floor trap of channel through bottle traps PVC waste pipe as specified. One 32 mm dia C.P. bottle trap is to be fixed to the waste of the basin, & the outlet of the bottle trap is to be connected to the waste pipe to discharge the waste to the aforesaid floor trap. The inlet connection to the basin shall be made with 450 mm long 15mm diameter heavy type P.V.C. connection pipe.

- Standing Urinals:

The urinals shall be flat pattern lipped front basin of required dimension of the white vitreous china and one piece construction with internal flushing box, rim of an approved make and brand as specified. It shall be fixed in the position by using wood unplug embedded in the wall with screws of proper size. Each urinal shall be connected to a 40 mm dia PVC waste pipe which shall discharge into a channel or floor trap. The lip of urinal shall be kept at 525 mm from floor level, while fixing the urinal on the wall.

Where no of urinals are fixed in a line, the distance between the center to center of each urinal shall be kept 750mm and each urinal should be separated from one to other by a partition plate. The center to center partition plates shall be kept 750 mm.

The partition plates shall be of one piece Kota stone plates, cut to size or partition wall and front corners rounded. The partition plates are embedded in wall with cement concrete and finished smooth. The bottom of the partition plates should be kept 500 mm above floor level and top should be kept at 1250 mm above floor level. The plates should project 600mm from wall surface. The width of the plates should be embedded inside the wall and should not be less than 100 mm. The thickness of the plates shall be minimum of 25 mm to 32 mm. Thickness of partition wall should be limited to 150 mm including smooth surface finishing.

For flushing the urinals each urinal shall be, connected with one 20 mm dia G.I. Pipe (Medium class). One end of each of this pipe 15 mm PVC connection pipe shall be inserted into the inlet of the Urinal and jointed with jute and putty where as the other end is connected either with a tee or bend with water pipe line fixed on the wall horizontal above the urinals. In each 20 mm dia flush pipe one 20 mm dia - gun-metal gate valve angle stopcock to be fixed. By opening this valve, the water will flow to the rims of urinal through the inlet pipe and flush the urinal. After flush, the valve can be closed to avoid wastage of water. One 40 mm dia P.V.C. waste pipe shall be connected to the waste of each urinal, to discharge the waste into the channel or trap. One end of this waste pipe shall be made a cup size to fit into the projected waste and tightened with screws and waste clamp.

- Squatting Urinal Plates:

The urinal plates shall be of white glazed vitreous china with integral flushing rim of size 450 mm x 350 mm of approved make and brand as specified. There shall be white vitreous channel with stop and outlet pieces in the front. These plates shall be fixed on C.C. at 75 mm to 100 mm above floor level.

For flushing arrangement, one 25 mm dia G.I. common water pipeline (minimum size) shall be fixed on the wall parallel to floor. For each urinal one 20mm dia. G.I. Branch pipe shall be taken down upto 12mm from floor level just at the center of each plate, in which one 20 mm dia gate valves is fixed at 1500 mm above floor level. At 1200m height, the 20mm dia flash pipe shall be divided into two branches with a tee and fixed horizontal. 300mm on either side and then with the help of elbows, both the branches shall be taken downward and connected to the inlets of the urinal plates at floor level. By operating the valve as above, the water will rush into the rims of the urinal plate and flush it.

Where there are number of urinals fixed in a line, each urinal should be separated by a partition plate fixed in the centre of two urinal plates. The centre to centre distance of the partition plates shall be kept 750mm minimum.

The partition plates shall be of one piece kota stone plate, 25 mm to 52 mm thick, cut to sizes and front corners rounded. The plates are embedded in wall with cement concrete and finished smooth. The bottom of the partition plates wall shall be kept flushed to urinal top level, the top level shall be kept at 1200 mm from the urinal plate top and the projection from the wall shall be 600 mm. the width of the plate to be embedded inside the wall should not be less than 100mm.

P.V.C. (S.W.R.) AND P.V.C. (Rigid) Pipes and Fittings:

General

The PVC (SWR) and PVC(Rigid), soil waste and vent pipes (spigot and socket, and couples joints), shall be of make and brand as specified (under specification of materials) conforming to I.S.S., B.S.S. and DIN are to be used.

The main specification of PVC, soil and waste pipes and fittings are as below.

- a. Materials - unplasticised Poly vinyl Chloride (UPVC)
- b. Color -Grey.
- c. Dimensions -
 - i. diameter - fittings - 75mm. 110mm / 63 mm and 634mm.
 - ii. Pipes -75mm, 110mm, in lengths of 3 or 6 mtr.

d) Wall thickness - fittings - minimum 3.2 mm at any point

Pipes - as per application.

For rain water - 75mm - 1.8 to 2.2 mm

110mm - 2.5 to 3 mm

Waste and soil :- 75mm - 1.8 to 2.2 mm

110mm - 2.5 to 3 mm

Underground drainage with

Light / Nil traffics - 110 mm - 2.5 to 3 mm

Under ground Drainage with

Heavy traffic - 110mm -3.7 to 4.3 mm.

e) Standards confirming to attributes

Attributes Confirms to standard No.

i. fittings and wall thickness - B.S. 4514. DIN 10531 DIN 10532, I.S. 7834 -

PVC(Rigid)

ii. Pipe wall thickness I.S. 4985

iii. Rubber ring IS 5382.

iv. Fittings Dimensions DIN 19531 I.P.V.C.

DIN19534 I (SWR)

IS -7834 PVC (Rigid)

v. Pipe dimensions IS -4985

Leaving instructions and joint procedure

i. Jointing a PVC (SWR) pipes and fittings.

Clean the outside of the pipes spigot and the inside of the sealing groove of the flitting.

Apply the rubber lubricant, to the spigot end, sealing ring and pass the spigot and into the socket, containing sealing ring, until fully home. Mark the position of the socket edge with the pencil on the pipe and then withdraw the pipe from the socket by approx 10 mm towards thermal expansion gap.

ii. Fixing of the pipes and fittings on wall surface :

PVC pipes both (SWR) and (Rigid), fixed on wall surface, are to be supported by PVC pipe clips specially made for these pipes. With horizontal runs. The pipe clips should be spaced at intervals of more than 10 times the outside diameter of the pipes. In verticals of one meter to a maximum of two meters according to pipe diameter or wherever specified.

iii. Jointing of P.V.C. (Rigid) pipe fittings.

Clean the outside of the pipes and inside of the socket of a fitting or the inside of the couplers (where 2 plain ended pipes are jointed) of. Apply solvent cement solution, evenly and smoothly on the outer surface of the pipe end and inside surface of either the coupler or the socket and pass the pipe end into the socket of the fittings, up to the half depth on the end of one pipe and the outer half of the coupler should be pushed to the end other pipe and thus, both pipes are jointed.

iv. Fixing of P.V.C. pipes & fittings through holes of walls or chaja or roofs etc.

