

UTTRA PRADESH GRAMIN BANK

REGIONAL OFFICE, AYODHYA

Baldev Niwas Compound

Acharya Narendra Dev Road

Reidganj Ayodhya 224001

INSTRUCTION TO TENDERERS AND GENERAL CONDITIONS OF CONTRACT

FOR

**INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING AND ALLIED
WORKS FOR AYODHYA BRANCH, (U.P)**

ARCHITECTS

Vaastu Vikap Architects

3/70, Vibhav Khand, Gomti Nagar, Lucknow-226010

vva.global@gmail.com

Mob: - +91-9997591118, +91-9899328602

**Tender Document: INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING AND ALLIED WORKS
FOR UTTAR PRADESH GRAMIN BANK, AYODHYA BRANCH (U.P)**

Date of issue in Website	05.06.2025
Last date of Submission of Tender	26.06.2025 up to 4.00 p.m.
Place of Submission of Tender	UTTAR PRADESH GRAMIN BANK REGIONAL OFFICE, AYODHYA Baldev Niwas Compound Acharya Narendra Dev Road Reidganj Ayodhya 224001
Prebid Meeting	11.06.2025 at 11:00 AM at Regional Office Ayodhya. All prospective bidders may avail this opportunity to interact with the tender committee and seek necessary clarifications with regards to this RFP. No representations would be entertained at any later stage from bidders due to misinterpretation /misunderstanding of clauses and decision of the tender committee would be binding on all the bidders.
Opening of Technical Bid	27.06.2025 at 4:30 p.m.
Opening of Financial Bid	Only Eligible Tenderer shall be informed (Via E-Mail/Telephone) separately
Time of Completion of the Project	40 Days
Tender Fee	Tender fee Rs. 1000.00+GST non-refundable (Tender to be downloaded from Bank Website)

•	TENDER NOTICE	3-5
•	TENDER FORM TO TENDERERS	6-7
•	INSTRUCTION TO TENDERS	8-12
•	MANDATORY INFORMATION FOR PRE-QUALIFICATION (Proforma 1 & 2)	13-17
•	ARTICLE OF AGREEMENT	18-20
•	GENERAL CONDITIONS OF CONTRACT	21-22
•	SPACIAL CONDITION OF CONTRACT	81-89
•	PREAMBLE AND SPECIFICATIONS	90-106
•	LIST OF APPROVED MAKES FOR MATERIALS	107-109
•	GENERAL SPECIFICATIONS FOR ELECTRIC WORK	110-112
•	TECHNICAL SPECIFICATIONS	113-155
•	BILL OF QUANTITIES/ PRICE BID	156-181
•	DRAWINGS	182-189

TENDER NOTICE

To,
The Regional Manager,
UTTAR PRADESH GRAMIN BANK
Regional Office, Ayodhya
Baldev Niwas Compound
Acharya Narendra Dev Road
Reidganj Ayodhya 224001

Dear Sir,

Sub: Interior Furnishing, Electrical & Air Conditioning and Allied Works for Uttar Pradesh Gramin Bank, Ayodhya Branch, (U.P.) invites sealed tenders in -2- bid system, for the aforesaid work. **Tender copies will be available for download only from the website of Uttar Pradesh <https://upgbank.com/tender.php> from 05.06.2025.**

Download Tender document from Bank web site only and tender fee is Rs. 1000 +GST.

The tenders may be submitted in the following manner:

Envelope No. 1(Tender Fee and EMD):

	Favouring	Amount	DD/Banker's Cheque payable at
Tender fee	Uttar Pradesh Gramin Bank	Tender fee Rs. 1000.00 +GST (Tender to be Downloaded from Bank Website)	Ayodhya, Uttar Pradesh
EMD (Refundable)	Uttar Pradesh Gramin Bank	Rs. 24,100.00/-	Ayodhya, Uttar Pradesh

Estimated cost of the Project is Rs. 12.06 Lacs (Twelve Lacs Six Thousand Rupees)

2. The Tenderer must also submit the Mandatory Information strictly in Bank's prescribed Performa. Technical Pre-qualification of the tenderer will be based on the Mandatory Information and supporting documents submitted along with the tender documents, as well as Architect & Bank's scrutiny of the same and/or inspection of works carried out by the Tenderer. Bank reserves the right to accept or reject any tender without assigning any reason whatsoever.

Envelope No. 2 (Technical Bid):

- **Mandatory Information (strictly in the Bank's prescribed Performa) Other supporting documents & credentials of the tenderer.**
- **Must not contain any commercial information. Any Commercial disclosure in the Envelope no. 1 and/or 2 will disqualify the tenderer without any further scrutiny.**
- **The Tender not accompanied by such Earnest Money are liable to be rejected straight away. (E.M.D in any other form is not accepted).**
- **MSME registered vendor exemption will be applicable only for tender document cost.**

3. The tenderer shall submit the completed tender documents duly signed in a separate envelope marked as "Commercial/Price Bid- Envelope No. 3".

Envelope No. 3 (Commercial Bid/Price Bid):

• Commercial Bid/Price Bid.

Tender Bids received in any form other than mentioned above will be disqualified.

Sealed tenders in the prescribed tender form, with the EMD, along with the Mandatory Information etc. and commercial bid (Envelope 1, 2 and 3), should be addressed to The Regional Manager, **UTTAR PRADESH GRAMIN BANK**, Regional Office, Ayodhya, Baldev Niwas Compound, Acharya Narendra Dev Road, Reidganj Ayodhya 224001 and super scribed "Tender for **Interior Furnishing, Electrical & Air Conditioning and Allied Works for Uttar Pradesh Gramin Bank, Ayodhya Branch (U.P)**

Eligibility Criteria: -

I] Average financial turnover certificate duly certified by CA during the last -3- years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost.

II] Experience of having successfully completed similar works during last -3- years ending last day of month previous to the one in which applications are invited should be either of the following: -

A] Three similar completed works costing not less than the amount equal to 40% (i.e. Rs. 4,82,400.00) of the estimated cost.

Or

B] Two similar completed works costing not less than the amount equal to 60% (i.e. Rs. 7,23,800.00) of the estimated cost.

Or

C] One similar completed work costing not less than the amount equal to 80% (i.e. Rs. 9,65,000.00) of the estimated cost.

The Contractor should submit Performance Certificate from the previous employer in support of executing similar works failing which the tender shall not be considered.

III) Similar work means Office interior furnishing / renovation works of same nature /magnitude carried out for Govt/Public Sector Organizations, banks, public sector financial institutions, involving furnishing, electrification, air conditioning, office automation.

IV) Tenderer /Bidder should have main activity as Contractor ship otherwise tender shall be rejected. Tender/Bidder should also to submit their Pan, Tin and GST No. and also submit documentation for the same.

v) Copy of Electrical Licence.

In addition to above, the criteria regarding satisfactory performance of works, personnel, establishment, detail of infrastructure, equipment etc may be incorporated in the technical bid.

Sealed Tender must be dropped in a tender box placed at **"UTTAR PRADESH GRAMIN BANK"** Regional Office, Ayodhya, Baldev Niwas Compound, Acharya Narendra Dev Road, Reidganj Ayodhya 224001 not later than **4:00 p.m. on 26.06.2025.**

Tender should be addressed to:

The Regional Manager,

UTTAR PRADESH GRAMIN BANK

Regional Office, Ayodhya

Baldev Niwas Compound

Acharya Narendra Dev Road

Reidganj Ayodhya 224001

Pre bid Meeting: 10.06.2025 at 11:00 AM, At Regional Office Ayodhya, Baldev Niwas Compound Acharya Narendra Dev Road, Reidganj, Ayodhya.

All prospective bidders may avail this opportunity to interact with the tender committee and seek necessary clarifications with regards to this RFP. No representations would be entertained at any later stage from bidders due to misinterpretation /misunderstanding of clauses and decision of the tender committee would be binding on all the bidders.

Technical Bids will be opened **at 4:30 pm on 27.06.2025**.

Price Bids: Only Eligible Tenderer shall be informed (Via E-mail/Telephone) separately.

Defect Liability Period shall be twelve (-12-) Months from the date of issuance of virtual completion Certificate of the works.

Validity of offer shall be -90- days from the date of opening of Price Bid. The Bank does not bind itself to accept the lowest or any tender and reserves itself the right to accept or reject any or all tenders, either in whole or in part, without assigning any reason for doing so.

Further Addendum/Corrigendum/Minutes of Prebid meeting shall be published on Bank's website only and no newspaper publication will be released. All interested vendors to monitor the bank website for any addendum/amendments related to this Request for Proposal. Bidder must refer the same before final submission of the Tender.

Regional Manager
Regional Office

Ayodhya

TENDER FORM

To,

The Regional Manager,
UTTAR PRADESH GRAMIN BANK
Regional Office, Ayodhya
Baldev Niwas Compound
Acharya Narendra Dev Road
Reidganj Ayodhya 224001

Dear Sir,

Re: Interior Furnishing, Electrical & Air Conditioning and Allied Works for Uttar Pradesh Gramin Bank, Ayodhya Branch (U.P)

Having visited the site, examined the plans, specifications and schedule of quantities prepared by the Project Architect **M/s Vaastu Vikalp Architects** and satisfying ourselves as to the location of the site and working conditions, I/we hereby offer to execute the above works at the respective rates which I/we have quoted for the items in the Schedule of Quantities.

I/We herewith deposit **Rs.24,100.00/- (Twenty-Four Thousand One Hundred only)** by Demand Draft or Banker's Cheque drawn in **favour of Uttar Pradesh Gramin Bank** as Earnest Money Deposit for the execution of the works at my/our tendered rates together with any variations should the work be awarded to me / us.

In the event of this tender being accepted, I/we agree to enter into and execute the necessary contract required by you. I/We do hereby bind myself/ourselves to forfeit the aforesaid deposit of **Rs. 24,100.00/- (Twenty-Four Thousand One Hundred only)** in the event of our refusal or delay in signing the Contract Agreement. I/we further agree to execute and complete the work within the time frame stipulated in the tender documents. I/we agree not to employ Sub-Contractors without the prior approval of the Bank.

I/we agree to pay Duties and all Royalties and all other applicable taxes prevailing and be levied from time to time on such items for which the same are leviable and the rates quoted by me/us are inclusive of the same but excluding GST

I/we understand that you are not bound to accept the lowest tender or bound to assign any reasons for rejecting our tender. I/we further understand that Uttar Pradesh Gramin Bank may award Contracts for Interior to more than one Contractors and that I/we shall make no claims whatsoever if Uttar Pradesh Gramin Bank accept only a part of my/our tender. We unconditionally agree to Uttar Pradesh Gramin Bank's preconditions a stipulated in the tender documents.

I/We agree that in case of my/our failure to execute work in accordance with the specifications and instructions received from the Owner or the Architect/Consultants appointed by the Bank, during the course of the work, Bank reserves the right to terminate my contract and forfeit the Earnest money deposit paid by me in additions to recovery of all the dues to the Bank from the payment receivable by me. Further I may also be barred from tendering in future for the Bank and its subsidiaries.

I/we enclose demand draft/banker's Cheque for **Rs. 24,100.00 (Twenty-Four Thousand One Hundred only) towards Earnest Money** deposit in envelope No. 1

I/we agree to keep our tender open for 90 days from the date of opening of envelope No. 2 i.e. (Technical bid). **Any Commercial disclosure in the Envelope no. 1 and/or 2 will disqualify me/us without any further scrutiny.**

I/we enclose herewith the completed tender documents duly signed in duplicate in envelope No. 3. (Commercial Bid).

Yours truly,

[To be signed by the Authorized Representative of Tenderer holding Power of Attorney]

Place:

Date

INSTRUCTIONS TO TENDERERS:

1. Location:

1.1. The site is located at Ayodhya, UP.

1.2. Tenderers must get acquainted with the proposed work and study drawings, designs, specifications, conditions of contract and other conditions carefully before tendering. The Tenderer shall seek clarifications on any item, if required, prior to submitting his tender. No request of any change in rates or conditions for want of information on any particular point shall be entertained after receipt of the tenders.

1.3. The Tenderer is advised to inspect the site to ascertain the nature of site, access thereto, location, facilities for procurement of materials, labour rates and execution of the work. The Tenderer shall be deemed to have full knowledge of the site and drawings whether he actually inspects them.

2. Submission of Tender:

2.1. **Sealed Tender in -2- bid system must be dropped in the tender box kept at The Regional Manager, UTTAR PRADESH GRAMIN BANK, Regional Office, Ayodhya, Baldev Niwas Compound, Acharya Narendra Dev Road, Reidganj Ayodhya 224001 and** as per details given hereunder. The rates shall be filled in the Schedule given in, of the tender document.

2.2. In case of any queries, the Tenderer may contact following:

Uttar Pradesh Gramin Bank : Kushagra Kumar Shrivastava (P&E) -Phone: +91- 89310-39841

Architect

:M/s Vaastu Vikalp Architects

3/70, Vibhav Khand, Gomti Nagar, Lucknow-226010

2.3. The tender shall be submitted in two parts in separately sealed envelopes: The envelope containing the tender offer shall be duly super scribed with the above title.

2.4. The Tenderer is requested to quote strictly as per the terms and conditions and specifications given in the tender document and not to stipulate any deviations. However, deviations, if unavoidable, should be indicated separately indicating the specific page number and clause number against which the deviations are made. Wherever specifications of certain works are not available they shall be deemed to be done as per relevant I.S code.

2.5. Addenda to this tender document, if issued, must be signed and submitted along with the tender document.

2.6. All pages to be initialled: All signatures in tender documents shall be dated and stamped. All pages of tender documents shall be initialled at the lower right-hand corner or signed wherever required in the tender papers by the Tenderer or by a person holding power of attorney authorizing him to sign on behalf of the Tenderer before submission of tender.

2.7. Rates to be in figures and words: The Tenderer should quote in English both in figures as well as in words the rates and amounts tendered by him in the Schedule of Rates for each item and in such a way that interpolation is not possible. The amount for each item should be worked out and entered and requisite totals given of all items both in figures and in words. The tendered amount for the work shall be entered in the tender and duly signed by the Tenderer.

2.8. Corrections and Erasures: No corrections and alterations in the entries of tender papers shall be permitted. If any they shall be signed and dated in full by the Tenderer. Corrections with white fluid and overwriting are not permitted.

2.9. The tender shall contain the names, postal address of the residence and place of business of authorized person signing the tender and shall be signed in /his usual signature. Partnership firms shall furnish the full names of all Partners in the tender. It should be signed in the partnership name by all the partners or by duly authorized representative followed by the name and designation of the person signing. Tender by a Corporation shall be signed by an authorized representative, and a power of Attorney on their behalf shall accompany the tender. A copy of the partnership deed of the firm with names of all partners shall be furnished.

2.10. When a Tenderer signs a tender in a language other than English, the total amount tendered should, in addition, be written in the same language. The signatures should be attested by at least one witness.

2.11. Witness: Witnesses and sureties shall be persons of status and propriety and their names, occupation and address shall be stated below their signatures.

3. **Information required along with tender:** The following details are required to be submitted along with tender:

3.1. List of Sub contractors to be employed.

3.2. List of equipment proposed to be deployed for work.

3.3. Site Organization chart with biodata of Resident Engineer and key personnel proposed to be deployed at site.

3.4. Income Tax Clearance and Sales Tax clearance certificates.

3.5. Power of Attorney in the name of persons who has signed the tender document.

3.6. BAR/PERT Chart.

3.7. Each Tenderer shall submit with his tender a list of large works of like nature he has executed giving details as to their magnitude and cost, the proportion of work done by the contractor in it and the time within which the works were completed. The Tenderer shall also submit along with his tender a list mentioning the names of manufacturers of specialized items.

3.8. Any printing or typographical errors/omission in tender document shall be referred to the Architect/Interior Designers appointed by the Bank and their interpretation regarding correction shall be final and binding on Contractor.

4. **Transfer of Tender Documents:**

Transfer of tender documents purchased by one intending Tenderer to another is not permitted.

5. **Earnest money:**

5.1. The Tenderer shall pay the amount of Earnest Money as mentioned in the Notice Inviting Tender, by Bank Demand Draft/Banker's Cheque payable to Uttar Pradesh Gramin Bank, at Ayodhya (UP). No interest on Earnest Money deposited by the Tenderer shall be allowed. The Tenderer should attach the bank draft/ banker's Cheque along with the tender failing which the tender will not be considered.

5.2. The Earnest Money of the unsuccessful Tenderers will be refunded in form of same DD Submitted by them within a reasonable period of time without any interest.

5.3. The Earnest Money deposited by the successful Tenderer shall be retained as part of Security Deposit.

5.4. The Security Deposit shall be forfeited if the Contractor fails to observe any terms and conditions of the Contract.