The wall / concrete slots should allow for a stress free installation, pipes and fittings to be inserted into the slots, without a cement base, have to be applied first with a thin coat of P.V.C. solvent cement, followed by sprinkling of dry sand (medium size). Allow it to dry. This process gives a sound base for cement concrete fixation, around the pipes / fittings while mending the damages.

v. Antisiphonage Pipes

All the Antisiphonage pipes and fittings to be used are of 63 mm. If these are not available under the items of P.V.C. (SWR) materials, 63mm pipes and fittings, manufactured under P.V.C.(Rigid) material can be used, since the raw materials for both is same.

vi. Installation of Traps

All traps should have a minimum water seal of 60mm as per I.S. 5329 AND i.s. 2552(Part – XIII). Where anti-syphonage connection is required, the traps to be supplied and used should have a 50 mm Antisyphonage vent horn on the outlet side. All the traps used with the closets, should be of the size 125mm x 110mm i.e. inlet (socket end) of 125mm and outlet (spigot end) of 110mm only.

vii. Installation of water closet

Determine the correct location of the P/S trap and set it on a firm base, relative to the floor finish by pouring concrete around on a slab. Bedding can be ensured that the traps outlet is left clear of concrete. Place the W.C. connector ring to the locked pipe of 125/110 mm R/S trap. Apply rubber lubricants on W.C. connector ring as well as outer side of water closet (connection point) and now complete the joint by pushing the W.C. to home of 125mm socket of the trap.

viii. P.V.C.(Rigid) pipes and Fittings

63mm (O.D.) P.V.C. Pipes to be used for these works either in Antisyphonage system or elsewhere, should be of "Quick Fit" pipes Class 2 (4kg F/cm²), quick Fit. Pipes have one end socketted.

The P.V.C.(rigid) fittings, such as 63 mm elbow, 63 mm equal tee 110 x 63 mm reducer etc. used in the work, should be of injection moulded fittings.

ix. One jointing rubber ring will be available, with each P.V.C.(SWR) pipe and fitting and hence, the cost of the ring will not be added in the joint.

All pipes shall be measured net / length as laid or fixed and shall be measured over all fittings such as bends junctions traps etc. the length shall be taken along the centerline of the pipes and fittings. Fittings will be counted extra over.

x. For fixing and painting, the pipe shall be tested hydraulically to a pressure 0.4Kg/cm² for pipes under I.S. 1729 and at a pressure 0.7 Kg. Cm² for pipes under I.S. 3989 without showing any sign of leakage, sweating of or other defect of any kind. The pressure should be applied internally and shall be maintained for not less than 15 seconds.

WATER SUPPLY PIPES AND FITTINGS

Materials

P.V.C pipes of approved quality conforming to IS 1239& bearing ISI Marks, manufactured by reputed firms and approved brands as specified.

- Laying of Pipes.

The layout of the mains and service pipe set etc. will be done in accordance with the drawings. The contractor is to mark out the exact position of the pipes and fittings at site and take approval of the consultant / Engineer in –charge, before taking up the work. Where the pipes are laid, underground these must not be laid less than 450 mm below ground level and coated with one coat of approved black bituminous paint. For laying the G.I. Pipes and Fittings below ground level, the width and the depth of the trenches for different dimensions of the pipes shall be given as below:

Dia of pipe	Width of Trench	Depth of Trench
15mm to 50 mm	300 mm	600mm
65mm to 100 mm	450mm	750mm

The pipes shall be laid on a layer of 75 mm thick sand and filled up with sand and filled up with sand up to 75 mm above pipes and the remaining portion of the trench shall then be filled up with excavated earth with proper ramming as described in "Excavation and refilling ". The surplus earth shall be disposed of as directed.

Thrust or anchor blocks of cement concrete 1:2:4 in hard granite chips shall be constructed on all `bends or branches to transmit the hydraulic pressure without impairing the ground and spreading it over a sufficient area. Pipes shall not be laid to pass through manholes, catch pit, drain. Where it is unavoidable the pipes shall be carried in sleeve pipes of M.S. /

G.I. as approved by the consultant / Engineer-in-charge. The rates should include such a situation.

Where pipes run along walls, the same are to be fixed to the wall with holder bat clamps / M.S. Hooks as below:

Dia of pipe in mm	15	20	25	32	40	50
Horizontal Line	2m	2.5m	2.50m	2.503m	3m	3m
Vertical Line	2.5m	3m	3m	3m	3.5m	3.5m

Where the pipes are passing through the R.C.C. / Masonry wall / Column / beam of Pillars, these must pass through the appropriate higher sizes of C.I. / G.I. Sleeve Pipes and are to be included in the rates.

In case the Pipes are embedded in walls and floors it should be painted with one coat of anticorrosive paint of approved quality.

All pipes should be fixed horizontal and vertical. For taking the pipes through the walls and floors and roof slabs etc. the holes shall be made by filling with Chisel or jumper and not by dismantling the brick work of concrete. After fixing, the holes shall be made good with cement concrete 1:2:4 and properly finished with C. Plaster 1:4 to match the adjacent surface.

Union Nuts are to be provided in each of the Vertical riser or drop on and from G.I. Tank and near the Valve and as and where necessary.

The long screw fittings of 3 Mtrs. For long horizontal lines and inside the lavatory / kitchen etc.,

After laying and jointing the Pipes and fittings shall be inspected under working condition of pressure and flow. Any joint found leaking pipes should be removed and replaced without extra cost. The pipes and fittings after they are laid shall be tested to hydraulic pressure of 6 Kg. Cm². the test pressure should maintain without loss of for atleast half an hour.

- Painting

On completion of the test, the exposed pipes and fittings are to be painted with two coats of synthetic enamel paint of approved colour and brand over a coat of priming.

- Measurement

The length shall be measured in running meter correct to centimeter for the finished work, which shall include the pipes and fittings such as Bends, Tees, Elbows etc., but excludes Brass of Gun-metal fixture like Tap, Cocks, Valves, PVC connection Pipes etc.

- Ball Valve

The ball valve shall be high class and shall confirm to I:S 1703. The nominal size of ball valve shall be that corresponding to the size of pipe for which it is used. The ball valve shall be of brass of gun-metal and the float for low pressure in Polyethylene and for high pressure in copper.

Each and every ball valve while in closed position shall withstand an internally applied hydraulic pressure of 20 kg / Cm² for a minimum period of two minutes without leakage or sweating.

Every high pressure ball valve when assemble in working condition, with the float immersed to not more than half its volume shall remain closed against a test pressure of 10.5 Kg. / Cm².

Polyethylene floats shall be watertight and non-absorbent and shall not contaminate water and with no jointing adhesive jointing parts.

The minimum thickness of the copper sheet used for making copper floats shall be of 0.45 mm. The thickness of materials of the float shall be uniform throughout.

- Ferule:

The ferrules for connection with C.I. Main shall generally confirm to I.S 2692 and shall be of nominal bore as specified. The ferrule shall be fitted with 3 screw and plug or valve capable or complete cutting off the supply to the connected pipe as and when required. For fixing the ferrule the C.I. main shall be drilled and tapped during non-supply hour at 45o to the connected pipe as and when required. The ferrule must be so fitted that no portion of the sunk shall be left projecting with in the main on which it is fitted. After the ferrule is connected, one C.I. bell mouth cover or with bricks (as specified) shall be kept over the ferrule to cover the ferrule to protect it and the cost thereof is to be included in the item, even if there is not mention.

- Non - return Valve (Check Valves)

The Non-return valve shall be of Brass or Gun-Metal and shall be of horizontal or vertical flow type and of the size as specified and confirm to I:S 7810 and I:S 778. The approximate weight of the valves are given below:

Dia in mm Horizontal type in Kg. Vertical type in Kg.

15	0.30	0.25
20	0.55	0.25
25	0.90	0.75
32	1.25	0.90
40	1.70	1.20
50	2.90	1.45
65	5.25	2.15
80	7.70	4.10

Tolerance 5%

- Foot Valve

Foot valve is generally placed at the lower end of the suction pipe of the centrifugal pump to prevent the suction pipe from emptying. Vertical non-return valve may also be fixed in place of foot valve.

The foot valve shall confirm to IS: 038.

Water meters (Domestic Type)

Water meter up to 50mm nominal size shall confirm to I:S 779. The meter body shall be bronze / Gun-Metal and marked to read in liters complete with registration box and lid. The water meters shall be provided with Strainers. Strainers shall be of material which is not susceptible to electrolyte, clean and shall be fitted on the inlet side of water meter. It shall be possible to remove and clean the strainer and not permit disturbing the registration box. The offer should include the same. The water meters shall bear ISI Mark.

- Bibcock and Stop Cock

These shall conform to I:S 781 bear ISI Mark. The Bib cock is a draw off tap with a horizontal inlet and free outlet and stopcock is a valve with a suitable means of connection for insertion in a pipeline for controlling or stopping the flow. This shall be of screw down type. The cocks shall open in anti-clockwise direction. The stopcocks should be C.P. concealed stopcocks and C.P. angle valves type as specified in tender schedule. Bib cocks should be also C.P. Brass hid cocks.

- Full way Valve (Brass)

Full way valve is a valve with suitable means of connection for insertion in a pipeline for controlling or stepping the flow. The valve shall be of brass fitted with a cast-iron wheel and shall be of gate valve type confirming to I:S 780 brass rod latest one, opening full way and of the size as specified.

The approximate weight of the valves are indicated below for guidance.

Dia in mm Flanged End valves in Kg. Screwed End valve in Kg.

15	1.021	0.567
20	1.503	0.680

25 2.498 1.077
32 5.232 1.559
40 6.082 2.268
50 6.691 3.232
65 10.149 6.840
80 13.381 8.845

- Gun-Metal Full way Valve

This shall be of the Gun-Metal fitted with wheel and shall be of Gate-Valve type opening full way. This shall confirm to I:S 778. Class I. The valves should bear I.S.I. Mark.

TECHNICAL SPECIFICATION FOR STONE WARE PIPE

- Stone ware pipes (Materials)

The S.W. Pipes and Fittings should be of Grade 'A' confirming to I :S 651/1965. The pipes shall be sound free from visible defects such as fire crack or hair crack and flaw or blister. The pipes shall give a sharp clear line when struck with a light hammer and should be perfectly salt glazed.

Pipe in mm. Thickness of the Weight of Each

_____ Barrel in mm. Pipe in Kg.

100 12 14
150 16 22
200 17 33
230 19 44
250 20 52
300 25 79
350 30 100
400 35 125
450 38 147

The length of pipes is 600 mm exclusive of the internal depth of Socket.

- Excavation of Trench for Laying Sewer Pipes:

The trenches for the pipes shall be excavated to the lines and level as directed. The bed of the trench shall have to be evenly dressed throughout from one change of grade to the next. The gradient is to stout by means of sight rails and boeing rods and the required depth the excavated at any point. The depth of the trench shall not be less than one meter, measured from top of the pipe to the surface of the ground under roads and not less than 0.75 mtr. elsewhere. The width of the trench shall be the nominal diameter of the pipe plus 400 mm. The bed of the trench if in soft or made up earth, shall be well watered and rammed before laying the pipes and the depressions if any shall be properly filled with sand and consolidated in 200 mm layer. Depending on soil condition piling way even be necessary if so desired by the consultant / Engineer-in-charge. If rock is met with, it shall be removed 150 mm below the level of the pipe and the trench will be refilled with sand and consolidated.

The excavated materials shall not be placed within one mtr. Or half of the depth of the trench whichever is greater, from the edge of the trench.

The trench shall be kept from water, shoring and shuttering shall be provided wherever required. Excavation below water table shall be done after dewatering the trenches.

After the excavation of the trench is completed foundation of cement concrete M20 in hard granite metal (size 25 to 40 mm) shall be laid with proper level all along under the length of the pipe with hunching or all around concrete as per drawing.

Laying, jointing, hunching of the pipes and fittings. Drain Pipes(S.W. Pipes and other pipes used for drain and sewer) shall be laid in straight lines and to the even gradients as shown in the layout drawings.

The socket end of the pipes shall face upstream. Adequate care shall be exercised in setting out and determining the level of the pipes and the Contractor shall provide suitable instruments, templates, sight rails, boning rods and other equipments necessary for the purpose. In the case of pipes with joints to be made with loose collars. The collars shall be slipped on before the next pipe is laid. In those joints a tight ring of twisted jute tarred soaked in cement slurry filling to ensure proper alignment and prevent. Cement entering the pipes. Cement compound joints is to be finished with proportion 1:1 with 45° beveling. The joints are to be kept wet with wet bag until the same are properly set with beveling. The cement mortar joints shall be cured at least for 7 (seven) days.

In the case of S.W. Pipe joints (socket and Spigot), they should be caulked first with tarred jute (spun) of required diameter, almost quarter depth of the socket, after which cement mortar 1:3 is pushed in with wooden chisel and finishing beveled at outside at 45°. Instead of jute of hemp rubber gasket of proper size may also be used. The whole joint must be cured for not less than three days. In case of pipes less than 250 mm dia, joints should be made at ground level with three pipes at a time and for larger ones two pipes at a time and after curing they should be soled in foundation with the help of the ropes. All pipes should be properly hunched with cement concrete 1:3:6 with hard granite metal of size 25 mm to 40 mm or otherwise specified as shown in the drawing. Where the pipes are crossing the drain or road, all -round concrete 1:3:6 with H.G. Metal of size 25 mm to 40 mm is to be done to 150 mm thick over the barrel of the pipe.

The whole of the drain work shall be tested when laid, and at the completion of the contract, to the satisfaction of the consultant / Engineer-in-charge and shall be retested if necessary, until found satisfactory. The test shall be made by means of water under pressure at the highest point of the section under test and providing an air pipe at the lower end of the line. Maximum head of 5 (five) feet (1.5 Mtr) must be maintained.