6. Validity:

Tenders submitted by Tenderers shall remain valid for acceptance for a period up to 90 days from the date of opening of tender. The Tenderers shall not be entitled during the period of validity, without the consent in writing of Bank to revoke or cancel his tender or to vary the tender given or any terms thereof.

7. Addenda:

7.1. Addenda to the tender document may be issued if required to clarify documents or to reflect modifications to the design or contract terms.

7.2. Each addendum issued by the Architect/ Interior Designer will be distributed to each person or organization to which a set of tender documents has been issued. Each recipient will submit the same along with his tender. All addenda issued by the Architect/Interior Designer shall become part of Tender Documents.

8. Right to accept or reject tender:

8.1. The acceptance of a tender will rest with the Bank who does not bind themselves to accept lowest tender and reserve to themselves the authority to reject any or all the tenders received without assigning any reasons. They also reserve the right of accepting the whole or any part of the tender and the Tenderers shall be bound to perform the same at the rates quoted. All tenders in which any of the prescribed conditions are not fulfilled or are incomplete in any respect or there is any correction not duly signed and dated by the Tenderer are liable to be rejected. For this purpose, Tenderer shall quote rates for various items which will be self-sufficient to meet their whole costs for executing any / every item. No demand for variations in rates for items executed shall be entertained on the plea of the Bank deciding to delete, alter or reduce the quantities specified in respect of the any item.

8.2. The work may be awarded to one or more agencies duly splitting the work at the entire discretion of the Bank and the Architect/ Interior Designer. The quoted rates shall hold good for such an eventuality.

9. Rates:

9.1. The Bank is not concerned with any rise or fall in the prices of materials and labour. The rates quoted shall include all costs, allowances, taxes including duties on works contract or any other charges including any enhanced labour rates etc. which may become effective for any reason including those due to acts of Government/ Statutory Bodies enacted from time to time by the State and or the Central Government. Under no circumstances, shall the Bank be held responsible for compensation or loss to the contractor due to any increase in the cost of labour or materials etc.

9.2. The rate quoted in the tender shall also include electric and water consumption charges for construction and erection. If power and water are available at the site, the Contractor shall have to make his own arrangements to obtain the connections from the available sources at his own expense and maintain an efficient service of electric light and power and water and shall pay for the services consumed and maintain the installations at his own cost. If no power and water are available at the site, the

Contractor shall have to make his own arrangements to obtain power and water connections and maintain at his own expense an efficient service of electric light and power and shall pay for the electricity consumed.

9.3. The rate quoted in the tender by the contractor should include cost of -3- sets of 10"x12" Photographs done by a reputed professional photographer, of the completed work.

9.4. Contractor to include cost of pest control treatment of the entire site, including white ants, Roaches, rodents for one year from date of virtual completion of the contract.

9.5. Contractor to coordinate and assist the Architect/Interior Designer in obtaining all Statutory approvals including MMC, CFO and any other State and Central rules in force. Any expenses incurred in obtaining such approvals are deemed included in the rates quoted by the Contractors.

9.6. The entire interior work shall be guaranteed to be free from manufacturing defects, defective workmanship or materials and any defects that may appear within 12 months from the date of issue of completion certificate which in the opinion of the Bank/Consultants have arisen from bad manufacturing, workmanship, or materials, shall upon intimation be made good by the Contractor at his own cost within the time specified. During the said period of 12 months the Contractor shall without any extra cost, carry out all routine and special maintenance of the Interior and attend to difficulties and defects that may arise. The Tenderer / Contractors shall associate with him during the execution and free service period, the operation and maintenance staff of the Bank.

9.7. Payments for the work to be executed under this contract shall be made as per the tender Document and no variation in the mode of payment will be acceptable. The Tenderer shall guarantee that the work shall conform to the detailed specifications.

10. Signing of the contract:

10.1. The successful Tenderer shall be required to execute an agreement in the proforma attached with this tender document within 30 days from the date of receipt of the notice of acceptance of tender. In the event of failure on the part of the successful Tenderer to sign the agreement within the above-stipulated period. The Bank reserves the right to forfeit the earnest money/ security deposit and cancel the contract.

10.2. Until the Agreement is formally signed, the Work Order / Letter of Acceptance of Tender issued to the successful Tenderer and accepted by him shall be operative and binding on the Bank and the Contractor.

10.3. On acceptance of the tender, the name of the accredited representatives of the Tenderer who would be responsible for taking instructions from the Bank shall be mentioned by the Tenderer.

10.4. If so decided, the Bank reserves the right to appoint PMC (Project Management Consultant) or any other agency to get the quality of works checked, measurements recorded, including certification of bills etc.

10.5. The Bank reserves the right to reproduce partly or fully the items executed on site anywhere in the country premises and no copyright claims shall be made by any contractor of any description from the Bank.

10.6. The Bank has the right to delete items, reduce or increase the scope of work without the contractor claiming any compensation for the reduction in the scope of work.

11. Notices to local bodies:

11.1. The contractor shall comply with and give all notices required under any law, rule, regulations or bye laws of parliament , state legislature or local authority relating to works .The contractor shall before commencing the execution of work issue a certificate to the bank / architect / consultant that he has obtained all the permission registrations and give all the notices as are required to be obtained or give in under law .

11.2. I / We hereby declare that I / We have read and understood the above instructions for the guidance of the Tenderers.

Witness _____

Signature of Tenderer

Address _____

Address _____

Date : _____

Date:_____

Mandatory information required for Prequalification of the bidder for

Interior Furnishing, Electrical & Air Conditioning and Allied Works for Uttar Pradesh Gramin Bank, Ayodhya Branch (U.P)

Important:

- 1 Please type or handwrite in capital letters.
- 2 Attach copies of the supporting documents.
- 3 Please use additional sheets if required.

Name of the Bidder :
email address :
Telephone number office :
Telephone number office :
Fax no. :

Address 1 :

Address :
City :
Pin code :
Year of Establishment :
Status of the Firm :
(Proprietary/Partnership/Pvt. Ltd./Pub. Ltd)
Names of the directors/Partners/proprietor :

Name and address of the Bankers – 1 :
Name and address of the Bankers – 2 :
Name and address of the Bankers – 3 :
Registration number and date with Registrar
of Companies/Firms :
PAN Card Number :
GST Number :

Average financial turnover during the last 3
years, ending 31st March of the previous
financial year,

2023-2024
2022-2023
2021-2022

Request copies of the Audited Balance sheet:

Current solvency certificate from your Banker for not less than Rs. 35 Lac (within Six Months)	Attach copy.
Empanelment with the other Companies/PSUs	
Field of activities	
Main Activity	
Detail Description and value of work done (Performa 1)	
Detail Description and value of work in hand (Performa 2)	
Performance certificate for clients with detailed contact information	
List Number of Technical staff working in the organization	

List number of other staff working in the organization	
Have you in past carried out any works for Uttar Pradesh Gramin Bank or its subsidiaries? Have you been ever disqualified or levied	
penalty by the Bank in past for non-fulfilment of contractual obligations. If yes, please provide details in brief.	
Have you been ever been put on a holiday list or banned by any Public Sector Units? If yes please provide details in brief	

I/We confirm that to the best of our knowledge this information is authentic and accept that any deliberate concealment will amount to disqualification at any stage.

Seal and Signature of the Bidder/s.

Date:

Place:

Performa -1

Work costing not less than the amount equal to 40% (i.e. Rs. 4,82,500.00) of the estimated cost.

S.No.	Name of work /project with address	Name and full postal address of Owner	Contract amount	Stipulated time of completion	Actual time of completion	Any other information . Actual amount of the project, if increased	Enclosed clients certificate for satisfactory completion

Note :

1. Information has to be filled up specifically in this format .Please do not write any remark.
2. For certificates, the issuing Authority shall not be less than an executive in charge.

Performa -2

Work costing not less than the amount equal to 60% (i.e. Rs. 7,23,800.00/-) of the estimated cost.

S.N o.	Name of work /Project with address	Name and full postal address of Owner	Contract amount	Stipulated time of competition	Present status of the project.	Any other information .

Note :

3. Information has to be filled up specifically in this format. Please do not write any remark.
4. For certificates, the issuing Authority shall not be less than an executive in charge.

Performa -3

Work costing not less than the amount equal to 80% (i.e. Rs. 9,65,000.00/-) of the estimated cost.

S.No.	Name of work /project with address	Name and full postal address of Owner	Contract amount	Stipulated time of competition	Present status of the project.	Any other information .

Note:

5. Information has to be filled up specifically in this format. Please do not write any remark.
6. For certificates, the issuing Authority shall not be less than an executive in charge.

TO BE STAMPED (Rs. 500/-) AS AN AGREEMENT

ARTICLES OF AGREEMENT

ARTICLES OF AGREEMENT made at Ayodhya (UP) on the _____ 2025 between Uttar Pradesh Gramin Bank, a body corporate having its Head office at 2nd and 3rd floor, NBCC commercial complex, Vardan Khand Gomti Nagar Extension, Lucknow-226010. (Hereinafter called "the Bank") of the one part AND _____ (herein after called "The Contractor") which expression shall, unless repugnant to the context, mean and include of the other part.

1. WHEREAS The Bank is desirous of carrying out Interior works for "**Interior Furnishing, Electrical & Air Conditioning and Allied Works for Uttar Pradesh Gramin Bank, Ayodhya Branch (U.P)**" (hereinafter referred to as the said site) and the said site as is more fully described in the layout drawings and for the purpose, the parties hereto have agreed to entered into this contract (hereinafter referred to as the contract). The Bank has for the purpose, arranged drawings and specifications, describing the works to be done: prepared by

2. The said drawings have been signed by or on behalf of the parties.

3. The Contractor has agreed to execute the said works viz. _____ Works subject to the provisions hereinafter contained and subject also to General and Special Conditions, Safety Code, Model Rules for the protection of health and Sanitary arrangements for works, Specifications, Preambles and Schedule of Quantities and installation schedule, all of which are hereinafter collectively referred to as the 'said tender conditions' strictly in accordance with the drawings annexed hereto, and the specifications and schedule of quantities referred to above at or for the respective rates set out in the priced Schedule of Quantities amounting to the sum as there under arrived at or such other sums as shall become payable there under (hereinafter referred to as the said contract value).

NOW IT IS HEREBY AGREED AS FOLLOWS: -

1. In consideration of the said contract value to be paid by the Bank to the Contractor at the time and in the manner set forth in the said tender conditions and in accordance with the Schedule of payments to execute and complete the work shown upon the said Drawings strictly in accordance with the specifications and priced schedule of quantities.

2. The expression "Architect/ Interior Designer/ Consultant" in the said shall mean Architect/ Interior Designer/ Consultant for the Interiors and Furnishing of said Office viz. Interiors for the branch in the event of their or any of them ceasing to be Architect/Interior Designer/Consultant as the case may be, for whatever reason such other person or persons as shall be, appointed by the Bank. For that purpose, PROVIDED ALWAYS, that no person subsequently appointed to be Architect/ Interior Designer/Consultant, shall be entitled to disregard any opinion or decision or approval or instruction given or expressed in writing by the Architect/Interior Designer/Consultant/Consultants for the time being.

3. The said tender Conditions and the Annexure hereto shall be read and construed as forming part of this contract and the parties hereto shall respectfully abide by, submit themselves to the said conditions and perform the agreements on their part respectively contained in the said conditions.

4. The approved drawings mentioned herein shall also form the basis of this contract.

5. This Contract is neither a fixed Lump sum Contract, nor a piece work contract, but is a contract to carry out the work on item rate basis to be carried out and to be paid for according to the actual

measured quantities at the rates contained in the schedule of Quantities and probable quantities as contained in the priced Schedule of Quantities.

6. The contract herein contained shall comprise not only the works mentioned above but all subsidiary works connected therewith at and within the same site as may be ordered to be done from time to time by the said Architect/Interior Designer/Consultant for the time being, even if such work may not be shown on the said drawings or described in the said schedule of specifications and schedule of Quantities.

7. The Banks reserves to them the right of altering the drawings and the nature of the work through the Architect/Interior Designer/Consultant by adding to or omitting any items of work or having portions of the same carried out without prejudice to this contract.

8. Time shall be considered as the essence of this contract and the Contractor hereby agrees to commence the work within 7 days from the date of work order or handing over of the site as provided for in the said terms and conditions, whichever later, and shall complete the entire work within the specified period, subject nevertheless to be provisions for extension of time as may be agreed to by the Bank and as contained in the said conditions.

9. All payments by the Bank under this Contract will be made only at Ayodhya, Uttar Pradesh.

10. All disputes arising out of or in any way connected with this contract shall be deemed to have arisen at Ayodhya, Uttar Pradesh and only courts in Ayodhya, Uttar Pradesh shall have jurisdiction to determine the same.

11. This contract shall be signed in quadruplicate, the original where of shall be kept in the custody of the Bank, the duplicate with the Contractor, the triplicate with the Architect/Interior Designer/Consultant.

12. That the contract and several parts of this contract have been read by the contractor and fully, understood by the contractor. The contractor shall not be entitled for payment beyond tender quantities unless ordered specifically by written instructions of Bank.

IN WITNESS WHEREOF the Bank has set his hands hereunto and three duplicates hereof through his duly authorized official and the Contractor has caused these presents and three duplicates hereof under his common seal/by his duly authorized representative at the place and on the date month and year first herein above written.

SIGNED SEALED AND DELIVERED by UTTAR PRADESH GRAMIN BANK, the Bank by the hand of

Shri. _____

(Name and Designation)

in the presence of

(1) _____

Address: _____

(2) _____

Address: _____ WITNESS

SIGNED SEALED AND DELIVERED BY M/s. _____

The contractor by the name of Shri _____ (Name and Designation) in the presence of

(1) _____

Address: _____

THE COMMON SEAL OF M/s_____ the contractor was hereunto affixed pursuant to the resolutions passed by its Board of Directors at the meeting held on

_____ in the presence of :

(1) _____

(2) _____

Directors who have signed these presents in token thereof in the presence of

(1) _____

(2) _____

Interior Works

INDEX

General conditions of contract

1. INTERPRETATION.
2. SCOPE OF CONTRACT
3. GENERAL OBLIGATIONS

3.1	Contract
3.2	Total security deposit
3.3	Access to work
3.4	Tenderer to visit site
3.5	Inspection of site & sufficiency of Tender
3.6	Inspection of Drawings
3.7	Interpretation of contract documents
4.0	QUALITY CONTROL
4.1	Quality Assurance:
4.2	Drawings & Specification
4.3	Extent of Contract
4.4	MATERIALS & WORKS
5.0	VARIATIONS
5.1	Variations not to vitiate contract
5.2	Variations to be approved by the bank
5.3	DEFECTS
6.0	COST CONTROL
6.1	QUANTITIES
6.2	VARIATIONS
6.3	MEASUREMENTS
6.4	PAYMENTS & CERTIFICATIONS
6.5	MOBILIZATION ADVANCES
6.5.1	Mobilization advances 6.5.1-6.5.5
7.0	PROJECT MANAGEMENT
7.1	Programme of work
7.2	Commencement of work
7.3	Date of completion
7.4	Suspension of works
7.5	Work at night
7.6	Work at holiday
8.0	PERFORMANCE
8.1	GENERAL
	SITE MANAGEMENT

8.2	STAFF MANAGEMENT
8.3	SAFETY MANAGEMENT
8.4	RISK MANAGEMENT
9.0	FAILURE OF PERFORMANCE
9.1	Damages for non-completion
9.2	Failure by contractor to comply with Consultant's instruction
9.3	Determination of contract
9.4	Notices
9.5	Termination of contract by bank
9.6	Termination of contract by contractor
9.7	Foreclosure of contract in full or part
10.0	COMPLIANCE
10.1	COMPLIANCE TO BANK'S/ LEGAL NORMS
11.00	ROLE OF ARCHITECT/CONSULTANT
11.2	To Define Terms & Explain Plans
11.3	Matter to be finally determined by the Architect/interior Designer
11.4	Typographical or Clerical errors
11.5	Site visits
11.6	Address for service
11.7	Taking over
11.8	DISPUTES

GENERAL CONDITIONS OF CONTRACT

1. INTERPRETATION.

1.1. In constructing these conditions and the specifications, Schedule of Quantities and Contract Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:

1.2. "Bank" shall mean "Uttar Pradesh Gramin Bank" with its Corporate Office at 2nd and 3rd floor, NBCC commercial complex, Vardan Khand Gomti Nagar Extension Lucknow-226010 and shall include his/their heirs, legal representatives, assignees, and successors.