- Excavation and refilling

Excavation for drain and pipe trenches shall be straight and to the correct depth and gradient. The trench bottom shall be of sufficient width to allow working space for pipe jointing.

Excavated materials shall be damped away from the side as directed by Engineer-in-charge. Suitable precautions are to be taken to prevent inflow of water into the excavated area, during construction.

The Contractor at his own expense shall pump out or otherwise remove any or all water, which during the continuance of contract, may be found in the excavated trenches to keep the trench clear of water during the work under progress.

No excavation for pipe line shall be filled and line covered, until the line therein has been passed and tested.

- Buried Services

All pipes, cable mains and other services exposed by the excavations shall be effectively supported by timbering or other means for which no extra payment will be allowed. The Contractor shall be responsible for any damage occurring to buried services and make good the same at his own cost to the satisfaction of the Consultant / Engineer-in-charge.

- Trench condition

Where a trench is excavated and refilled after laying the pipe, settlement of the earth in the refilled trench take place. The filling above the top of pipe, settles relatively, more than the sides of the trench, thereby developing frictional resistance. The contractor is required to take special precaution against this while refilling the trenches, procedure for back filling as stipulated earlier should be strictly followed.

- Inspection chambers / Manholes

At every change of alignment, gradient or diameter of a drain, there shall be a manhole or inspection chamber. The maximum distance between Manhole Chamber shall be 30 Mtrs. For the lines laid straight.

All Manholes and inspection chambers shall have internal dimensions as shown on drawing and B.O.S. the depth of invert shall be according to the gradient.

The foundation for Manhole shall be 150 mm thick and with cement concrete M20 in hard granite well graded metal of 25 mm to 40 mm size. The concrete shall project 75 mm beyond the external faces of the brick work.

The brick masonry shall be done in cement mortar in the proportion of 1:4 and thickness of the brick wall should be 250 mm thick upto 1200 mm depth from Ground Level and beyond that the wall thickness shall be maintained 375 mm. Both the inside and outside surface of the walls of the chamber, shall be finished with cement plaster 1:4 - In addition to this, the inside surface should also be provided with cement punning.

On the top of base slab channeling on C.C. M20 with granite chips is to be done keeping the diameter equal to the dia of drain pipe and depth equal to 1/4th of the dia of the pipe. The channel, should be done longitudinally at the center, connecting both the ends of the pipe. The channel is to be hunched up with concrete M20 with hard granite chips of size 20 mm and below) sloping upwards from the edge of channel to meet the side of chamber at gradient of 1:6. The channel and benching are to be finished smooth and cement mortar 1:4 and punning.

Sewers of un-equal sectional area and branch sewers shall not be jointed at the same invert in a Manhole inspection chamber unless it is unavoidable. The branch sewers should deliver sewage in the Manhole in the direction of main flow and the junction must be made with care so that the flow in the main is not impeded. Channels for drains coming from the side of the Manhole chamber shall be curved to meet the main drainage channels.

The Manhole and Inspection Chambers shall be covered with R.C.C. cover slab or thickness 100 mm to 150 mm according to the requirement at site. One C.I. Manhole cover of diameter and weight as stipulated in the tender schedule shall be fixed, on the cover slab. Unless otherwise mentioned the C.I. cover and Frames and shall conform to I:S 1726. Heavy duty covers etc., under heavy vehicular traffic condition and capable of bearing wheel loads up to 11.25 Tor are to be used and medium duty under light type wheel traffic loads and light duty for domestic premises are to be used. Covers and Frames shall be clearly cast, double water seal type and they shall be free from air and sand holes. The cover shall be gas tight and water tight with proper water-seal. The C.I. Cover and Frame shall be coated with two coats of black bituminous paint. The frame of Manhole cover shall be fixed on the slab while the slab is casted.

- Gully Trap chamber

The size of Chamber for 1500 x 100 mm S.W. Yard gully shall be 300 x 300 mm (inside). Foundation 100 mm thick in cement concrete m20 in hard granite metal of size 25 mm to 40 mm. The foundation should project 75 mm, from outer surface of wall. Brick work in cement mortar 1 :4 /125 mm thick, depth upto 600 mm maximum. The finishing of masonry walls both inside and outside should be done in cement mortar 1:4 Cement punning should be provided on the inner surface. One C.I. frame and cover of (Clear Opening 300 x 300 mm wt. 7 kg.) shall be fixed on the top of Chamber, duly embedded in C.C. 1:2:4 with granite chips and finished with Cement Plaster 1:4. The trap should be buried in cement concrete M20 in H.G. Chips upto the mouth and one C.I. Grating of size 225 mm X 225 mm are to be fixed on the top of mouth of Gully Trap to arrest rubbishes.

TIMBER
As per IS 1708-1969

Test Required & Procedure	Frequency	Acceptance Criteria
1	2	3
<p>a. 1. Moisture Content and Specific Gravity Test preparation and procedure:</p> <p>b. Measurement and weight: Prior to each test, the dimensions of each test specimen shall be measured correct to 0.01 cm and the specimen shall be weighed correct to 0.001 gm.</p> <p>c. Control of moisture content: Before the preparation of the test specimens for testing in the seasoned condition, the material shall be brought practically to constant weight by storage under controlled conditions at 27o C + 2o C temperature and 65 + 5% relative humidity. This is expected to bring the moisture content at 12% but if it is not exactly 12% it is permitted to test in the neighbourhood of 12% and results shall be adjusted to 12% moisture content. The test shall be made under such conditions that large changes in moisture content do not occur.</p> <p>d. Control of temperature: To avoid significant changes in strength Premises all test specimen shall be tested within the temperature range of 27o+ 2o C. The temperature at the time of test shall be recorded.</p> <p>e. d) Rate of loading: The rate of loading of the rest machine used shall not vary by more than + 20% from the specified speed for a given test. The load shall be applied continuously without interruption at the required speed throughout the test. The approximate percentage of sapwood if any, by volume, is estimated for all the test specimens and recorded. The number of the growth rings for 3 cm length shall be counted in the radial direction on each of the cross-section of such piece and the average shall be</p>	<p>For every Ten cum or part thereof.</p>	<p>The loss in weight expressed as a percentage of the oven dry weight shall be taken as the moisture content of the specimen. The formula for calculation shall be as given below:</p> $\text{Percentage moisture content} = \frac{WI - WO}{WO} \times 100$ <p>WI = Weight of sample at test in gms. WO = Oven dry wt. of sample in gms.</p> <p>Moisture content shall not exceed following values</p> <ul style="list-style-type: none"> i. Timber for frames = 14% ii. Timber for planking shutters etc. = 12%