1.3. The "Architect/Consultant" shall mean the Architect named in the Tender, appointed by Bank for the said works.

1.4. The "Consultants" for Interior works shall mean the Consultants named in the Tender, appointed by the Architect to design the total Interior works on their own behalf for their Bank for the project.

1.5. "Contractor" / "Contractors" shall mean the person or the persons, firm or company whose tender has been accepted by the Bank and shall include his/their heirs, and legal representatives, the permitted assigns and successors.

1.6. "This Contract" - Shall mean the Articles of Agreement, the conditions, the Appendix, the Schedule of Quantities and specifications attached hereto and duly signed.

1.7. "Site" - Shall mean the site of the contracted works including any building and erection thereon and any other land (inclusively) as aforesaid allotted by the Bank for the contractor's use.

1.8. "Works" shall mean the works to be executed and recorded in accordance with the Contract and shall include all extra or additional altered or substituted works as required and recorded for the performance of the Contract

1.9. "Contract Documents" shall include the notice inviting Tenders, the Articles of Agreements, the General Conditions of Contract, the special conditions of contract, the Appendices, the Schedule of Quantities, Specifications for Materials, Work-Sheet and mode of measurements, and drawings pertaining to the work. All sections of this Contract Document are to be read together. Further such correspondence between the Bank / Architect/Consultant and Contractors as admitted by the Bank before award of work and thereafter shall also form part of contract documents.

1.10. "Drawings" shall mean the drawings referred to in the specifications, description of items etc. and any modifications of such drawings approved in writing by the Architect/Consultant and such other drawings as may from time to time be furnished or approved in writing by the Architect/Consultant.

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

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

1.13. "Virtual Completion" shall mean that the works are in the opinion of the Architect/Consultant complete or fit for occupation.

1.14. Words importing persons include firms and Corporations, words importing the singular only also include the plural and vice versa where the context requires.

1.15. Headings and marginal notes to these conditions shall not be deemed to form a part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

1.16. "Net Prices" - If in arriving at the contract amount the contractor shall have added to or deducted from the total of the items in the Tender any sum, either as a percentage or otherwise, then the net price of any item in the Tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the Tender as the price of that item a similar percentage of proportionate sum, provided always that in determining the percentage or proportion of the sum so added or deducted by the contractor the total amount of any Prime Cost Items and Provisional sum of money shall be deducted from the total amount of the Tender. The expression "net rates" or "net prices" when used with reference to the contract or accounts shall be held to mean rates or prices so arrived at. Words "importing persons" including firms and corporations. Words importing the singular only also include the plural and vice versa where the context requires.

2. SCOPE OF CONTRACT:

2.1. The contract comprises of the construction, completion and maintenance of the works, provision of all labour, materials, constructional plant, temporary works and everything whether of a temporary or permanent nature required in and for such construction, completion and maintenance.

2.2. The Contractor shall carry out and complete the works in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Architect/Consultant/Bank. The Architect/Consultant may in his absolute discretion and from time to time issue further drawings and/or written instructions, details, directions and explanations, which are hereafter collectively referred to as "instructions". These instructions shall be reflected either in the minutes or in any other form when Bank's approval/ consent is obtained in regard to: -

2.2.1. The variation or modification of the design, quality or quantity of works or the addition or omission or substitution of any work.

2.2.2. Any discrepancy in or divergence between the Drawings or between the Schedule of quantities and/or Drawings and/or specifications.

2.2.3. The removal from the site of any materials brought thereon by the Contractor and the substitutions of any other materials thereof.

2.2.4. The removal and/or re-execution of any works executed by the Contractor.

2.2.5. The postponement of any work to be executed under the provisions of this Contract.

2.2.6. The dismissal from the works of any person employed there upon.

2.2.7. The opening up for inspection of any work covered up.

2.2.8. The amending and making good of any defects.

2.2.9. Co-ordination of work with other agencies appointed by the Bank for due fulfilment of the total work.

2.2.10. The Bank shall have a right to delete any item of work from the scope of contract and contractor shall not make any extra claim on this account.

2.2.11. The Contractor shall forthwith comply with and duly execute any work contained in Architect/Consultants instructions whether oral or written, It is provided that verbal instructions, directions and explanations given to the Contractor or his representative upon the works by the Architect/Consultant shall, if involving a variation, be confirmed in writing by the Contractor within 5 days and if not dissented from in writing within a further 10 days by the Architect/Consultant, such shall be deemed to be the Architect/Consultant's instructions within the scope of the contract.

2.2.12. If Compliance with the Architect/Consultant's instructions involves any variation, the Bank shall pay the Contractor on the Architect's certificate the price of the said work (As an extra to be valued by the Architect as hereinafter provided).

2.2.13. If the Contractor fails to comply with the Architect/Consultant's instructions within a fortnight after the receipt of written notice from the Architect/Consultant requiring compliance with such instructions, the Bank through the Architect/Consultant may employ some other agency to execute any work whatsoever which may be necessary to give effect to such instructions

2.2.14. For the purpose of entering day-to-day instructions by the Architect/ Consultant, the Contractor shall maintain at his own cost, a "Site Instruction Book" in quadruplicate in which the instructions shall be entered by Architect/ Consultant.

2.2.15. Instructions to the Contractor shall be generally issued through Architect/Consultant. However, Bank may issue instructions directly, if deemed fit.

3. GENERAL OBLIGATIONS

3.1. CONTRACT:

The contractor shall enter into and execute a contract in the form annexed hereto within the line specified in the letter of intent and in default thereof the earnest money paid by the contractor shall be forfeited and acceptance of this tender shall be considered as withdrawn. The cost of the stamp of the agreement is to be borne and paid by the contractor.

3.2. TOTAL SECURITY DEPOSIT:

Total Security Deposit shall comprise:

- Earnest Money Deposit
- Initial Security Deposit
- Retention Money

3.2.1. EARNEST MONEY DEPOSIT:

a) The Tenderer shall deposit an Earnest Money Deposit (EMD), in the form of Demand Draft or Banker's cheque drawn in favour of Uttar Pradesh Gramin Bank at the time of submission of tender as Earnest Money.

- b) No tender shall be considered unless the Earnest Money is so deposited. No Interest shall be paid on this Earnest Money Deposit.
- c) The Earnest Money of an unsuccessful Tenderer will be refunded, without any interest, soon after the decision to award the work is taken.
- d) The Earnest Money Deposit shall stand absolutely forfeited if the Tenderer revokes his tender at any time during the period when he is required to keep his tender open for acceptance by the Bank, or if, after the tender is accepted, the Contractor fails to enter into a formal agreement/or if he fails to pay the security deposit as stipulated/or if he fails to commence the work within stipulated time limit.

3.2.2. SECURITY DEPOSIT:

- a) The successful Tenderer to whom the Contract is awarded shall deposit as initial security deposit by Demand draft or Bank Guarantee a sum to make up 2% of the value of the accepted tender after the appropriation of the Earnest Money deposited by him.
- b) The successful Tenderer shall pay security deposit within Ten days after receiving the letter of acceptance of his tender. No interest shall be paid on this security deposit.
- c) The security deposit, either in whole or in part thereof, shall be forfeited in the event of the Contractor's failure to observe any terms of this Contract/or non-compliance with the conditions of the Contract.
- d) On virtual completion of the job and on the Contractor's submitting to the Architect/Consultant the "As built" drawings, the Architect/Consultant shall declare the job to be virtually complete and issue a certificate to this effect. Upon acceptance by Bank of such certificate, Security Deposit will be refunded after adjusting any dues recoverable from the contractors.

3.2.3. RETENTION MONEY:

- a) In addition to the Initial Security Deposit, retention money shall be deducted from running account bills at 8% of gross value of certified work. Till total 5% retention is achieved
- b) If the Contractors do not carry out the rectification work during the Defects Liability Period, the Banks shall have the right to get such defective work rectified after giving due notice in writing to the Contractors and recover the cost of repairs from the monies so retained.
- c) On acceptance of Virtual Completion certificate, 50% of the total Security Deposit will be released.
- d) The Balance 50% of Security Deposit shall be released upon completion of 12 Months from the date of acceptance of Virtual Completion Certificate within 15 days after adjusting all dues if any from the contractor.

3.3. ACCESS TO WORKS:

The Architect/Consultant/Bank and any person authorized by them shall at all reasonable times have free access to the works, and to the workshops, Factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained. The Contractor shall give every facility to the Architect/Consultant/Bank and their representatives for inspection and examination and test of the materials and workmanship. No person unless authorized by the Architect/Consultant or the Bank,

except the Representatives of Statutory Public Authorities authorized by the Bank, shall be allowed on the works at any time. If any work is to be done at a place other than the site of the works, the Contractor shall obtain the written permission of the Architect/Consultant/ Bank for doing so.

3.4. TENDERER TO VISIT SITE:

Each Tenderer must before submitting his tender visit the site of works so as to ascertain the physical site conditions and prices, availability and quality of materials according to Specifications before submitting the quotations.

3.5. INSPECTION OF SITE AND SUFFICIENCY OF TENDER:

3.5.1. The Contractor shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his tender as to the form and nature of the site, the quantities and nature of access to the site, the accommodation he may require and in general, shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his tender.

3.5.2. The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of work/items/quantities or in Bills of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for proper completion and maintenance of the works.

3.5.3. No extra charges consequent on any misunderstanding or otherwise shall be allowed.

3.6. INSPECTION OF DRAWINGS:

Before filling in the Tender, the Tenderer will have to check up all Drawings and Schedule of Quantities, and will have to get an immediate clarification from the Architect/Consultant on any point that he feels is vague or uncertain. No claim nor damages or compensation will be entertained on this account.

3.7. INTERPRETATION OF CONTRACT DOCUMENTS

3.7.1. The various sections of tender / contract documents are intended to be complementary to one another.

3.7.2. In case of a discrepancy in the description of a subject between different sections, the following guidelines shall generally apply.

3.7.3. Special Conditions of Contract shall override General Conditions of Contract.

3.7.4. Special specifications shall override General specifications.

3.7.5. For the sole purpose of determination of rates and prices, the Schedule of Quantities including its Preamble shall override Specifications and drawings.

3.7.6. Detailed drawings shall override General layout drawings.

3.7.7. Hard copies of the drawings shall override Softcopies.

3.7.8. Irrespective of these general guidelines the Contractor shall bring any discrepancy he notices immediately to the attention of the Architect/Consultant and shall follow Architect/Consultant's instructions accordingly.

4. QUALITY CONTROL

4.1. QUALITY ASSURANCE:

The contractor shall prepare a detailed quality assurance programme to control activities connected with the work to ensure a quality job at various stages

- Planning
- Execution
- Completion
- Post Completion Maintenance

4.2. DRAWINGS AND SPECIFICATIONS:

4.2.1. The Work shall be carried out to the entire satisfaction of the Bank / Architect/Consultant and in accordance with the signed drawings, specifications, preambles and such further drawings and details as may be provided by the Architect/Consultant and in accordance with such written instructions, directions and explanations as may from time to time be given by the Bank / Architect/Consultant whose decisions as to sufficiency and quality of the work and materials shall be final and binding upon all parties.

4.2.2. No drawing shall be taken as in itself an order for execution unless, in addition to the Architect/Consultants signature, it bears express words stating remark "FOR CONSTRUCTION."

4.2.3. Three complete sets of the signed Drawings and Specifications and Schedule of Quantities shall be furnished by the Architect/Consultant to the Contractor. Such copies shall be kept on the works, and the Architect/Consultant or his Representatives shall at all reasonable time have access to the same.

4.2.4. All drawings and specifications shall be returned to the Architect/Consultant by the Contractor before the issue of the final certificates. The original copy of contract shall remain in the custody of the Bank and shall be produced by him at his office as and when required.

4.2.5. Any additional prints of drawings if any, required by the contractor will be supplied by the Architect/Consultant on the payment of charges as stipulated in clause 4.2.9.

4.2.6. Over and above, Soft Copies of the drawings will be issued by the Architect/Consultant if requested by the Contractor. Necessary protection will be used by the Architect/Consultant to prevent willful editing of such softcopies of the drawings by the contractors. In case of any dispute on between Contractor and Architect Consultant on sanctity of such drawings, hard copies issued by the Architects/Consultants shall prevail and by binding on both the parties.

4.2.7. DIMENSIONS:

Figured dimensions are in all cases to be followed and in no case should they be scaled. Large-scale details take precedence over small-scale drawings, in case of the discrepancy; the Contractor is to ask for an explanation before proceeding with the work.

4.2.8. ISSUE OF EXTRA CONSTRUCTION DRAWINGS:

a) Architect/Consultant will supply two sets of drawings to the Contractor for construction. Extra prints of drawings for construction will be issued on chargeable basis by Architect/Consultant as detailed hereunder:

i) A0-Size Rs. 200.00 each ii) A1-Size Rs. 100.00 each iii) A2-Size Rs. 75.00 each iv) A3-Size Rs. 50.00 each v) A4-Size Rs. 25.00 each

b) The Contractor shall ensure that all the bills furnished by the Architect/Consultant's Office in this regard are honoured, failing which the certificate for payment of Contractor's next Interim Bills will be withheld. The drawings are to be used only for the project concerned.

4.2.9. CONSTRUCTION DRAWINGS:

a) The successful Tenderer shall state, on receiving the Letter of Intent, what drawings are yet to be issued by the Architect/Consultant for construction purposes and what further details are required by him from the Architect/Consultant. Silence on the part of the successful Tenderer in this regard will be construed to mean that he has all the information that he needs for ordering out materials and for contractual purposes. Unless specifically asked for in writing, delays later claimed by the successful Tenderer on account of drawings will not be construed as reason for delay in the execution of the work.

b) Apart from clarifications sought during the periodic visits to site by the Architect/Consultant's representative, the successful Tenderer shall obtain all clarifications on the Architect/Consultant's drawings from their office.

c) Extra/Variations not registered within 2 weeks on receipt of drawings will not be entertained.

4.2.10. SHOP DRAWINGS AND TECHNICAL DATA

The Contractor shall submit, in triplicate within mobilization period on receipt of acceptance of the tender, detailed shop drawings, and specifications showing the complete details of all relevant works required to be done by Uttar Pradesh Gramin Bank in connection with the Interiors. He will be held responsible for any discrepancies, errors, and omissions in the drawings or particulars submitted by him even if these have been approved by the Architect/Consultant. Any delay in submitting shop drawings shall be the Contractor's responsibility and shall be to his account.

4.2.11. COMPLETION DRAWINGS/ACCEPTANCE OF INSTALLATIONS:

a) The Contractor shall submit the required guarantees for the works in approved formats as well as performance guarantees for those items of works for which such guarantees are required.

b) Before handing over the interiors, 3 copies of maintenance manual for major items shall be furnished to the Bank along with 3 sets of "as built" drawings of all the works done as executed by the contractor.

c) In addition to hard copy of as built drawings, the contractor shall also supply soft copies of these drawings in AutoCAD – 2012 OR latest version format similarly the maintenance manual etc. shall also be supplied in soft form with suitable indexing format for easy retrieval and reference.

4.2.12. TECHNICAL DATA:

Technical Data of relevant items shall be furnished as required.

4.2.13. ACTION WHERE THERE IS NO SPECIFICATION:

In the case of any class of work for which there is no Specifications mentioned, the same shall be carried out in accordance with the Indian Standard Specifications subject to the approval of the Architect/Consultant.

4.2.14. EXTENT OF CONTRACT:

Items executed shall be complete in all respect with accessories, fittings as required though they may not have been specifically mentioned in the technical specification. All similar standard components/parts of similar items shall be inter-changeable.

4.3. MATERIALS & WORKS

4.3.1. APPROVAL OF SUPPLIERS:

For all supplies, the names of manufacturers/brands have to be got approved by the Architect/Consultant from the Bank after getting the respective samples first approved by the Architect/Consultant as the case may be. All materials will be of tested quality and as per relevant Indian Standards. In addition to the Test Certificates, mandatory tests will also be done on them by the Architect/Consultant at an approved laboratory at the cost of the contractor immediately as well as at regular frequency laid down in the relevant Indian Standards.

4.3.2. MATERIALS SUPPLIED BY THE BANK:

If the Bank supplies any materials, the Contractor must satisfy himself that the same conform to the Specifications. If the Contractor has any complaint, about the said materials, or the quality thereof the Contractor before using the said materials inform in writing all their objections to the Bank. Should the Contractor fail to do so, he will be deemed to have satisfied himself as to the quality and the suitability of the said materials for being used in the Contract works and the Contractor will be in the same position as if the Contractor himself had purchased the said materials.

4.3.3. MATERIALS AND WORKMANSHIP TO CONFORM TO DESCRIPTION:

a) All materials and workmanship shall, be of the respective kinds specified in the Schedule of Quantities and /or specifications and in accordance with the Architect/Consultants instructions and / or any test of all materials, which the contract provides for, and Architect/Consultant may require. The Contractor shall submit the samples of various materials, to Architect/Consultant/ Bank for approval. Further, the contractor shall upon the request of Architect furnish him with all invoices, accounts, receipts and other vouchers to prove that the materials comply therewith. The contractor shall at his own cost arrange for and/or carry out the test of any materials which the Architect may require.

b) If the Contractor contends that any of the materials, goods or workmanship specified as aforesaid, is unobtainable, he shall submit to the Bank his grounds for his contention, and thereupon the Architect/Consultant/Bank shall verify the same and if required issue necessary clearances and/or instruction in writing.

5. VARIATIONS

5.1. VARIATIONS NOT TO VITIATE CONTRACT:

5.1.1. The Contractor shall when directed in writing by the Architect/Consultant to omit from or vary any works shown upon the drawings or described in the specifications or included in the priced Schedule of Quantities, carry out such directions but the Contractor shall not make any alterations in the provisions of the Contract without such authorization or direction in writing from the Architect/Consultant/ Bank.

5.1.2. No claim for any extra work executed shall be allowed unless it shall have been executed by the authority of the Architect/Consultant as herein mentioned. No variation, i.e. additions, omissions or substitutions shall vitiate the Contract

5.1.3. No claim for payment for extra work shall be allowed unless the said work shall have been executed under the provisions of Clause "Authorities, Notices, Patent Rights and Royalties", or by the authorities, directions in writing of the Architect/Consultant as herein mentioned.

5.1.4. The rate of items not included in the Bill of Quantities shall be settled by the Architect/Consultant in accordance with the provisions of relevant clauses for variations.

5.2. VARIATIONS TO BE APPROVED BY THE BANK

5.2.1. Notwithstanding additional thing herein contained the rates for such extra/variation items shall be derived as far as possible from like items in the tender, adding/subtracting cost for such variations from like items.

5.2.2. In the event of such extra/variation items totally differ in specification/character/nature, rates for such items will be worked out based on prevailing market rates for the ingredients that go into making such of items and finalized by the Architect/Consultant in consultation with the Bank.

5.3. DEFECTS

5.3.1. DEFECTS AFTER COMPLETION:

Any defect in work and materials or due to unsound installation or other faults which may appear either in the work executed or in materials used within the "Defects Liability Period" stated in the Appendix to General Conditions of Contract hereto or if none stated, then for a period of twelve months after the Virtual Completion of the work, arising in the opinion of the Architect/Consultant/Bank from materials or workmanship not being in accordance with the Contract, shall upon the directions and writing of the Architect/Consultant, and within such reasonable time as shall be specified therein, be amended and made good by the Contractor, at his cost unless, the Architect/Consultant in consultation with the Bank shall decide that he ought to be paid for such amending and making good and in case of default the Bank may employ and pay other persons to correct the 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/Consultant's certificate in writing from the amount retained with the Bank vide relevant Clause for "Certificate and Payment" or any money due or that may become due to the Contractor or the Bank may in lieu of such amending and making good by the Contractor, deduct from such money a sum, to be determined by the Architect/Consultant, equivalent to the cost of amending such works, and in the event the said amount retained under relevant clause For "Certificate

and Payment " and/or the other sums payable to the Contractor being insufficient, recover the balance from the Contractor.

5.3.2. INSPECTION & TESTS

a) ACCESS FOR INSPECTION:

The Contractor is to provide at all times during the progress of the works and the maintenance period proper means of access, ladders, gangways etc. and the necessary attendants to move and adapt the same as directed for the inspection or measurement of the works by the Bank/ Architect/Consultant/Bank or their representatives.

5.3.3. TESTING OF WORKS AND MATERIALS AND PREPARATION OF SAMPLES:

a) The Contractor shall arrange to test materials and/or portions of the works as instructed by Architect/Consultant /Bank to specifications/ ISI standards at his own cost, in order to provide their soundness and efficiency. If after any such test, the work or portions of the works are found to be defective or unsound, the Contractor shall pull down and re-erect the same at his own cost.

b) Samples of various materials shall be submitted by the Contractor for approval prior to ordering out the same. Wherever necessary the Contractor shall, at his own cost, prepare samples to indicate the workmanship.

5.3.4. TEST DATA

All the materials shall be tested jointly with the Bank/Architect/Consultant as required by the various sections of the specification and Test Data, shall be furnished as required.

5.3.5. GENERAL CONDITIONS FOR TESTS TO BE CALLED FOR APPROVAL PURPOSE

a) The Contractor shall carry out in the presence of Bank's Representative all specified tests. Such tests shall be carried out at the manufacturer's works or at the works of the Contractor or approved Sub-Contractor.

b) The Contractor shall then forward all the relevant copies of Tests so performed in 3 sets for the record of the Bank/Architect/Consultant. No compensation of any kind will be payable to the Contractor for carrying out such tests.

c) The Contractor shall give clear 15 days' notice in writing for all such tests to be carried out at relevant place of Manufacture, Works, and Sub-works etc.

6. COST CONTROL

6.1.1. SCHEDULE OF QUANTITIES:

a) The Schedule of the Quantities unless otherwise stated shall be deemed to have been prepared in accordance with the standard procedure of the Architect/Consultant, and shall be considered to be approximate and no liability shall attach to the Architect/Consultant /Bank for any error that may be discovered therein.

6.1.2. SUFFICIENCY OF SCHEDULE OF QUANTITIES:

- a) The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the prices stated in the Schedule of Quantities and/or the Schedule of Rates and Prices, which rates and prices shall cover all his obligations under the Contract, and all matters and things necessary for the proper completion of the works.
- b) The Contractor shall check all the interior drawings and details prepared by the Architect/Consultant and report errors if any in the drawings or details.

6.1.3. ERRORS IN SCHEDULE OF QUANTITIES:

- a) Should any error appear in the Schedule of Quantities, other than in the Contractor's prices and calculations, it shall be rectified, and such rectification shall not vitiate the Contract but shall constitute a variation of the Contract and shall be dealt with as an authorized extra or deduction

6.1.4. Prime cost & Provisional sums:

- a) Where "Prime cost"(p.c.) prices or provisional sums of moneys are provided for any goods or work in the specification / Schedule of Quantities the same amount will be exclusive of any trade discounts or allowances, cash discounts, profit, carriage and fixing which the contractor may require.
- b) All goods or work for which prime cost prices or provisional sums of money are provided may be selected or ordered from any manufacturers or firms at the discretion of the Architect of the Bank and the Bank reserves to himself the right of paying direct for any such good or Work and deducting the said prices and sums from the amount of contract. Should any good or work for which prime cost prices or provisional sums are provided or portions of the same be not required, such prices or sums, together with the profits allowed for the same and such additional amounts as the contractor may have allowed for carriage and packing will be deducted in full from the contract, whether the goods be ordered by the contractor or otherwise, the contractor shall at his own cost fix the same if called upon to do so and the contractor shall also receive and sing for such goods and be responsible for their safe custody from the date of their delivery upon the works.
- c) In cases in which the provisional quantities of materials are contained in the contract, the contractor shall provide such material to such amounts or to greater or less amounts as the Architect shall direct in writing as the net rates at which he shall have priced such items in his schedule of Quantities, should however any such items be entirely omitted, which omission shall be at the Architect's discretion, no profit or such items shall be allowed to the contractor.
- d) No prime costs sum or sums (or any portion thereof) shall be included in any certificate for payment to the contractor until the receipted accounts relating to them have been produced by the contractor to the Architect. Such accounts shall show all discounts and any sum or sums in respect of such discounts shall be treated as trade discount provided always that should the contractor in lieu of producing such receipted accounts request the Architect in writing to issue a Certificate on the Bank for such sum or sums due either on account in settlement to a sub-contractor direct, the architect shall, upon satisfying himself that the sub-contractor is entitled to the same, so issue the certificate, and such sum or sums shall be deducted from the amount of the contractor at the settlement of accounts and any profit or further sum which the contractor is property entitled in respect of such sub-contract, and which is in conformity with the terms of the contract, shall be allowed to the contractor at the settlement of accounts as though the amount of such certificate to the sub-contractor had been included in a certificate drawn in favor of the contractor.
- e) If the Contractor neither produces the receipt nor gives authority to the

Architect to issue a certificate in favour of such sub-contractor directly, the Architect shall, upon giving the contractor seven days' notice in writing of his intentions to do so, issue to the Sub-contractor such Certificate directly on the Bank and obtain the receipt from the Sub-contractor, which receipt shall be deemed a discharge for the amount of such certificate as though given by the Contractor. In the event of such default on the part of the Contractor, he shall not be allowed any profit he may have added in the Schedule of Quantities upon such Such-contract.

f) The exercise of the option before referred to by the contractor and the issue of certificate as before described to Sub-contractors upon the Contractor's request on the issue to sub-contractor direct of certificate by the Architect shall not, however, relieve the Contractor from any of the liabilities in respect of insufficient, faulty or in completed work or the Subcontractor for which he may be liable under the terms of the contract.

g) If any provisional items are provided for work of an nature usually carried out by the contractor in the ordinary course of his business, the Bank shall give the contractor an opportunity of tendering for the same without prejudice to the Bank's right to reject the lowest or any tender.

6.2. VARIATIONS

6.2.1. EXTRA ITEMS / DEVIATIONS:

a) The Contractor shall not commence work in respect of any extra items/deviations without obtaining the approval of the Architect/Consultant in writing. The Contractor shall immediately submit the rate analysis for such item, with necessary details to support the rate quoted. The rate shall then be settled by the Architect/Consultant/Bank and necessary certificate based on this shall be given to Bank while incorporating the item in the Interim Bills.

b) Claims for extra/deviated items shall be submitted in the as per specimen copies of Performa included in this tender document that indicate authority/order for such items.

6.2.2. SCHEDULE OF QUANTITIES - VARIATION IN TENDER QUANTITIES

Quantities in this tender are subject to any variation by way of addition, reduction or deletions of the items or quantities. No compensation whatsoever will be paid for such variations.

6.2.3. PRICES FOR EXTRAS ETC. - ASCERTAINMENT THEREOF:

a) Should it be found from measurements taken in accordance with the clause on "Measurement of works" that any of the quantities or amounts of works thus ascertained are less or greater than the amounts specified for the works in the priced schedule of quantities and/or that any variation is made from the tender schedule of items by operating Additional items called "Extra Items" or "Substitute Items" in substitution of some tendered items, the rate and valuation thereof, of such items unless previously or otherwise agreed upon, shall be made in accordance with the following rules: -

b) The net rate or prices in the original Tender shall determine the valuation of the extra quantities where extra quantities for any item are of similar character and executed under similar conditions as the work priced therein. In other words variation in quantities shall be measured and paid at quoted price only.

- c) The net rate or prices in the original Tender shall determine the rate for the items altered, provided if omissions / additions vary the conditions under which any remaining items of works are carried out, the prices for the same shall be valued under (b) hereof.
- d) For extra items/Substitute items where the description of items is different from that of any tendered item, the following method shall hold good.
- e) Where the extra item works are not of similar character and/or executed under condition as aforesaid or where the omissions vary, the conditions under which any remaining items of works are carried out or if the amount of any omission or additions relative to the amount or the whole of the Contract works or to be any part thereof shall be such that in the opinion of the Architect/Consultant the net rate or price contained in the priced Schedule of Quantities or tender or for any item of the works involves loss or expenses beyond that reasonably contemplated by the Contractor or is by reason of such omission or addition rendered unreasonable or inapplicable, the Architect/Consultant shall fix such other rate or price as in the circumstances he shall think reasonable and proper on the basis of actual rate analysis cost of work involved plus fifteen percent (15%) towards Contractor's overheads and profits, which shall be final and binding on the Contractor.
- f) The measurement and valuation in respect of the Contractor shall be completed within the "period of Final Measurement" or within three months of the completion of the Contract works as defined under Clause For "Certificate of Virtual Completion".
- g) The Contractor shall submit the claims for Deviated items and Extra items as per proforma annexed hereto.

6.3. MEASUREMENTS

6.3.1. MEASUREMENT OF WORKS:

- a) The Architect/Consultant shall from time to time intimate the Contractor that he requires the works to be measured and the Contractor shall forthwith attend or send a qualified agent to assist the Architect/Consultant's representative in taking such measurements and calculations and to furnish all particulars or give all assistance required by either of them.
- b) Should the Contractor omit to attend or neglect or omit to send such agent, then the measurements taken by the Architect/Consultant or approved by him shall be taken to be the correct measurements. The works shall be measured according to the mode of measurements specified in the Contract documents and, where no mode is specified, as per the latest edition of relevant I.S. Codes.
- c) A certain percentage of measurements will be checked/test checked by the Bank as the case may be for each trade, and for this the contractor has to render all necessary assistance and co-operation.
- d) The Contractor or his Agent may at the time of measurement take such notes and measurements as he may require.
- e) All authorized extra works; omissions and all variations made without the Architect/Consultant's knowledge, but if subsequently sanctioned by the Bank in writing, shall be included in such measurements.

6.3.2. MODE OF MEASUREMENT

- a) The mode of measurement for this contract shall be on item rate basis and shall include all quantities specified in the Schedule of Quantities of this tender/ contract. It shall be further deemed that all variations and deviations if specifically agreed to in writing shall also form part of this tender/ contract and shall be subject to measurements. All payments released to the Contractor shall be subject to verification of quantities on the basis of mode of measurements herein stated.
- b) If the mode of measurement for any or all item is not specified in the contract, latest relevant IS. Code will prevail.
- c) The Contractor shall give due notice to the Bank/ Architect/Consultant in writing whenever any work is to be concealed or made inaccessible, in order that the work may be inspected and correct measurements are recorded before such concealment, in default whereof the same shall be at the option of the Architect/Consultant/ Bank to either open up for measurement at the Contractor's expense or no allowance shall be made for such work.

6.4. PAYMENTS & CERTIFICATION

6.4.1. CERTIFICATE & PAYMENT:

- a) The Contractor shall be entitled for periodic Interim Certificates for work done of a minimum value as specified in Appendix hereto to be issued by the Architect/Consultant to the Contractor, and within stipulated number of days for ad hoc payment (if allowed) and for full settlement of the bill as indicated in appendix to General Condition of Contract hereto, subject to work being executed in accordance with this Contract and reasonable scrutiny by the Bank. The Retention at the given percentage rate of the value of certified work as indicated in the appendix subject to the specified limit shall be deducted from running bills. The Contractor shall be entitled under the Certificate to be issued by the Architect/Consultant, to receive payment of 50% of the total retention amount (deducted from all the running account payments) and 100% security amount (2% of the contract amount collected on award of the contract) after virtual completion and balance 50% of the Security Deposit at the end of the defects liability period, provided the defects are made good, according to the true intent and meaning hereof after due completion of work. Should any decorative works or painting be deferred on the Instruction of the Architect/Consultant under the relevant "Clause for "Suspension of Works", payments for such decorative work or painting shall be made up to the stipulated percentage on completion and the balance at the expiration of 6 months from that date? Provided always that the issue by the Architect/Consultant of any certificate during the progress of the works or after their completion shall not have effect as a Certificate of satisfaction or relieve the Contractor from his liability under the clause "Defects after Completion" and within the extent and period provided by the Statute of Limitations.
- b) The Architect/Consultant shall have the powers to withhold any Certificate if the works or any part thereof is not carried out to his satisfaction.
- c) The Architect/Consultant may by any Certificate make any correction in any previous certificates, which shall have been issued by him. In the event if it comes to the Bank's notice any omission or corrections required in bill certified by Architect/Consultant, the Bank shall effect necessary corrections and the contractor shall be bound to accept the same. This certificate is particularly essential for settlement and payment of the Final Bill.
- d) The Contractor shall submit interim bills only after working out the appropriate measurements jointly recorded with Architect/Consultant at site in a register and showing the register to

Architect/Consultant. This is not only to regulate the correctness of the quantity but also to facilitate expeditious clearing of the bills. The bills shall be submitted in the following proforma.

As per tender					Previous Bills	Up-to-Date Bills			Remarks
Tender No.	Item	Brief Description	Qty Unit	Rate/unit	Qty Unit	Qty Unit	Amt. /Unit	Rs.	

Note: If any part/reduced rate is proposed by the Contractor (recommended by Architect/Consultant) the same should be brought out in the remarks column along with reasons.