<p>recorded as number of rings/cms for each specimen tested.</p> <p>f. Immediately after each mechanical test, disc approx. 2.5 cm in length and of full section as the test piece, shall be taken normally at the place of failure, failing which, at the central portion of the test specimen. In the case of shear test, the detached portion of the section approximately 5x5 cm shall be taken for determination of moisture content.</p> <p>The sample shall be weighed and then dried in an oven at a temperature of 103 + 20 oC.</p> <p>The weight shall be recorded at regular intervals.</p> <p>The drying shall be considered to be complete when the variation between last two weighing shall</p>		
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WOODEN PANEL DOOR SHUTTERS
Conforming to IS 2202 (Part I) 1983

Test Required & Procedure	Frequency	Acceptance Criteria
1	2	3
<p>1. Physical Test</p> <p>Physical Verification-</p> <p>i) Name of the manufacturer or trade mark.</p> <p>ii) Thickness of door shutter.</p> <p>iii) Whether ISI Certification Mark exists.</p> <p>2. Glue Adhesion Test -</p> <p>Procedure- Two square sections, 150 mm X 150 mm shall be cut from the corners of the door. These corner sections as out from the door, shall be immersed in boiling water at 100o C for four hours, then dried at a temperature of 270o + 20o C and relative humidity of 65 + 5% for 24 hours. At the end of the drying period the samples shall be examined for de-lamination. Glue lines in all the four exposed edges of the plywood on both faces of a specimen and the glue lines between the plywood faces and the stile and rail shall be examined for de-lamination.</p>	One from each lot.	A specimen shall be considered to have passed the test if no de-lamination has occurred in the glue lines in the plywood and if no single de-lamination. More than 50 mm in length and more than 3 mm in depth has occurred in the assembly glue lines between the plywood faces and the stile and rail.

READY MIXED PAINTS

Test Required & Procedure	Frequency	Acceptance Criteria
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1	2	3
<p>1. Drive Time Procedure: The material shall be brushed or sprayed as required on a 150 x 150 mm mild steel panel prepared and allowed to air dry or stored under specified drying conditions. The material shall be examined after specified intervals, for the following conditions: i) Surface dry ii) Hard dry iii) Tack free: The procedure of test on the dried film of the panel after specified period as follows: Place the panel in one pan of a suitable balance and counterpoise it with weights. Place a further weight of 2.25 kg and press on the dried film surface of the panel with the thumb till the two pans are balanced. Hold for one minute and then slowly release. No sign of stickiness to the thumb shall be apparent and the thumb impression, if produced, shall be such as can be wiped away with dry cotton wool.</p> <p>2. Consistency- Procedure: Insert a clean metal rod or palette knife into the original container and examine the nature of the setting. Procedure: Accurately weigh the required quantity of the material and transfer to a 250 ml beaker using either 20 ml of petroleum hydrocarbon solvent 145/205 (100 aromatic).</p> <p>3. Finish- Procedure: The material, when applied on an mild steel panel by brushing or spraying, whichever is specified to give a dry film weight commensurate with the weight per 10 litres of the material and allowed to dry in a vertical position under specified conditions, shall dry to hard, firmly adherent, flexible and smooth film, free from sagging and wrinkling with a matt, semi-glossy or glossy surface in accordance with the requirement of the material specification.</p> <p>4. Residue on Sieve- Outline: The material is mixed with a suitable solvent and passed through a 63 micron IS sieve. Not less than 20 gms. of the material taken from under the top skin shall be tested. (Conforming to IS: 1745-1961) or 20 ml of a mixture containing equal parts by volume of</p>	<p>On test each lot, (All containers of same size and same batch of manufacture constitute a lot)</p>	<p>No sign of stickiness to the thumb shall be apparent.</p> <p>The material shall not be cake hard inside the container and shall be in such a condition that stirring easily produces a smooth uniform paint suitable for application.</p> <p>The film produced shall be of normal capacity and in no way inferior to a film prepared in the same manner and at the same time from the approved sample, when examined not earlier than 48 hours and not later than 100 hours after application. In case of failure, the test shall be repeated by keeping the painted panel under standard atmospheric condition</p>

<p>petroleum hydrocarbon solvent and benzene. Wet a 63 micron IS sieve on both sides with the solvent. Mix the material and the solvent in the beaker thoroughly, breaking up all lumps without grinding action, with the flattened end of a stirring rod. Transfer the contents of the beaker to the sieve using awash bottle containing the solvent. Remove with the camel-hair brush any small particles of pigment that may be retained on the stirring rod or the walls of the beaker. Wash the residue left on the sieve with the solvent and gently brush with a camel-hair brush until the solvent passing through the sieve is clear and free from solid particles. When the washing is complete, dry the sieve for one hour at 100 + 2o C. Cool and transfer the residue with the help of the camel-hair brush to a weighed watch glass and determine the weight of residue.</p> <p>Procedure: Accurately weigh the required quantity of the material and transfer to a 250 ml beaker using either 20 ml of petroleum hydrocarbon solvent 145/205 (100 aromatic).</p> <p>5. Water Content</p> <p>Outline of the method: The material is heated under reflux with an organic solvent which is immiscible with water. The carrier liquid distils into a graduated receiver carrying with it water which then separates to form the lower layer, the excess carrier liquid overflowing from the trap and returning to the still.</p> <p>Procedure: Weigh 100 g. of the material in the flask, add 100 ml of dry petroleum hydrocarbon solvent (boiling point 75 to 85o C) and 10 ml of dry ethyl acetate (conforming to IS:229-1964) or acetate (conforming to IS:231-1957) and thoroughly mix the contents of the flask. Pour petroleum hydrocarbon solvent into the receiver upto the level of the side tube. Attach the flask to Dean and stark condensing and collecting system and heat the flask at such a rate that the condensate falls from the end of the condenser at a rate of two to five drops per second. Continue the distillation until condensed water is no longer visible in any part of the apparatus except at the bottom of the graduated tube and until the volume of water collected remains constant. Remove the persistent ring of condensed water in the rate of distillation by a few drops per second.</p>		
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<p>6. Weight per Litre Outline of the method: The calibrated cylinder or CNP is filled with the material and weighed. Procedure: Weight the cylinder or cup when empty and then fill to the brim with the material Assuming that the volume of the contents is 50 ml or 100 ml, calculate and express as kg per 10 litres.</p> <p>7. Lead Restriction Outline of the method: Determination of lead in lead restricted paints is carried out by precipitating the lead as sulphide from the separated pigment, which is finally oxidized to lead monoxide. Procedure: Shake about one gram of the ground pigment obtained, accurately weighed, continuously for one hour at room temperature with 1000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 percent by weight of hydrogen chloride. Allow the mixture to stand for one hour and then filter. Precipitate the lead salt contained in the clear filtrate as lead sulphide, filter, that the lead sulphide in air to convert it into lead sulphate, weigh calculate as lead monoxide (PbO) and express the result as percentage on the dry weight of the material taken for test.</p>		
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PARTICLE BOARD