- e) The Bank shall carry out test checking of measurement as and when required.
- f) If agreed by the Bank in writing, the Contractor shall be paid for Supply of major items and materials – (75%) of value of material or item rate on prorated basis against delivery of materials at site -whichever is lower, on a Certificate, issued by the Architect/Consultant, in regard to quantity and, in conformity with the Contract Specifications. However, this advance will be given to the contractor against the stamped undertaking as per the proforma E in Annexure. On payment of (75%) for supply of materials and items, the property in goods shall vest in the Bank and the contractor will keep it in his custody indemnifying the Bank against any damage, loss, theft or mishap attributable to their storage.
- g) The final bill shall be submitted by the Contractor within One month of Virtual Completion Certificate received by the Contractor duly endorsed by the Architect/Consultant and the Architect, and such bill shall be settled and certified for payment by the Architect/Consultant within four weeks of the receipt of the Certificate of payment from the Architect/Consultant.
- h) Payments upon the Architect Consultant's Interim certificate shall be made within a period mentioned in the appendix as "Period of Honoring of Interim Certificates" after such Certificates have been received and accepted by the Bank. The Bank shall make payment upon the Architect/Consultant's Final Certificate within a period of Four weeks from the date of its receipt and acceptance of the certificate.
- i) The Contractor shall submit Proforma (A) and (B) serially numbered with dates for all extra/deviated items of work.
- j) Contractor shall, without fail, submit along with his R.A. Bills/ Final Bills test certificates as specified.
- k) Running Account Bills (R.A .Bills)/Final Bill received without the test certificates duly approved by Architect/Consultant shall be returned to the Contractor for the reason of the same being not submitted duly.

6.4.2. Ad hoc payment for INTERIM BILLS:

No Ad hoc payment will be paid to the Contractor on interim bills unless expressly agreed by the Bank.

6.4.3. CERTIFICATE FOR PAYMENT TO CONTRACTOR:

The Contractor's bills will be submitted to Bank through the Architect/Consultant for payment as per proforma enclosed for Interim Bill Certificate and final Certificate. The Architect/Consultant in confirmation that the work has been carried out satisfactorily as per detailed drawings and specifications will endorse and certify the bill.

6.4.4. CERTIFICATE OF VIRTUAL COMPLETION OF WORKS:

a) The Contractor shall report in writing to the Architect/Consultant, in the form of a Certificate as per Proforma 'D' annexed hereto as and when the works are completed in all respects. The Architect/Consultant shall after the verification of the works and in Consultation with Bank issue to the Contractor a certificate to be called "Virtual Completion Certificate", a copy whereof shall be submitted to the Bank to enable them to take possession of the completed works.

b) The works shall not be considered as completed till the Architect certifies in writing that all the work including those mentioned in the snag list prepared jointly with Architect/Consultant/Bank prior to the acceptance of the Virtual Completion. The defect liability period shall commence only from the date of issue of such certificate.

6.4.5. LIEN ON SUMS PAYABLE TO THE CONTRACTORS

Any sums of money due and payable to the Contractor including any deposits returnable to them under this Contract may be withheld or retained by the Bank, against any claim of the Bank against the contractor in respect of any sums of money due under this contract or any other contract made by the contractor with the Bank, but limited to the amount of Bank's claim and the Bank shall always have a lien upon the money so withheld or retained as such by the Bank until appropriated towards such claim. The contractor shall not be entitled to claim any interest or damages whatsoever on such retained or appropriated sum.

6.5. MOBILISATION ADVANCE:

6.5.1. On written application from the Contractor, the Bank may grant mobilization advance up to 10% of the amount of accepted tender. The mobilization advance will be released against production of Bank Guarantee for like amount. The advance shall be released after Contractor satisfies Architect/Consultant with production of documentary evidence that this amount of Mobilization Advance shall be used for procurement of material/equipment/labour for the work. The advance shall attract simple interest at the rate of (15%) per annum. The advance shall be secured by a Bank Guarantee from a Scheduled Bank (other than the Bank) for the amount of mobilization Advance plus interest at the rate of 15% per annum (in approved proforma), which will be recovered in the manner described hereinafter.

6.5.2. The amount of mobilization advance which may be given to the Contractor shall be at the sole discretion of the Bank.

6.5.3. The mobilization advance shall be utilized by the Contractor for the purpose of this contract only and for no other purpose.

6.5.4. 100% recovery of the mobilization advance and of interest there on shall be made by deduction from the Contractor's next running account bills.

6.5.5. If at any time the Contractor fails to execute the contract to the satisfaction of the Bank for any reason what so ever the Bank shall be entitled to recall forthwith the entire amount so advanced with

interest, cost and legal expenses, etc. and/or recover the whole balance amount as the case may be from the bill if any, payable to the Contractor or by enforcing the bank guarantee at the discretion of the Bank.

7. PROJECT MANAGEMENT

7.1. PROGRAM OF WORK:

7.1.1. Various milestones to be achieved. The Tenderer shall, along with his bid, submit a schedule for completion of work, either in the form of a CPM Net Work or in the form of a bar chart, showing how he proposes to complete the works. This program shall be prepared in sufficient detail and shall indicate, among other things, the following details on a month-to-month basis (for each month).

- a) Quantum of work under each major item of work that would be carried out. b) List of Sub-contractors.
- c) Amount of resources that would be deployed (e.g. materials, skilled/unskilled labour, equipment etc.)
- d) Schedule of delivery of materials to site.
- e) Approximate value of work contemplated to be completed each month.
- f) Schedule and manner in which details or materials (to be issued by the Bank) are required from the Architect/Consultant /Bank
- g) Time periods allowed for other agencies' work, h)

7.1.2. This program suitably amended after discussions with the Architect/Consultant shall become binding on the Contractor. However, during the execution of the project, should it become necessary, in the opinion of the Architect/Consultant to reschedule some of the activities, the Contractor shall do so at no extra cost and/or without any other claim.

7.1.3. Acceptance of a bidder's tender does not necessarily imply acceptance of the schedule submitted and the Architect/Consultant /Bank reserve the right to modify/amend this schedule to suit the overall project schedule which will be binding on the Contractor at no extra cost to the Bank.

7.2. COMMENCEMENT OF WORK

The contractor shall be allowed admittance to the site on the "date of Commencement" stated in the Appendix and on submission of the valid tamper-proof photo Identity Card (and/or in any other form), duly endorsed by the Contractor, for all their labour, and staff in accordance with the Banks prevailing security requirement.

7.2.1. The Contractor shall commence work forthwith or within the mobilization period defined in the Work order or within the maximum period of 15 days, whichever is later, from the date of receipt of Work Order and shall regularly proceed with the work and ensure to complete same on or before the "day of Completion" stated in the Appendix subject nevertheless to the provisions for extension of time hereinafter contained.

Until the site is partly / fully handed over to the Contractor, the commencement of work shall include off-site activities including planning, procurement of materials shop drawings, manufacture/fabrication, interaction with Architect/Consultant / other contractors etc.

7.3. DATE OF COMPLETION:

7.3.1. The entire work shall be completed in all respects including testing within the period stipulated in the Appendix to General Conditions of Contract.

7.3.2. Time is the essence of the Contract.

7.3.3. The work shall not be considered complete until the Architect / Consultant has certified virtual completion in writing. The defects liability period shall commence from the date of such certificate.

7.3.4. During the period of Contract, the Contractor shall maintain progress on the basis of the programme initially agreed to by Bank / Architect/Consultant and later updated from time to time in consultation with Bank/Architect/Consultant to suit the overall project schedule and prevailing site conditions.

7.3.5. DELAY AND EXTENSION OF TIME:

a) If in the opinion of the Bank the works be delayed

- i) by force majeure or ii) by reason of any exceptionally inclement weather or
- iii) by reason of proceedings taken or threatened by the dispute with adjoining or neighbouring Banks or public authorities arising otherwise than through the Contractor's own default or
- iv) by the works or delays of other Contractors or tradesmen engaged or nominated by the Bank or the Architect/Consultant and not referred to in the Schedule of Quantities and/or Specifications or
- v) by reason of the Architect/Consultant's instructions.
- vi) by reason of civil commotion, legal combination of strike or lock-out affecting any of the building traders or in consequence of the Contractor not having received in due time necessary instructions from the Architect/Consultant for which he shall have specifically applied in writing, ahead of time, giving the Consultant reasonable time to prepare such instructions, the Bank shall make a fair and reasonable extension of time for completion of the Contract works. In case of such strike or lock-out, the Contractor shall, as soon as may be, given written notice thereof to the Architect/Consultant, but the Contractor shall nevertheless constantly use his endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the Architect/Consultant to proceed with the work.

b) The Contractor shall proactively take all practicable steps to avoid or reduce any delay in the execution and completion of the works arising out of

- i) Force Majeure
- ii) Exceptionally inclement weather iii) Loss and damage by fire and earthquake iv) Civil commotion, lockout, strike etc.
- v) Delay on the part of the nominated Sub-Contractor or nominated supplier.
- vi) Delay on the part of the other Contractors employed by the Bank.

7.4. SUSPENSION OF WORKS:

The Architect/Consultant may in an extreme case and in prior consultation with the Bank suspend works if the quality or safety of the works are likely to be compromised due to heavy rains, natural calamities etc. The Architect/Consultant may grant such extension of time with the approval of the Bank as may be justified by such a delay in the works. The Contractor shall not be entitled to any compensation on account of such delay

7.5. WORK AT NIGHT:

7.5.1. If the Contractor is required to work at night in order to complete the work within the Time Schedule, the Contractor shall provide and maintain at his own cost sufficient lights to enable the work to proceed satisfactorily without danger. Approaches to the site also shall be sufficiently lighted by the Contractor. No extra payments will be made for night work. Prior intimation and approval should also be taken from Architect/Consultant.

7.6. WORK ON HOLIDAY:

7.6.1. No work shall be done on national holidays that may be notified by the Bank without the specific sanction in writing of the Bank/ Architect/ Consultant.

8. PERFORMANCE

8.1. GENERAL

8.1.1. INDEPENDENT CONTRACTOR

a) The Contractor agrees to perform this Contract as an independent Contractor and not as a sub-Contractor, agent or Employee of the Bank.

8.1.2. ASSIGNMENT OR SUB-LETTING:

a) The whole of the works included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the Contract or any part/ share thereof or interest therein, nor shall he take a new partner, without the written consent of the Architect/Consultant/ Bank and no undertaking shall relieve the Contractor from the full and entire responsibility of the Contract or from active superintendence of the works during their progress.

b) Nominated Sub-contractors :

i) All specialists, merchants, tradesmen and others executing any work or supplying and fixing any goods for which prime cost prices or provisional sums are included in the Schedule of Quantities and/or Specifications who may be nominated or selected by the Architect are hereby declared to be Sub-contractors employed by the Contractor and are herein referred to as nominated Sub-contractors. No nominated Sub-contractor shall be employed on or in connection with the works against whom the contractor shall make reasonable objection or (Save where in the Architect and Contractor shall otherwise agree) who will not enter into contract provided:-

ii) That the nominated Sub-contractor shall indemnify the contractor against the same obligations in respect of the Sub-contract as the contractor is under in respect of this contract.

iii) That the nominated Sub-contractor shall indemnify the contractor against claims in respect of any negligence by the Sub-contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant, the property of the contractor or under any Workmen's Compensation Act in force.

iv) Payment shall be made to the nominated Sub-contractor within 15 days of his receipt of the Architect's certificate provided that before

any certificate is issued the contractor shall upon request furnish to the Architect proof that all nominated Sub-contractor's accounts included in previous certificates have been duly discharged; in default whereof the Bank may pay the same upon a certificate from the Architect and deduct the amount thereof from any sums due to the contractor.

8.1.3. OBTAINING INFORMATION:

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

8.1.4. THE SETTING OUT :

a) The Contractor shall at his own expense, set out the works accurately in accordance with the plans. The Contractor shall be solely responsible for the true and perfect setting out of the works, and for the correctness of the position, levels, dimensions and alignment of all parts thereof. If at any time any errors shall appear during the progress or on completion of any part of the work, the Contractor shall at his own cost rectify such error if called upon to the satisfaction of the Architect/Consultant. The Bank and/or its representatives shall time to time inspect the work but such inspections shall not exonerate the Contractor in any way from his obligations to remedy any defects, which may be found to exist at any stage of the work or after the same is completed.

8.1.5. PERFORMANCE

a) The Contractor shall be fully and solely responsible for proper, safe and efficient design and performance of his equipment and installation, in conformity with drawings and parameters and specifications stipulated in the Contract documents.

b) In case the Contractor finds that anything contained in drawings, specifications or given parameters will not ensure such performance and compliance with best trade practices and codes, rules and regulations laid down by Authorities, he shall bring such matters to the attention of the Architect/Consultant and shall follow their instructions.

c) The contractor shall also guarantee that the performance of the various materials and items individually shall not be less than specified ratings when working under operating conditions given for the respective items.

8.1.6. EXECUTION OF WORK:

a) The whole of the work as described in the Contract (including the Schedule of Quantities, Preamble, the Specifications and all drawing pertaining thereto) and as advised by the Architect/Consultant from time to time is to be carried out and completed in all its parts to the entire satisfaction of the Architect/Consultant.

b) Any minor details of manufacture, fabrication and installation which are obviously and fairly intended, or which may not have been definitely referred to in this Contract, but which are usual in sound interiors execution practice and essential to the work, are to be included in the Contract. Rates quoted in the Schedules shall be inclusive of all Royalties, etc. as well as transportation so as to execute the Contract as per the rules and regulations of Local Bodies, State Government and the Government of India, and to the full intent of tender documents The GST is excluded.

c) Following shall be deemed to be provided for in the quoted rates:

i) Labour for constructing, fixing, finishing, carrying, cleaning, making good etc.

ii) Framework, ladders, ropes, nails, spikes, tools, material and workmanlike protection from weather, temporary supports.

- iii) Covering for the works during inclement weather or strikes or whenever directed, as necessary.
- iv) All temporary canvass, lights, tarpaulin, barricades water-sheets etc.
- v) All such temporary weatherproof sheds at such places and in a manner approved by the Architect/Consultant for the storage and protection of materials against the effects of Sun or rain.
- vi) All minor civil works like breaking and making good of masonry walls to original condition for passage of cables, cable trays, etc.
- vii) Provision of necessary frames (MS/wooden) for dressing up of wall/RCC openings and for installation of Fans etc. if instructed by Architect/Consultant. Drawings for framework to be got approved from Architect/Consultant.
- viii) The rate quoted by the Tenderer in the schedule of probable quantities will be deemed to be for the finished work inclusive of the cost of providing the above items.

SITE MANAGEMENT

8.1.7. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY:

- a) The Contractor shall provide everything necessary for the proper execution of the works according to the true intent and meaning of the Drawings, Specifications and Schedule of Quantities taken together whether the same may or may not be particularly shown or described therein, provided that the same can reasonably be inferred wherefrom and if the Contractor finds any discrepancy in the Drawings or between the Drawings, Specifications and Schedule of Quantities he shall immediately refer the same in writing to the Architect/Consultant, who shall decide which shall be followed, and his decision shall be final and binding on all parties. The Contractor shall provide ground for himself and fresh water and power for carrying out of the works at his own cost.
- b) The Bank shall not charge the Contractor for his own un-rented ground but shall on no account be responsible for the expenses incurred by the Contractor for hired ground.
- c) The Contractor shall provide and maintain all measuring and testing instruments at all times for properly carrying out the work and for the use of the Architect/Consultant /Bank, including providing skilled attendants as required.
- d) The Contractor shall supply, fix and maintain at his cost during the execution of any works, all the necessary equipment, materials and lighting required by night and as well as by day for proper execution of work. The contractor shall take down and remove any or all such unwanted waste materials, debris etc. as occasion shall require or when ordered to do so, and shall fully reinstate and make good all matters and things described during the execution of the works, to the satisfaction of the Architect/Consultant/ Bank

8.1.8. FACILITIES TO OTHER CONTRACTORS

- a) The Contractor shall give full facilities and co-operation to other Contractors employed by the Bank and shall afford them reasonable opportunity for the execution of their works and for properly connecting and co-coordinating their works with the work of the other Contractors. The decision of the Architect/Consultant on any points of dispute between the various Contractors shall be final and binding on all parties concerned.

8.1.9. STORES AT SITE:

a) The Contractor shall be allotted space / existing rooms on site subject to availability. The Contractor shall make his own arrangements to enclose, secure and guard the space allotted to him. Wherever there may be materials, which are likely to deteriorate by the action of the sun, rain or other elements, all such materials, tools etc shall be duly protected by the Tenderer from damage by weather or any other cause. All such stores and yards shall be cleared away and ground left in good and proper order, on completion of this Contract unless otherwise expressly mentioned herein.

8.1.10. ELECTRIC POWER FOR INSTALLATION

a) The Contractor shall be given a temporary electrical connection at one location at or below ground level to be decided by the Bank. The Contractor shall, at his own cost, provide a sub-meter, cabling and wiring and switchboards complying with all laws, rules and regulations in force and ensuring the safety of everyone working or visiting on site.

b) The Contractor shall regularly reimburse cost for electricity consumed to the Main Contractor at the same tariff rates as charged by the Electric Supply Company.

8.1.11. GENERAL CONDITIONS OF SUPPLY OF MATERIALS FOR EXECUTING INTERIOR FLOORING WORK

The successful Tenderer before placing the orders or before supplying shall seek clearance in a meeting with the Bank/Architect/Consultant. The final list of supply of materials shall however be made at the time of signing of the contract by the Bank in consultation with the Architect/Consultant and the successful Tenderer. The Contractor shall then strictly adhere to this approved list of makes and materials and proceed to supply the same. If any deviation and/or for any unforeseen reasons the makes or materials are to be altered, the contractor shall obtain the approval from the Bank/Architect/Consultant in writing and then only he may proceed to supply.

8.1.12. REMOVAL OF ALL OFFENSIVE MATTERS :

a) All soil, filth or other matter of an offensive nature taken out of any trench, sewer, drain or other place shall not be deposited on the surface, but shall be at once carried away by the Contractor and disposed off as per the rules and regulations of the Local Authorities concerned.

8.1.13. UNFIXED MATERIALS:

a) When any materials intended for the works shall have been placed at site by the Contractor, such materials shall not be removed there from (except for the purpose of being used on the works) without the written authority of the Architect/Consultant and when the Contractor shall have received payment in respect of any Certificate in which the Architect/Consultant shall have stated that he has taken into account the value of such unfixed materials on the works, such materials shall become the property of the Bank, and the Contractor shall be liable for any loss or damage to any such materials.

8.1.14. REMOVAL OF IMPROPER WORK AND MATERIALS:

a) The Architect/Consultant shall, during the progress of the works, have power to order in writing from time to time the removal from the works, within such reasonable time as may be specified in the order, of any materials which, in the opinion of the Architect/Consultant are not in accordance with the specifications or the instructions of the Architect/Consultant and the substitution of proper materials and the removal and proper re-execution of any work, which has been executed with materials or workmanship, not in accordance with the Drawings and Specifications or instructions, and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor to carry out such order the Bank shall have power to employ and pay other persons to carry

out the same and all expenses consequent there on or incidental thereto shall be borne by the Contractor, and shall be recoverable from him on behalf of the Bank or may be deducted by the Architect/Consultant from any money due or that may become due to the Contractor.

b) If the correcting works are not done in accordance with the Contract the Architect/Consultant, in consultation with the Bank, may allow such work to be got done through other parties at Contractors risk and cost and in that case they may make allowance for the difference in value together with such further allowance for damages to the Bank as in their opinion may be reasonable.

8.1.15. CLEARING THE SITE OF WORKS:

a) The Contractor shall clear site of works as per the instructions of the Architect/Consultant. The site of works shall be cleared of all men, materials, sheds, etc. belonging to the Contractor. The site shall be delivered in a clean and neat condition as required by the Architect/Consultant within a period of one week after the job is completed. In case of failure by the Contractor, the Bank under advice of the Architect/Consultant will have the right to get the site cleared at the risk and cost of the Contractor to the satisfaction of the Architect/Consultant.

8.1.16. OCCUPATION OF PARTIALLY COMPLETED WORKS BY THE BANK:

a) The Bank shall be entitled to and at liberty to occupy even the partially completed works or any portion thereof by themselves or through their agents and servants if they so desire, in which event, necessary extension of time on this account for completing the works shall however be granted to the Contractor, but he shall have no claim for any compensation whatsoever due to the delay involved in completing works. Both the Bank and the Contractor will work out the repercussions on the insurance Clause mentioned afore to mutual satisfaction safeguarding each other's interest.

8.1.17. PREPARATION FOR OCCUPATION AND USE ON COMPLETION:

a) On completion of the work, the Contractor shall inform the Architect/Consultant in writing that he has finished the work and it is ready for the Architect/Consultant's/Bank's inspection. The Contractor shall clean all his works and all the rooms under his charge. He will leave the entire works neat and clean and ready for occupation and to the satisfaction of the Architect/Consultant.

8.1.18. KEEPING THE AREAS AND ACCESS ROADS CLEAN:

a) The Contractor shall be required to maintain the site and the building areas in a neat and clean condition at all times to the satisfaction of the Architect/Consultant. Debris to be removed every 2 days.

b) The Contractor shall also be required to keep all access roads to the site and within the site free from all obstructions, material droppings etc. to the satisfaction of the Consultant and local authorities.

8.1.19. COVERING UP OF WORKS:

a) The Contractor shall cover up and protect the works from the weather and shall suspend all wet operations during weather which, in the opinion of Architect/Consultant, will be detrimental to the works.

8.1.20. MEASUREMENT TO BE RECORDED BEFORE WORK IS COVERED UP:

a) The Contractor shall take joint measurements with the Architect/Consultant before covering up or otherwise placing beyond the reach of measurement any items of work. Should the Contractor neglect

to do so, the same shall be uncovered at the Contractor's expense or in default thereof, no payment or allowance shall be made for such work or the materials with which the same was executed.

8.1.21. SITE SURVEY:

a) On award of the works, the Contractor shall immediately survey the complete site and record his findings on civil works and services connected with his works and submit the report in duplicate. No extra payment shall be made for this work.

8.1.22. LABOUR HUTMENTS:

a) The Contractor shall not be allowed to put up any hutment/temporary structure of accommodating his labour/staff. He shall be required to make these arrangements elsewhere at his own cost. However, if the rules of local authorities so permit and subject to the contractor arranging for such permission, some space at site which will not come in the way of the permanent construction, temporary construction facilities and offices may be provided to the contractor at the discretion of the Bank for essential/core staff engaged on emergency or essential services round the clock work with proper sanitary facilities.

8.2. STAFF MANAGEMENT

8.2.1. INFORMATION TO BE SUPPLIED BY THE CONTRACTOR:

The Contractor shall furnish the Bank the following:

- a) Detailed industrial statistics regarding the labour employed by him, etc.
- b) The power of Attorney, name and signature of his authorized representative who will be in charge for the execution of the work.
- c) A list of technically qualified persons Employed by him for the execution of the work.
- d) The total quantity and quality of materials used for the work. e)

8.2.2. APPOINTMENT OF ENGINEERS:

a) The Contractor shall appoint a Senior Engineer to the satisfaction of the Architect/Consultant/Bank. The Architect/Consultant/Bank shall be entitled to approve or disapprove without assigning reasons the appointment of such Engineer proposed by the Contractor. This condition shall be reckoned as being the essence of the contract and its breach shall make the Contract revocable at the option of the Bank. The Senior Engineer shall be assisted by a number of other Engineers and Supervisors in the respective disciplines as required for the smooth and satisfactory execution of the work.

b) The Engineer so appointed shall be available at all times when required by Architect/Consultant/Bank to attend all site/office meetings to discuss all aspects of the Contract including design, administration, planning, fabrication, installation, commissioning, testing and defects liability maintenance as well as site co-ordination with all Contractors/Agencies.

c) The Senior Engineer shall not be required to be present full time at site but shall be available at all times when required by Architect/Consultant to attend site/office meetings to discuss any aspect of the contract.

8.2.3. SITE ENGINEER:

a) Successful Tenderer will have to, before receiving work order, select suitable Engineer to be interviewed by Architect/Consultant/Bank. It will be the responsibility of the selected engineer to

ensure that minutes of site meetings are maintained up-to-date. Contractors have to be up-to-date for each site meeting to be held.

8.2.4. CONTRACTOR'S SUPERINTENDENCE & REPRESENTATIVE ON WORKS:

- a) The Contractor shall give all necessary personal superintendence during the execution of the works and as long thereafter as the Architect/Consultant may consider it necessary until the expiration of the "Defects Liability Period" stated in the Appendix hereto.
- b) The Contractor shall maintain and be represented on site, at all times while the work is in progress, by a responsible and efficient Engineer In-charge, approved by the Architect/Consultant and who must thoroughly understand all the trades entailed and be constantly in attendance, while the men are at work. Any directions, explanations instructions or notices given by the Architect/Consultant to such Engineer In-charge shall be deemed to be given to the Contractor and shall be binding as such on the Contractor. The Engineer-in-charge shall be thoroughly conversant with the English Language and should be able to read, write and speak English.

8.2.5. DISMISSAL OF WORKMEN:

- a) The Contractor shall on the request of the Architect/Consultant/ Bank immediately dismiss from the works any person employed thereon who may, in the opinion of the Architect/Consultant, be unsuitable or incompetent or who may misconduct himself and such person shall not again be employed or allowed on the works without the permission of the Architect/Consultant/ Bank.

8.2.6. OTHER PERSONS ENGAGED BY THE BANK:

- a) The Bank reserves the right to use the premises and any portion of the site for the execution of any work not included in this Contract which he may desire to have carried out by other persons, and the Contractor has to allow all reasonable facilities for the execution of such work, but is not required to provide any plant or material for the execution of such work, except by special arrangement with the Bank. Such work shall be carried out in such a manner as not to impede the progress of the works included in the Contract, and the Contractor shall not be responsible for any damage or delay which may happen to or be occasioned by such work.

8.3. SAFETY MANAGEMENT

8.3.1. REPORTING OF ACCIDENTS TO LABOUR:

The Contractor shall be responsible for the safety of persons employed by him on the works and shall report serious accidents to any of them, however and wherever occurring on the works, to the Architect/Consultant and Bank who shall make every arrangement to render all possible assistance. This shall be without prejudice to the responsibility of the Contractor under the Insurance Clause of the General Conditions.

8.3.2. Use of Explosives:

Explosives shall not be used on the works by the contractor without the written permission of the Architect/Consultant and then only in the manner and to the extent to which He has prescribed. When explosives are used, the same shall be stored in a special magazine to be provided by and at the cost of the contractor, who shall be liable for all damages, loss or injury for noncompliance with all the statutory obligations.

8.3.3. Safety codes

Scaffolds

Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration work, which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made either of good quality wood or steel. The steps shall have a minimum width of 450mm and a maximum rise of 300mm. Suitable hand holds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal to 1 vertical)

- a) Scaffolding or staging more than 4 m. above the ground floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly bolted, braced or otherwise secured, at least 1m. 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 fastened to prevent it from swaying from the building or structure.
- b) Working platforms, gangways and stairway shall be so constructed that they do not sag unduly or unequally and if the height of the platform, gangway or stairway is more than 4m. above ground level or floor level, they shall be closely boarded and shall have adequate width and be suitably fenced as described in (ii) above.
- c) Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 m.
- d) Wherever there are open excavations in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into excavations.
- e) Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. in length while the width between said rails in rung ladder shall in no case be less than 290mm for ladder up to and including 3 m. in length. For longer ladders this width shall be increased at least 20mm. for each additional meter of length.
- f) A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to construction.
- g) 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.

8.3.4. OTHER SAFETY MEASURES:

- a) All personnel of the Contractor working within the site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal workers shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.
- b) Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.

8.3.5. PERSONAL SAFETY EQUIPMENTS:

- a) All necessary personnel safety equipment as considered adequate by the 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.
- b) Workers employed on mixing asphalt materials, cement and lime mortar shall be provided footwear and protective goggles.
- c) Those engaged in white washing and mixing or stacking of cement bags or any materials, which are injurious to the eyes, shall be provided with protective goggles.
- d) Those engaged in welding works shall be provided with welder's protective eyesight lids.
- e) Stonebreakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- f) 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 manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
- g) The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting, the following precautions should be taken:
- h) No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.
- i) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.
- j) Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of the work.
- k) When the work is done near any public place where there is risk of drowning all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- l) Adequate washing facilities should be provided at or near places of work.

8.3.6. HOISTING MACHINES

Use of hoisting machines and tackle including their attachments anchorage and supports shall conform to the following standards or conditions:

- i) This shall be of good mechanical constructions, sound material and adequate strength and free from patent defect and shall be kept in good repair and in good working order.
- ii) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.
- iii) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in charge of any hoisting machine including any scaffolding winch or give signals to operator.

iv) In case of every hoisting machine and of every chain ring hook, shackle, shovel and pulley block used in hoisting or as means of suspension of the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case, a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond its specified capacity.

v) In case of departmental machines, the safe working load shall be notified by the engineer as regards contractor's machines, the contractor shall notify the safe working load of the machine to the engineer whenever he brings any machinery to site of work and get it verified by the engineer concerned.

vi) Motors, 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 of the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations that 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 that are good conductors of electricity.

b) These 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.

c) 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 Labour Officer, Engineers of the Department or their representatives.

d) 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.

8.4. RISK MANAGEMENT

8.4.1. WORK PERFORMED AT CONTRACTOR'S RISK:

The Contractor shall take all precautions necessary and shall be responsible for the safety of the work and shall maintain all safe guards, including providing for guards, proper lights, signs, temporary passages, or other protection necessary for the purpose. All work shall be done at the Contractor's risk, and if any loss or damage shall result from fire or from other cause, the Contractor shall promptly repair or replace such loss or damage free from all expenses to the Bank. The Contractor shall be responsible for any loss or damage to materials, tools or other articles used or held for use in connection with the work. The work shall be carried on and completed without damage to any work or property of the Bank or of others and without interference with the operation of existing machinery or equipment, if any.

8.4.2. CONTRACTOR'S LIABILITY AND INSURANCE

a) From commencement to completion of works, the Contractor shall take full responsibility for the care of the work and for taking precautions to prevent loss or damage to the work to the maximum extent possible and shall be liable for any damage or loss that may arise to the works or any part thereof from any cause whatsoever including causes of fire, lightening, explosion, fire, earthquake, storm, hurricane, floods, inundation, subsidence, landslides, rock slides, riots (excluding civil war, rebellion, revolution and insurrection) or any latent defect or damage and shall at his own cost repair and make good the same so that at all times the work shall be in good order and condition and in conformity in every respect with the requirements of the Contract.

Explanation: For the purpose of this condition, the expression "from commencement to completion of works" shall mean the period starting with the date of issue of the work order or date of handing over of site whichever is later and ending with issue of Virtual Completion Certificate. For the purpose of this Insurance clause only, handing over of site shall also include any handing over of space to the Contractor for the purpose of storage of materials and equipment.

b) Without limiting the obligations and responsibilities under this condition, the Contractor shall insure and keep insured the works from commencement to completion, as aforesaid, as increased by 25% of the contract value against the risk of loss or damage from any cause whatsoever including the causes enumerated in the foregoing Clause (a). In the event of there being a variation in the nature and extent of the works,

the Contractor shall from time to time increase or decrease the value of the insurance correspondingly. All the premia for the insurance shall be borne and paid by the Contractor. The said insurance shall also provide cover for the removal of debris of the lost or damaged works. The said insurance shall be in the joint names of the Bank and the Contractor, Bank's name being mentioned first in the policies and the Contractor shall deposit with the Bank the said policy or Policies before commencing the work. All money payable by the insurer under such Policy/Policies shall be recovered by the Bank only and may be paid to the Contractor or any other agency of Bank's choice in the installments for the purpose of rebuilding or replacing or repairing the works and/or goods destroyed or damaged as the case may be.

c) The Contractor shall at all times indemnify and keep indemnified the Bank against all losses, claims, damages or compensation including under the provisions of the payment of the Wages Act 1936, Minimum Wages Act 1948, Bank's Liability Act 1938, Workman's Compensation Act 1923, the Maternity Benefit Act 1961, the Bombay Shops and Establishments Act 1947, Industrial Disputes Act 1947, and Contract Labour (Regulation and Abolition) Act 1970 and Employees State Insurance Act 1948, Motor Vehicles Act 1988 or any modifications thereof or under any other law relating thereto and rules made there under from time to time or as a consequence of any accident or injury to any workman or other person in or about the work whether in the employment of the Bank or Contractor or not, and also against all costs, charges and expenses of any suit, action or proceedings whatsoever out of such accident or injury or combination of any such claims.

d) Before commencing the work, the Contractor shall without limiting his obligations and responsibilities under this condition, insure against any loss of life or injury to any personnel in the employment of Contractor/sub-Contractor/nominated Sub-Contractor. For this purpose, insurance (CAR: Contractor All risk) Policies Labour License, Labour Insurance shall be taken by the Contractor /Sub-Contractor. Such insurance shall be taken to include employees/ workmen covered by the Workman's Compensation Act 1923, as well as those employees /workmen not covered by the said Act. Separate insurance policies may be taken for employees/work men covered by Workman's Compensation Act 1923, and employees/ workmen not covered by the said Act. All the premium shall be paid by the Contractor. Policy/Policies taken under this paragraph for the personnel in employment with the Contractor/Sub-Contractor may be in their Bank's names of the Contractor/Sub-Contractor/nominated Sub-Contractors. In the event of any loss or injury to personnel in employment with the Contractor/Sub-Contractor/nominated Sub-Contractors, the Employee and Contractor shall recover directly from the Insurance Company and ensure that payment of the same is made to the affected parties including the Bank. The policy in original shall be deposited with the Bank. However, if the Policy obtained by the Contractor is not project-specific but covers several works, a certified copy of the Policy shall be submitted to the Bank, together with original which shall be returned after verification.