Test Required & Procedure	Frequency	Acceptance Criteria
1	2	3
<p>Identification (Physical Verification) Each particle board shall be legibly marked near any of its edge with the following.</p> <ol style="list-style-type: none"> 1. Name of the manufacturer or trade mark. 2. Designation of particle board. 3. Thickness and date of manufacture. 4. Whether I.S.I. Certification marks exists. <p>5.0%] 5. Dimensional Tolerance</p> <ol style="list-style-type: none"> a) Length \pm 8 mm b) Width \pm 8 mm c) Thickness <ol style="list-style-type: none"> i) Boards upto and including 25mm thick ii) Boards above 25mm thick \pm 2.5%. 	<p>One from each lot</p>	<p>The density of each sample shall not vary from the mean density by more than + 10%. Moisture content: The average value of the moisture content shall be between 7 to 16%. Water absorption: The value of water absorption shall not exceed 25% for two hrs, soaking and 50% for 20 hrs. soaking. Exterior grade (I): These particle boards shall not delaminate after 3 hrs. boiling in water at 100'C.</p>

<p>Edges of the board shall be straight with a tolerance of 3 mm. the persistent ring of condensed water in the rate of distillation by a few drops per second.</p>		<p>Interior Grade (Gr.II) : These particle boards shall not disintegrate and / or shall not determinate after 24 hrs. Immersion in water at 27% ± 2°C.</p> <p>Swelling water: Swelling in thickness in % of original thickness for 2 hrs. Immersion shall be determined and the same shall not be more than 5%.</p> <p>The Swelling in thickness due to surface absorption in two hours shall not be more than 5%.</p>
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SPECIFICATIONS OF CIVIL WORKS

1. General:

- 1.1 Without forgoing the requirements of the Conditions of Tender and the Conditions of Contract the works in general shall conform to the "Latest Specifications" published by CPWD, Dehradun and the "Specifications for Works" stated in this tender. In case of items not covered by the General Specifications referred above, reference shall be made to the appropriate I.S. Code. If there is any difference in the particular specifications of individual item of work and the description of item as given in the Schedule of Quantity, the latter shall prevail. In case of any work for which there is no specification in I.S. Specifications or in the specifications forming part of tender documents or in case there is any variation, such work shall be carried out in all respects in accordance with the instructions to be issued by the Architects. The term Department shall mean the Employer. Any reference to ISI shall also mean reference to its successor Bureau of Indian Standards. All corrections to "Latest Specifications" or revisions of I. S. shall be deemed to apply to this contract.
- 1.2 Materials bearing ISI certification mark shall be given highest preference for use in the works.
- 1.3 Where the Contractor is required to do, perform, execute (etc.) any work or service or the like, it shall be deemed to be at his own cost. Absence of terms providing supplying, installing, fixing, etc. shall not even remotely entitle the Contractor to any additional payment thereof.
- 1.4 The rates accepted in the Schedule of Quantities apply to all floors, heights, depths, leads, lifts, spans, sizes, shapes, locations, etc. unless a distinction has been included in the very Schedule.
- 1.5 The Specifications and the Schedules may have been divided into various sub-heads for convenience only. This does not limit applicability of one to the other nor it absolves the Contractor of his responsibility to complete any trade/item of work as reasonably inferred from one or more of such sub-heads.
- 1.6 The Schedule of Quantities is not necessarily based on "Schedule of Rates - Delhi 2003 or any of its later/earlier versions. Hence the Schedule of Quantities shall be read and construed according to explanations given herein and intentions gathered therefrom. A mere parallel drawn from the said Schedule of Rates shall therefore not form a basis for a variation and, or additional payment.
- 1.7 All work under this contract is deemed to be performed above subsoil water level. However, removal of water collected from rains and the like shall be treated as part of contractual risk/obligation.
- 1.8 Screws, bolts, nuts, washers, hold fasts, lugs, anchors, clamps, plugs, suspenders, brackets, straps and fasteners of the like are deemed to be included in the rates of various items unless the Schedule of Quantities expressed a different intention.
- 1.9 Resetting any displacements, making good holes/chases and such other incidental jobs are included in rates of respective items for which these are required.

2.0 Concrete Work (Plain or Reinforced):

- 2.1 Centring, shuttering, staging, form work, strutting, propping (their provision and removal) shall not be paid for separately unless exclusion thereof is specifically described in the item.
- 2.2 The rates of concrete work do not include rendering or plastering but hacking and preparing surface for receiving the finishes shall be done as early as possible.
- 2.3 Any chamfers, grooves, drips, etc. which are generally and customarily required shall be provided in the concrete work integrally or otherwise without extra charges as directed by the Architect.

3.0 Steel Work:

- 3.1 The measurement of railing shall be the length of top wood/ steel section as per situation along the centre line.
- 3.2 Painting in relation to steel work shall be two or more coats of approved synthetic enamel plus a coat or primer including preparation of surfaces, fillers etc. The priming coat shall be measured & paid separately in the relevant item.
- 3.3 Circular work, bends, stepping are not payable extra.
- 3.4 The steel work in single sections of R.S. Joists, flats, Tees Angles fixed independently with or without connecting plate, is described in these clauses.

(a) Fabrication

The steel section as specified shall be straightened and cut square to correct lengths and measured with a steel tape. The cut ends exposed to view shall be finished smooth. No two pieces shall be welded or otherwise jointed to make up the required length of a member.

All straightening and shaping to form, shall be done by pressure. Bending or cutting shall be carried out in such a manner as not to impair the strength of the metal.

(b) Painting

All surfaces which are to be painted, oiled or otherwise treated shall be dry and thoroughly cleaned to remove all loose rust. Surfaces not in contact but inaccessible after shop assembly, shall receive the full specified protective treatment before assembly. This does not apply to the interior of sealed hollow sections. Part to be encased in concrete shall not be painted or oiled. A priming coat of approved steel primer i.e. Red Oxide Zinc chrome primer conforming to IS: 2074 shall be applied before any member of steel structure are placed in position or taken out of workshop.

(c) Welding

Welding shall generally be done by electric arc process as per IS: 816 and IS: 823. The electric arc method is usually adopted and is economical. Where electricity for public is not available generators shall be arranged by the contractor at his own cost unless otherwise specified. Gas welding shall only be resorted to using oxyacetylene flame with specific approval of the Engineer-in-charge. Gas welding shall not be permitted for structural steel work. Gas welding requires heating of the members to be welded along with the welding rod and is likely to create temperature stresses in the welded members. Precautions shall therefore be taken to avoid distortion of the members due to these temperatures stresses.

The work shall be done as shown in the shop drawings which should clearly indicate various details of the joints to be welded, type of welds, shop and site welds as well as the types of electrodes to be used. Symbol for welding on plane and shops drawings shall be according to IS: 813.

As far as possible every efforts shall be made to limit the welding that must be done after the structure is erected so as to avoid the improper welding that is likely to be done due to heights and difficult positions on scaffolding etc. apart from the aspect of economy. The maximum dia of electrodes for welding any work shall be as per IS: 814 and appendix B' of IS: 823. Joint surfaces which are to be welded together shall be free from loose mill scale, rust, paint, grease or other foreign matter, which adversely affect the quality of weld and workmanship.