e) The Contractor shall at all times indemnify and keep indemnified the Bank against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of or in consequence of the construction and maintenance of the work and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto. Before commencing the execution of the works, the Contractor shall without in any way limiting his obligations and liabilities under this condition, insure at his cost and expense against any damage or

loss or injury which may be caused to any person or property including the Employee or servants of the Bank and the Consultants and their property by or in the course of the execution of the works. Such insurance to be known as the Third Party Insurance shall be in a sum equivalent to two percent of the estimated value of the work, subject to the minimum sum of Rupees four Lac. The Insurance policy to be so obtained by the Contractor shall be deposited by the Contractor with the Bank within seven days of its issue by the insurer.

f) The Contractor shall provide the Bank with documentary evidence from time to time, that he has taken all the insurance policies mentioned in the foregoing paragraphs and that he has paid the necessary premium for keeping the policies valid till the works are completed and handed over to Bank.

g) The Contractor shall ensure that similar insurance policies (CAR: Contractor All risk) Policies, Labour License, and Labour Insurance are taken out by his sub Contractors or nominated Contractors, if any. The Contractor shall be responsible to the Bank or to any other person for any claim or loss resulting from the failure of the Sub-contractors or nominated Sub-Contractors to obtain such insurance policy. While taking the insurance policies, Contractor should indicate clearly to the insurance companies that policies issued should cover their Sub-Contractors and nominated Sub-Contractors also.

h) If the Contractor and/or his sub-Contractor or nominated Sub Contractor, if any, shall fail to effect and keep in force the insurance referred to above or any other insurance which he/they may be required to effect under the terms of the Contract, then in any such case, the Bank may, without being bound to effect and keep in force any such insurance policy and pay such premium, as may be necessary for that purpose from time to time and deduct the amount so paid by the Bank from any money due or becoming due to the Contractor recover the same as a debt due from the Contractor.

i) All Insurance Policies shall be obtained from nationalized Insurance Companies only.

j) Without prejudice to any of its obligations and responsibilities under this condition, the Contractor shall, within 30 days from the date of the Work Order and thereafter at the end of each quarter submit a report to the Bank in Proforma 'C' annexed hereto the detailed information on the Insurance Policies as prescribed in the said proforma together with relevant documentary evidence.

k) No work shall be commenced by the Contractor unless and until he has obtained the insurance or insurance required to be obtained by him under or by the foregoing clauses and no work shall be carried out or continued by the Contractor unless and until such insurance is current and valid at that time. All the receipts in original along with two photocopies thereof, for the payment of the premia shall be furnished by the Contractor to the Bank. The original receipts will be returned to the Contractor after verification. The Bank reserves the right for payment for works done subject to fulfillment of this condition and shall instruct the Architect/Consultant accordingly.

l) In the event of any claim for insurance becoming due on account of any eventuality covered by the respective insurance policy/policies, the Contractor shall reinstate the installation, replace the materials or equipment's or pay compensations to the affected personnel/ Employees or their legal heirs without waiting for settlement of the claim from insurance company.

m) If the Contractor shall not perform and observe any of the duties and obligations devolving upon him hereunder, and such omission or breach by the Contractor shall involve the Bank in any liability tortuous or otherwise and/or loss or damage, the Bank shall be entitled to the restitution of such loss or damage and shall be entitled to recover the amount of restitution from any moneys due to the Contractor from the Bank under this Contract or any other Contract.

n) Upon taking possession of the works under the Contract, the Bank shall take out parallel insurance, to insure all persons who are not the Contractor's or the Sub-Contractor's or the nominated

Sub-Contractors or the Project Management Consultant's staff or the agent of the Banks authorized representatives on getting the occupation certificate, the Bank will maintain their own insurance Policy and the Contractors will cease to be responsible for the insurance of Bank's personnel.

o) The Contractor shall ensure the validity of the insurance Policies. The Contractors shall hand over the insurance policies to the Bank through the Architect/Consultant. Once delays are certified by the Architect/Consultant, he shall have to ensure that the insurance Policies are progressively extended.

p) The Banks' insurance Policy shall cover the risk for Banks' agents, Consultants, Architect/Consultants etc. appointed by the Bank.

q) The Bank shall insure the building in totality on obtaining possession of the building and other structures.

Insurance in respect of damages to persons & property

1. The contractor shall be responsible for all injury to persons, Neighbouring Properties, animals or things, and for all structural and decorative damage to property which may arise from the operation or neglect of himself or of any nominated Sub-contractor's employees, whether such injury damage arise from carelessness, accident or any other cause whatever in any way connected with the carrying out of this contract. This clause shall be held to include inter alia, any damage to buildings, whether immediately adjacent or otherwise, and any damage to roads, streets, foot-paths, bridges or ways as well as all damage caused to the building and works forming the subject of this contract, by frost or other inclemency or whether. The Contractor shall indemnify the Bank from any such injury or damage to persons or property as aforesaid and also in any award of compensation or damages consequent upon such claims.

2. The Contractor shall reinstate all damage of every sort mentioned in the Clause, so as to deliver up the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.

3. The Contractor shall indemnify the Bank against all claims, which may be made against the Bank by any member of the public or other third party in respect of

4. anything which may arise in respect of the works or in consequence thereof and shall at his own expense arrange to effect and maintain, Until the virtual completion of the contract, with an approved Office a Policy of Insurance in the joint names of Bank and the Contractor against such risks and deposit such Policy or Policies with the Architect from time to time during the currency of this Contract.

5. The Contractor shall similarly indemnify the Bank against all claims which may be made upon the Bank whether under The workmen's Compensation Act or any other statute in force during the currency of this Contract or at common law in respect of any employee of the Contractor or any Sub-Contractor and shall at his own expense effect and maintain, until the virtual completion of the contractor, with an approved office, a policy of Insurance in the joint names of the employee and the contractor against such risks and deposits such Policy or Policies with the Architect from time to time during the currency of this Contract.

6. The Contractor shall be responsible for anything, which may be excluded from the Insurance Policies above referred to, and also for all the damages to any property arising out of and incidental to the negligent or defective carrying out of this contract. He shall also indemnify the Bank in respect of any costs, charges and expenses arising out of any claim or proceedings and also in respect of any award of or compensation of damage arising there from.

7. The Bank with the concurrence of the Architect shall be at liberty and is hereby empowered to deduct the amount of any damage, compensation, costs, charges and expenses arising or occurring from or in respect of any such claim or damage from any sum or sums due or become due to the contractor.

Fire Insurance:

1. The Contractor shall at the time of signing the Contract, Insure the works and keep them Insured until the virtual completion of the contract, against losses or damages by fire, as approved by the Architect, in the joint names of the Bank and the Contractor (the name of the former being placed first in the policy) for the full amount of the contract and for any further sum being allowed to the Contractor as an authorized extra. Such policy shall cover the property or the Bank only, fees for assessing the claim and in connection with his services generally therein and shall not cover any property of the contractor or of any sub-contractor of the Bank. The contractor shall deposit the policy and receipts for the premiums of the same with the Architect within Ten days of the signing the contract or on receipt of the Work order, whichever is earlier unless otherwise instructed by the Architect. In default of the contractor insuring as provided above, the Bank or the Architect on his behalf may so issue any may deduct the premium paid for any money due to the contractor. The contractor shall as soon as the claim under the policy is settled, or the work reinstated by the insurance office, should they elect to do so, proceed with all due diligence with the completion or the work in the same manner as though the fire had not occurred and in all respects under the same conditions of the contract. The contractor shall be entitled to such extension of the time for completion as the Architect deems fit.

2. The amount so due as aforesaid shall be total value of the works duly executed and of the contract materials and goods delivered upon the site for use in the work up to and including a date not more than seven days prior to the date of the said certificate less the amount to be retained by the Bank (As hereinafter provided) and loss any instalments, previously paid under this clause. Provided that such certificates shall only include the value of the said materials and goods as and from time they are reasonably, properly and not prematurely brought upon the site and then only if properly stored and/or protected weather.)

9. FAILURE OF PERFORMANCE

9.1. DAMAGES FOR NON-COMPLETION:

9.1.1. If the Contractor fails to complete any or all the works by the date/s named in the relevant clauses for "Date of Completion" and "Extension of Time" and if the Architect/Consultant shall certify in writing on or before the date of issue of the Certificate for the last payment to which the Contractor may become entitled hereunder that the works could reasonably have been completed by the date or within the said extended time, then the Contractor shall pay or allow the Bank the sum to be worked out as per Appendix to General Conditions of Contract per day to be recovered as Liquidated Damages (and not by way of penalty) for the delay, beyond the said date or extended time, as the case may be, during which the works shall remain unfinished and such damages may be deducted from any moneys due or which may become due to the Contractor. The maximum amount of Liquidated Damages shall be the amount not exceeding Total Security Deposit. The contractor shall be bound to extend validity of Insurance Cover till such period of completion as to be considered necessary at their cost.

9.1.2. FAILURE BY CONTRACTOR TO COMPLY WITH CONSULTANT'S INSTRUCTIONS:

9.1.3. If the Contractor after receipt of written notice from the Architect/Consultant in prior consultation with the Bank requiring compliance with such further drawings and/or instructions to remove, fails within seven days to comply with the same, the Architect/Consultant with prior consent of the Bank may employ other persons to execute any such work whatsoever as may be necessary to give effect thereto and all costs incurred in connection therewith shall be recoverable from the Contractor by the Bank on a certificate by the Architect/Consultant as a debt to be deducted by him from any moneys due or to become due to the Contractor.

9.2. DETERMINATION OF CONTRACT:

9.2.1. If the Contractor except on account of any legal restraint upon the Bank preventing the continuance of the works, on account of any of the causes mentioned in Clause "Delay and Extension of time" in the case of a certificate being withheld or not paid when due, shall suspend the works, or, in the opinion of the Architect/Consultant, shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall more than once make default in the respects mentioned in Clause "Removal of improper work and materials", the Bank through the Architect/Consultant shall have power to give notice in writing to the Contractor requiring that the works be proceeded with a reasonable manner and with reasonable dispatch. Such notice shall not be unreasonably given and must signify that it purports to be a notice under the provisions of this clause and must signify the act or defaults on the part of the Contractor upon which it is based. After such notice shall have been given, the Contractor shall not be at liberty to remove from the site of work, or from any ground contiguous thereto, any plant or materials belonging to him which shall have been placed thereon for the purpose of the works, and the Bank shall have lien upon such plant and materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Contractor shall fail, for seven days after such notice has been given to proceed with the works as therein prescribed, the Bank may enter upon & take possession of the works and of all such plant and materials thereon intended to be used for the work, and the Bank shall retain and hold alien upon all such plant and materials until the works shall have been completed under powers hereinafter conferred upon him. If the Bank shall exercise the above power, he may engage any other person to complete the works and exclude the Contractor, his agents and servants, from entry upon or access to the same, except that the Contractor or any person appointed in writing may have access at all reasonable times during the progress of the works to inspect, survey and measure the works. Such written appointment or a copy thereof shall be delivered to the Architect/Consultant before the person so appointed comes on to the works, and the Bank shall take such steps as in the opinion of the Architect/Consultant may be reasonably necessary for completion of the works, without undue delay or expenses, using for that purpose the plant and materials above mentioned in so far as they are suitable and adaptable to such use. Upon the completion of the work the Architect/Consultant shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid and in completing the works by other persons. Should the amount so certified as the expenses properly incurred be less than the amount which would have been due to the Contractor upon the completion of the works by him, the difference shall be paid to the Contractor by the Bank, should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Bank. The Bank shall not be liable to make any further payment or Compensation to the Contractor for or on account of the proper use of the plant for the completion of the works under the provision herein before mentioned other than such payment as included in the Contract. After the works shall have been so completed by persons other than Contractor, under provision herein before contained, the Architect/Consultant shall give notice to the Contractor; to remove his plant and all surplus materials as may not have been used in the completion of the works, from the site. If such plant and materials are not removed within a period of 14 days, after the notice shall have been given, the Bank may remove and sell the same, holding the proceeds, less the cost of the removal and sale, to the credit of the Contractor. The Bank shall not be so responsible for any loss sustained by the Contractor from the sale of the plant in the event of the Contractor not removing it after notice.

9.3. NOTICES:

9.3.1. Notices of the Bank to the Architect/Consultant or the Contractor may be served personally or by being left at or sent by registered post to the last known place of abode or business of the party to whom the same is given or in the case of the Contractor by being left on the works. In the case of company or Corporation, notices may be served at or sent by registered post to the Registered office of the Company or Corporation. Any notice sent by registered post shall be deemed to be served at the time when, in the ordinary course of post, it would be delivered.

9.4. TERMINATION OF CONTRACT BY THE BANK

9.4.1. If the Contractor being an individual or a firm, commits any act of insolvency or shall be adjudged as Insolvent or being an incorporated Company shall have an order for Compulsory winding up or applies for voluntary winding up or subject to the supervision of the Court and of the Official Assignee or the Liquidator in such acts of Insolvency or winding up shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Architect/Consultant that he is able to carry out and fulfil the Contract, and to give security therefore, if so required by the Architect/Consultant 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 sub-let the Contract without the consent in writing of the Architect/Consultant first obtained.

or shall charge or encumber this Contract or any payments due or which might become due to the Contractor there under,

or if the Architect/Consultant shall certify in writing to the Bank that the Contractor

- 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 seven days after receiving from the Consultant written notice to proceed, or
- c) Has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or
- d) Has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Consultant written notice that the said materials or work were condemned and rejected by the Architect/Consultant under these conditions, or
- e) 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 requiring the Contractor to observe or perform the same, or
- f) Has to the detriment of good workmanship or in defiance of the Architect/Consultant instructions to the contrary sublet any part of the Contract.

Then in any of the said cases the Bank may notwithstanding any previous waiver, after giving seven days' notice in writing to the Contractor, determine the Contract but without thereby affecting the powers of the Architect/Consultant or the obligations and liabilities of the Contractor, the whole of which shall continue in force as fully as if Contract has not been determined and as if the works subsequently executed had been executed by or on behalf of the Contractor. And further, the Bank, may enter upon and take possession of the work and all plant, tools, scaffoldings, sheds, machinery, steam and other power, utensils and materials lying upon the premises or the adjoining lands or roads and use the same as his own property or may employ the same by means of his own servants and workmen carrying on and completing the works or by employing any other Contractors or other persons to complete the works, and the Contractor shall not in any way interrupt or do any act, matter or things to prevent or hinder such other Contractor or other person or persons employed for completing and

finishing or using the materials and plant for the works. When the works shall be completed or as soon thereafter as convenient, the

Architect/Consultant shall give a notice in writing to the Contractor to remove his surplus materials and plant, and should the Contractor fail to do so within a period of 14 days after receipt thereof by him the Bank shall sell the same by public auction, or otherwise and shall give credit to the Contractor for the amount realized after deducting there from the costs of removal and sales by the Bank for the values of the said plant and material so taken possession of by the Bank and the expense or loss which the Bank shall have been put to in procuring the works to be completed and the amount, if any, owing to the Contractor and the amount which shall be so certified shall thereupon be paid by the Bank, to the Contractor, or, by the Contractor to the Bank, as the case may be, and the certificate of the Architect/Consultant shall be final and conclusive between the parties. On termination of the Contract, the Contractor shall forthwith remove himself and his workmen from the works site.

9.5. TERMINATION OF THE CONTRACT BY THE CONTRACTOR:

9.5.1. If payment of the amount payable by the Bank under the Certificates of the Architect/Consultant with interest as provided for hereinafter shall be in arrears and unpaid for Forty seven days after notice in writing requiring payment of the amount with interest as aforesaid shall have been given by the Contractor to the Bank (or if the Bank interferes with or obstruct issue of any such Certificates), or the Bank commits any 'Act of Insolvency', or if the Bank being an individual, or firm shall be adjudged insolvent or (being an incorporated company) shall have an order made against it or pass an effective resolution for winding up either compulsorily or subject to the supervision of the court or Voluntarily, or if the official Assignee of the Bank being an individual, or firm shall be adjudged insolvent or (being an incorporated company) shall have an order made against it or pass an effective resolution for winding up either compulsorily or subject to the supervision of the court or Voluntarily, or if the official Assignee of the Bank

shall repudiate the Contract, or if the Official Assignee or the Liquidator in any such winding up fails within fifteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Contractor that he is able to carry out and fulfill the Contract and to make all payments due, and to become due hereunder and if required by the Contractor, to give security for the same, or if the works be stopped for three months under an order of the Architect/Consultant or the Bank or by any injunction or other orders of any court of law, then and in any of the said cases the Contractor shall be at liberty to determine the Contract by notice in writing to the Bank, through the Architect/Consultant, and he shall be entitled to recover from the Bank payment for all works executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract.