4.0 Flooring:

- 4.1 The rates of cement concrete flooring and marble chips flooring are exclusive of dividing strips for formation of panels.
- 4.2 Borders, margins, bands, nosings, etc. are not payable extra. Treads shall be measured as floors, risers as skirtings. However, areas of returns (finished thickness), nosing shall be added respective items.
- 4.3 No extra shall be paid for cutting of glazed tiles or for wastage thereof.
- 4.4 Marble/Kota stone slabs shall be of selected quality, hard & sound and shall be approved by the Architects. The thickness of the slabs shall be as specified in the description of the item. Tolerance of 2mm shall be allowed for the thickness. In respect of length & breadth of slabs (Where flooring to be laid) a tolerance of 5mm shall be allowed. Every slab shall be cut to the required size and shape, top waviness shall be removed, the sides (edges) shall be removed, the sides (edges) shall be table rubbed with coarse sand or machine rubbed before paving. All angles of the tiles shall be true equal and free from chipping and the surface shall be true and plane.
- 4.5 Marble slab/kota slab shall be cleaned, wetted and mopped before laying.
- 4.6 Polishing shall be done by machine in four different courses. Ist course shall be of rubbing with carborundum stone No. 60, the second with No. 120, and the third with No. 320 to get even and smooth surface without pinholes. Where ever use of machine is not feasible to work, polishing shall be done by hand with No. 60, No. 80 and with No. 120 carborundum stone respectively. Lastly oxalic acid shall be dusted over the surface @ 33 gm per square

meter sprinkled with water and rubbed hard with namdah block (pad of wooden rags).

4.7 Marble chips, kota stone, marble (all floors, skirting, risers, dado, counter tops, treads) shall finally be polished with approved floor wax polish as directed at no extra cost.

4.8 Marble (counter tops) shall be of full width and in single piece upto length of 1.5m. Granite for name-plate shall be in one single piece.

5.0 Finishing:

1. Items of plastering apply to all locations including rough sides of walls, curved surfaces, all heights, etc. without limiting generally of para 1.4.
2. Preparation of surfaces including raking out joints, hacking, brushing, watering, etc. is included.
3. Drip mouldings shall not be payable extra.
4. Grooves shall be provided in plaster as directed by Architect at corners of ceiling slabs around the columns & beams at no extra cost.
5. Strips of G.I. chicken mesh 250mm wide shall be provided in plaster at all junctions (which are flush) between masonry/columns, masonry/beams.

6. Wood Work:

6.1 The areas of doors & windows shutters shall be measured to the nearest cm in closed position covering the rebates of the frame but excluding the gap between the shutter and the frame. Over lap of two shutters shall not be measured. All work shall be measured for finished dimensions. No allowance shall be made for dimensions supplied beyond those specified. Length of each piece shall be measured overall nearest to 1 cm, so as to include projections for tenons, scraves or mitres, width and thickness shall be measured to the nearest mm.

6.2 Where painting, polishing has been included in the item the same shall be executed as per Architect's directions. Painting shall be two or more coats of approved synthetic enamel plus a coat of fire resistant primer to wood work as approved by Architect and shall conform to BS-476 part 7 for class I surface spread of flame. Preparations of surfaces, fillars, etc. are included. This primer shall also be applied before polishing (i.e. French Spirit Polish). The fire resistant primer shall be measured & paid separately in the relevant item.

6.3 All flush door shutters shall have teak lipping on all edges as directed with extra thickness of lipping of meeting edges of double shutter doors. Glasses 5.5mm thick or 4mm thick shall respectively weigh not less than 13.75 Kg/sqm. Or 10 Kg/sqm.

Bends, stepping and circular shapes in railings are integral part of the rate.

The widths of various rails & styles shall be as described in the items or shown in the drawing.

All aluminum section & fittings used shall be ISI marked. All screws for fixing of fittings/fixtures shall be of matching finish.

In case of composite units (M.S. frame + teak wood shutter) the hold fasts shall be added or fixed with counter sunk machine screws. Also the M.S. frames shall have necessary holes and other arrangement for receiving/fixing of fittings

7. Plaster of Paris Punning (P. O. P.)

If the plaster surface is to be finished with plaster of paris punning, the surface shall be combed slightly with the wire brushes or nails before it is completely set to form key for plaster of Paris punning. The surface shall be thoroughly cleaned of dust then only damped but not soaked before the application of plaster of paris punning. The Gypsum for preparing punning shall be approved quality. It shall be dry and free from lumps and shall be suitably packed in watertight bags or containers. Paste shall be prepared by adding required quantum of water and it shall be used before it sets. No dropping paste shall be used in the work. Punning shall be applied to the prepared surface with steel trowel to a thickness required to make the surface produce perfectly smooth and even surface working from top to bottom. It shall then be sand papered to give a smooth and even surface. Any unevenness shall be made good by applying putty, made of

plaster of paris mixed with water, then sand papering the same after it is dry. Pilling in plaster shall be made good with plaster of paris mixed with colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. The surface shall be allowed to dry thoroughly before the regular coat of paint is applied. The measurement shall be in square metre.

8. Plastic Emulsion Paint:

Plastic emulsion paint shall be of approved manufacturer and shall generally conform to IS-5411 (Part-I)-1969.

The colour and shade of the emulsion shall be got approved by the Architect. Double scaffolding shall be used, ladden if used shall be tied with old gunny bags at top to prevent damage or scratches to the walls. The instructions of the manufacturer shall be followed, in application of priming and finishing coats. Turpentine or any other solvent shall not be used for thinning the paint.

Minimum 3 coats of paint shall be applied inclusive of primer coat. If a proper and even surface is not obtained to the satisfaction of the Architects in 3 coats, Contract shall carry out additional coats of painting to approval at his expenses. Care shall be taken that dust or other foreign material does not settle or disfigure the various coats. The measurement shall be in square metre.

9. Miscellaneous:

The work of cupboard/cabinets shall be done as per drawings. The depth of cupboards shall be as shown in drawings. The work includes holdfasts and other accessories usually required for complete installation. All inner surfaces shall be painted & outer face polished as per Architects approval.

All exposed cut ends of boards shall be provided with hardwood lippings.

Kail wood to be used shall be of the best available quality.

The joints in cement concrete pavements/roads shall be formed as per design and pattern. The joints shall be cleaned and neatly filled with 'A' grade sealing compound. Side kerbs shall be made in situ to design and volume paid for in the same item. Required side forms shall not be paid separately.

For whitewashing, colour washing, distempering on sand faced plaster or on rough cast plaster with stone aggregate upto 10mm, only flat single surface will be measured and paid.

In the case of R.C.C. Jallies upto 50mm thick only single flat surface will be considered for each side of painting.

SPECIFICATIONS FOR SERVICES

i) General

- 1.1 The drawings for services are diagrammatic but shall be followed as closely as actual construction permits. Any deviations from the drawings shall be in conformity with architectural and structural drawings. The dimensions designated by the manufacturers shall take precedence over the drawings.
- 5.2 At completion of work the Contractor shall submit one set of tracings and two sets of prints of "As-Built-Drawings". These drawings shall, among others, include invert levels, pipe runs, diameters, location of valves, access panels, layout of equipment, piping connections and such other information for maintenance & future extensions. Guarantees given by manufacturers shall be assigned to the Employer along with names & addresses of manufacturers, suppliers and information about spare parts.
- 5.3 All site test shall be carried out with prior intimation to the Bank Engineer / Architect. All defects shall be rectified and tests conducted again to the satisfaction of the Bank Engineer / Architect. In addition to the test required by the specifications, the Contractor shall also conduct tests required by the Architect and by the Municipal or other Authorities.
- 5.4 All work shall be executed by competent and licensed persons. The contractor shall maintain liaison with Municipal and other controlling Authorities. He shall obtain their approvals and certificates as required by the bye - laws at appropriate stages.

- 5.5 No cutting / chasing shall be done in load bearing structural members without prior approval of the Asstt. Engineer. Sleeves and openings shall be provided during the progress of construction in preference to cutting at later date.
- 5.6 The Architect may require typical mock up(s) to be installed in advance for approval. Undamaged materials from the mock up shall be allowed to be reused in the work.
- 5.7 Unless otherwise described in the item CI / SCI pipes and fittings shall be a spigot and socket type.
- 5.8 G.I. pipe spouts shall be paid as per item of G.I. pipes (internal work). Cutting and making good is included. The free ends may be skew-cut.
- 5.9 Wherever use of G.I. pipes is called for the same shall be medium class (class - B)

ii) Materials :

- 2.1 The materials shall conform to the specifications and in absence thereof to Indian Standards. The products should bear the ISI Mark.
- 2.2 The makes of materials for use in this work are broadly approved as per list given below. The Contractor shall, however, get particular makes and samples approved before ordering:
- 2.3 Notwithstanding any interim or final approval the Contractor remains responsible for satisfactory performance of all fittings & fixtures. The liability of the Contractor is not limited by any approval of the make of materials.
- 2.4 The item rate of mirror includes extra packing piece of AC plain sheet, where required due to off set between plaster & glazed tiles surface.

iii) Testing

- a) The sand cast iron soil, waste and vent pipes and fittings including joints shall be tested by pumping smoke into the pipe at the lowest end.
- b) All G.I pipes and fittings including joints shall be tested to hydraulic pressure of 6 kg / cm² (60 meters) avoiding water hammer. The test pump having been stopped the test pressure should maintain without loss for at least half an hour. The pipes and fittings shall be tested in sections as the work of laying proceeds keeping the joints exposed for inspection during the testing.
- c) All stone ware pipes shall be tested with water pressure of 1.5m head of water at the highest point of the section under test.

SPECIFICATIONS

- All the works specified and provided for in the tender/ schedule and drawing or which may be required to be done in order to perform and complete any part there of shall be executed in accordance with the technical specification, workmanship, quality control, as prescribed whether enclosed/ not enclosed in this document, in the specification & codes, with up to date amendments, in the following order:-
 - a) CPWD/ DSR
 - b) IS (BIS) Codes
- All works under this contract (wherever grey cement is used) have to be executed in OPC.
- The quantities given in the tender are approximate. However, the payment shall be made on the basis of actual measurements taken on site and in conformity with CPWD Specification and BIS Codes. It is clarified that all quantities are subject to change and no claims whatsoever on this behalf shall be entertained.
- All materials used in the works shall be of their respective kind and quality specified in

the tender document or approved by the SBI and/ or Architect and shall comply strictly with the requirements of the latest specifications of CPWD and Indian Standard Codes.

- The work shall be executed and measured as per metric dimensions given in the Schedule of Quantities, Drawings etc. (FPS units wherever indicated are for guidance only).

Signature of Contractor & Seal

SAFETY CODE

1. First aid appliances including adequate supply of sterilised dressing and cotton wool shall be kept in a readily accessible place.
2. An injured person shall be taken to a public hospital without loss of time, in cases 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 be engaged for holding ladder.
5. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent to fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one meter.
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 or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.
8. Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
9.
 - i) No paint containing leads or lead products shall be used except in the form of paste or readymade paint.
 - ii) The workers should supply suitable facemasks for use when the paint is 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 be provided to enable the working painters to wash during the periods of cessation of work.
11. Hoisting machines and tackle used in the works, including their attachments, anchorage and supports shall be in perfect condition.
12. The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

PRO-FORMA 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 Architect / Bank	Remarks
1	2	3	4	5	6	7

BILL OF QUANTITY

PREAMBLE:

To be read along with drawings.

1. Rates to be quoted both in figures and words.
2. All pages to be signed and stamped by the tenderer.
3. The rate of the items shall be applicable for any floor level/ any number of floors, or any quantity.
4. The specification of the items shall be as per latest Indian standard codes unless otherwise specified.
5. All materials shall be as per approved list and should be of 1st quality unless otherwise specified.
6. The rates are inclusive of all duties and taxes (except GST) of all government, municipal or any other statutory body applicable from time to time.
7. Rates shall be for items complete in all respects as per drawing, instructions and approval of the / bank's engineer.
8. The quantities are approximate and tentative which may vary during course of execution. The rates quoted against particular item shall not be changed with variation in quantities.
9. Making of any cutout / opening for electrical / air - conditioning wiring / fitting in any of the item of false ceiling, partitions, paneling masonry work etc. And finishing edges jambs / sills / soffits of the opening shall not be paid extra.
10. The tenderer shall visit the site and shall satisfy himself as to conditions under which the work is to be performed. He shall also check, ascertain the locations of any existing structures or equipment or any other situation which may affect the work. No extra claim as a consequence of ignorance or on ground of insufficient description will be allowed at a later date.
11. The quoted price for items shall include all accessories, consumables etc. As required to make the item complete in all respects, compatible with other related / associated items and fully functional.
12. Contractor shall be fully responsible for any error, difficulty in execution / damages incurred owing to discrepancy in drawings which has been overlooked by him and has not been brought to the notice of the .
13. There are number of items given in the tender where in basic rates including all taxes expected has been mentioned in the tender. These items shall be purchased by the contractor from the market only after the approval of quality and rates by the .
14. All hidden surfaces of board / ply / wood work to be painted with anti bacterial paint from nav air international fr 881 (viper) (white colour as per manufacturer's specifications on wood / board).
15. Contractor shall appoint technically qualified full time site supervisor to monitoring the day to day progress of work at site on their own cost.

**BILL OF QUANTITIES
PRICE BID (PART-B)**

(Refer annexed file / section in e-tender portal for Bill of Quantities)