9.5.2. In arriving at the amount of such payment, the net rates contained in the Contractor's original tender shall be followed, or where the same may not apply, valuation shall be made in accordance with "Prices for Extras, etc. Ascertainment thereof".

9.6. FORE CLOSURE OF CONTRACT IN FULL OR IN PART:

9.6.1. If at any time after acceptance of the tender the Bank/Architect/Consultant shall decide to abandon or reduce the scope of the works for any reasons whatsoever and hence not require the whole or any part of the works to be carried out he shall inform the Contractor in writing to that effect and the Contractor shall have no claim to any payment or compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

9.6.2. The Contractor shall be paid at the Contract rates full amount for works executed at site, and in addition, reasonable amount as Certified by the Architect/Consultant for the value of such material (which material shall thereupon become the property of the Bank) and also such further allowances as the Architect/Consultant may think reasonable and fair in respect of (a) any expenditure incurred by

the Contractor towards preliminary works etc. and (b) other reasonable and proper engagement the Contractor may have entered into for carrying out the work.

10. COMPLIANCE

10.1. COMPLIANCE TO BANK'S/LEGAL NORMS

10.1.1. NOTICES

a) The Contractor shall give all notices and pay all fees and shall comply with all Acts and Regulations for the successful completion of the Contract works.

10.1.2. AUTHORITIES, NOTICES, PATENTS, RIGHTS & ROYALTIES: The Contractor shall conform to the provisions of all the statutes relating to the works, and to the Regulations and bye laws of any local Authority, and of any Water, Lighting, Electric supply, and of other Companies or Authorities with whose systems the structure is proposed to be connected, and shall before making any variation from the drawings or specifications that may be necessitated by so confirming, give to the Architect/Consultant written notice, specifying the variations proposed to be made and the reason for making it, and apply for instruction thereon. In case the Contractor shall not within 10 days receive such instructions, he shall proceed with the work conforming to the provision or Regulations or Byelaws in question.

a) The Contractor shall bring to the attention of the Architect/Consultant all notices required by the said Acts, Regulations or Bye-laws to be given to any Authority by the Bank or the Architect/Consultant and pay to such Authority, or to any public Officer, all fees that may be properly chargeable in respect of the works, and lodge the receipts with the Architect/Consultant.

b) The Contractor shall indemnify the Bank against all claims in respect of patent rights, design, trademarks of name or other protected rights in respect of any constructional site, machine work or material used for or in connection with the works or temporary works and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall defend all actions arising from such claims, unless he has informed the Architect/Consultant before any such infringement and received their permission to proceed, and shall himself pay all royalties, license fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof. All statutory fees, deposits etc paid by the contractor for permanent works to be handed over to Bank which shall be reimbursed to him by the Bank against documentary proof.

c) The Contractor shall assist and co-ordinate with the Architect/Consultant in obtaining all statutory approvals and/or amendments to such approvals as per the rules in force from Municipality and other local bodies. Any expenditure incurred in obtaining such approvals is deemed included in the rates quoted by the Contractor.

10.1.3. Notices to Local Bodies:

a) The Contractor shall comply with and give all notices required under any law, rule, regulations, or byelaw of parliament, State Legislature or Local Authority relating to works. The Contractor shall before commencing the execution of work issue a certificate to the Bank/ Architect/Consultant that he has obtained all the permissions Registrations and give all the notices as are required to be obtained or given under law particularly blasting permission the Police permission etc.

10.1.4. MUNICIPAL REGULATIONS:

a) The whole of the work is to comply with the requirements and byelaws of the concerned Municipal Corporation and local bodies.

10.1.5. WAGES OF LABOUR EMPLOYED BY THE CONTRACTOR:

a) The Contractor shall pay all labour employed by him at rates fixed by him at the commencement of the Contract as per the Labour Laws. Wages as applicable for the construction work as per norms stipulated by the local authorities, under whose jurisdiction the site falls, or any other statutory body or authority of the concerned State or Government of India shall be followed by the contractor. No violation of such statutory laws and rules shall be permissible. This will also include the minimum and the maximum allowable wages for various categories of labour to be employed by the contractor.

b) All wages shall be paid in full and without any deduction whatsoever at the approved rates and for full time actually worked during the wage period. Officers of Architect/Consultant or an Officer of the Bank as may be authorised in that behalf shall have power to exercise supervision over the labour employed by the Contractor, and for such other purpose any of these officers may inspect the wage books, muster books and other labour records of the Contractor. In the event of the report of such Officer/s showing that the proper rates of wages are not being paid, or that in any manner whatsoever the dealings between the Contractor and his

c) Labours are not satisfactory, the Architect/Consultant/Bank shall pass such orders upon the report as he considers desirable, and those orders shall be final and binding upon the Contractor. The contractor shall indemnify and keep indemnified the Architect/Consultant and / or the Bank against any claim arising from failure of the Contractor to comply with such labour laws.

d) The contractor shall register with Assistant Labour Commissioner (Central) as contractor approved by the Bank.

10.1.6. DISPLAY OF NOTICES

a) The Contractor shall display all permissions licenses registration certificates and other statements required to be displayed under various labour laws and other legislation's applicable to the works at the site office and also maintain the requisite register/records factually and up to date and keep them ready for inspection by the concerned authorities and also make available the same to the Architect/Consultant / Bank for inspection.

10.1.7. INSURANCE POLICIES:

a) The Contractor shall not commence any work at site, until all the insurance Policies, as required here and in terms of the General Conditions of Contract, have been submitted to the Bank. Renewal of the same if required due to extension of time for completion or similar reasons is also the responsibility of the Contractor.

b) Notwithstanding anything to the contrary mentioned in the Contract, Contractors have to submit all Insurance Policies to the Bank directly to make the Bank satisfy them regarding adequacy of values of insurance, validity etc. as per contractual clauses.

c) The Contractor shall arrange for renewals of these policies on their own. Any omissions to do so or delay in non-receipt of any information will be no excuse for failure to renew them or keep them in force without a break.

10.1.8. INDEBTEDNESS AND LIENS:

a) The Contractor agrees to furnish the Bank from time to time during the progress of the work as requested, verified statements showing the Contractors' total outstanding indebtedness in connection with the work covered by the Contract.

b) Before final payment is made, the Bank may require the Contractor to furnish the Bank with satisfactory proof that there are no outstanding debts or liens in connection with the Contract. If during the progress of the work, the Contractor shall allow any indebtedness to accrue to Sub-Contractors or others and shall fail to pay or discharge same within Seven days after demand, then the Bank may withhold any money due to the Contractor until such indebtedness is paid, or apply the same towards the discharge thereof.

10.1.9. INDIAN STANDARDS CODE:

a) The relevant I.S. Code of practice shall be the latest version with its amendments/revisions. The Contractor shall keep and maintain copies of the latest editions of relevant I.S. Codes at the work site and make it available to Architect/Consultant when required.

10.1.10. TREASURE TROVE:

a) Should any important and valuable materials/items be found while carrying out the works, the same shall be the property of the Bank. The Contractor shall give immediate notice to the Architect/Consultant of any such discovery and shall hand over any such treasure to the Bank on demand.

10.1.11. TECHNICAL AUDIT

a) The work is liable to be technically audited by the Chief Technical Examiner of the Central Vigilance Commission Government of India from time to time. Any defects, improvements or testing etc. pointed out by the Chief Technical Examiner should be carried out by the Contractor at his own cost and any deduction suggested by the CTE will be effected.

b) The Bank shall have a right to cause a technical examination and audit of works and final bills of the contractor including all supporting vouchers, abstract, etc. to be made at the time of payment of the bill. If as a result of this examination or otherwise any sum is found to have been overpaid in respect of any work done by the contractor under the contract the contractor shall be liable to return the amount of over payment and it will be lawful for the Bank to recover the same from any sum or sums due to him and in any other manner legally permissible and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work, executed by him under the contract, the amount of such under payment shall be duly paid by the Bank.

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

11. ROLE OF ARCHITECT / ARCHITECT/CONSULTANT

11.1. ROLE OF THE ARCHITECT/CONSULTANT

11.1.1. Architect/Consultant's duties are to design, control and supervise the works and to test any materials to be used or workmanship employed in connection with the works, quality control, project scheduling and monitoring and co-coordinating with all other agencies and Civil Contractor, checking of measurements, certification of bills, preparing extra deviation items, preparing minutes of meetings etc.

11.1.2. Wherever it is mandatory by law that the Architect/Consultant so appointed by the Bank shall be registered with the council of architecture/Competent Authority.

11.1.3. The Contractor shall afford the Architect/Consultant every facility and assistance for examining the works and materials and checking and measuring time and materials. The Architect/Consultant shall have no power to revoke, alter, enlarge, or relax any requirements of this Contract, or to sanction any day-work, additions, alterations, deviations or omissions unless such an authority may be specially confirmed by a written order of the Bank.

11.1.4. The Architect/Consultant shall act in consultation with the Bank regarding quality of works, interpretation of drawings, contract documents and finalize the selection of finishing materials. The Architect/Consultant shall check/ record the measurements made by Contractor's representative for all items of works and on completion hand over the records to the Bank.

11.1.5. The Architect/Consultant shall have the power to give notice to the Contractor or his Engineer In charge about the non-approval of any work or materials and such works shall be suspended or the use of such materials should be discontinued until the decision of the Architect/Consultant in consultation with Bank if required is obtained. The work will from time to time be visited by the Architect/Consultant / Bank but such examination shall not in any way exonerate the Contractor from the obligation to remedy any defects which may be found to exist at any stage of the work or after the same is completed. Subject to the limitations of this clause, the Contractor shall take instructions only from the Architect/Consultant as the case may be. In other words the contractors shall take total responsibility for the execution of work / items of work by using quality materials and providing best of workmanship to fulfil the true intent of the tender provision.

11.1.6. The Architect/Consultant shall have such other powers and discharge other functions as are specifically provided in this contract including such incidental or consequential powers or duties, subject always to such specific instructions or directions of the Bank, which shall be duly notified to the Contractor.

11.2. TO DEFINE TERMS AND EXPLAIN PLANS:

11.2.1. The various parts of the Contract are intended to be complementary to one another; but should any discrepancy appear, or any misunderstanding arise as to the import of anything contained therein, the explanations of the Architect/Consultant shall be final and binding. The correction of any errors or omissions of the Drawings and Specifications may be made by the Architect/Consultant, when such correction is necessary to bring out clearly the intention, which is indicated by a reasonable interpretation of the drawings & Specifications as a whole.

- 11.3. MATTERS TO BE FINALLY DETERMINED BY THE ARCHITECT/CONSULTANT:
- 11.3.1. The Architect/Consultant's decision, opinion, direction, Certificates (except for payments) with respect to all or any of the matter under clauses "2, 8.1.7, 4.4.3 6.2.3, 8.4.2 (a) (b), (c), (d), (f)" and the schedule of rates, hereof shall be final and conclusive and binding on the parties hereto and shall be without appeal. Banks' instructions if any, in this regard in case of any urgency, shall also be confirmed/vetted by the Architect/Consultant at the earliest possible.
- 11.3.2. Any of the decision, opinion, direction certificate, or valuation of the Architect or any refusal of the Architect to give any of the same shall be subject to the right of Arbitration and review in the same way in all respect (including the provision as to opening the reference) as if it were a decision of the Architect under the following clause.
- 11.4. TYPOGRAPHICAL OR CLERICAL ERRORS:
- 11.4.1. The Architect/Consultant's clarifications regarding partially omitted particulars or typographical or clerical errors shall be final and binding on the Contractor.
- 11.5. SITE VISITS:
- 11.5.1. The Architect/Consultant /Bank shall visit the site from time to time at their discretion, or when expressly called upon to do so, to co-ordinate various activities and/or to answer such queries that may be posed at site on interior drawings.
- 11.6. ADDRESS FOR SERVICE
- 11.6.1. All letters and Notices under or pursuant to these presents shall be hand delivered against acknowledgement or sent by Registered Post with Acknowledgement Due at the respective addresses mentioned below. Any change in the addresses shall be duly intimated by the concerned Party to all others.

Address for the Bank
The Regional Manager,
UTTAR PRADESH GRAMIN BANK
REGIONAL OFFICE, AYODHYA
Baldev Niwas Compound
Acharya Narendra Dev Road
Reidganj Ayodhya 224001

Address for the Architect:

The name and address of the Architect is the same as mentioned on the first page of the tender.

11.7. TAKING OVER

11.7.1. Upon the successful completion of all the tests to be conducted at site on the materials/items executed by the contractor, the Architect/Consultant shall issue a recommendation letter to the Bank confirming that the interiors is ready to be taken over by the Bank. Issuance of such recommendation letter for taking over shall not relieve the contractor of any of his obligations under the terms and conditions of contract.

11.8. DISPUTES

11.8.1. SETTLEMENT OF DISPUTE BY ARBITRATION

a) Disputes and differences of any kind whatsoever arising out of or in connection with this contract or the carrying out of the works (whether during the progress of the works or within one year after their completion, or within one year after the determination or abandonment or breach of the contract) excepting however, on matters referred to in clause 9.3 and 9.5 of General Conditions of Contract hereof, shall be referred by either party for arbitration after giving at least 30 days' notice in writing to the other(s) (hereinafter referred to as the 'Notice for Arbitration') clearly setting out the items of disputes for reference to a Sole Arbitrator to be appointed as hereinafter provided.

b) For the purpose of appointing the Sole Arbitrator referred to above, the Bank will send to the Contractor within Forty seven days of the Notice for Arbitration, a panel of three names of persons who shall be presently unconnected with the organization of the Bank and the Contractor.

c) The Contractor shall on receipt of the names as aforesaid, select any one of the persons so named to be appointed as a Sole Arbitrator and communicate his name to the Bank within Forty seven days of receipt of the names. The Bank shall thereupon without any delay appoint the said person as the Sole Arbitrator. If the Contractor fails to communicate such selection as provided above within the period specified, the Bank shall make the selection and appoint selected person as the Sole Arbitrator. In the event, the contractor communicates disagreement to appointment of Sole Arbitrator as selected by the Bank than notwithstanding such disagreement, the person selected, as sole Arbitrator by the Bank shall be the sole Arbitrator.

d) If the Bank fails to send to the Contractor the panel or three names as aforesaid within the period specified, the Contractor shall send to the Bank a panel of three names of persons who shall all be unconnected with either party. The Bank shall on receipt of the names as aforesaid select any one of the person's names and appoint him as the Sole Arbitrator. If the Bank fails to select the person and communicate such selection to the Contractor, the Contractor shall be entitled to appoint one of the persons from the panel as the Sole Arbitrator and communicate his name to the Bank, provided however in case if delay by the contractor as regards such selection, the Arbitrator selected by the Bank shall be appointed as sole Arbitrator.

e) 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 as aforesaid.

f) The decision of the Architect/Consultant with respect to the matters referred in clause 9.3 and 9.5 of General condition of Contract herein, shall be final and outside the scope of arbitration. The Sole Arbitrator shall have power to open up, review and revise any certificate, opinion or decision, requisition or notice save in regard to matters enumerated in clause 9.3 and 9.5 of General Conditions hereof written and to determine all other matters in dispute which shall be submitted to arbitration and of which notice shall have been given as aforesaid. Subject to aforesaid, the Arbitration shall be governed by the Arbitration Act, and Conciliation 1946 or any other statutory modification thereof. The Award of the Arbitrator shall be final and binding on the parties. It is hereby agreed that in all

disputes referred to Arbitration, the Arbitrator shall give a separate Award in respect of each dispute or difference in accordance with the terms of the contract and give a reasoned Award.

g) The fees, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award including the fees, if any, of the Arbitrator, shall be directed to be borne and paid by such party or parties to the dispute, in such manner or proportion as may be directed by the Arbitrator in the Award.

h) The Bank and the Contractor hereby also agree that the Arbitrator under this clause shall be a condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

11.8.2. Settlement of dispute by arbitration:

a) All disputes and differences of any kind whatsoever arising out of or in connection with the contract or the carrying out of the works (whether during the progress of the works or within one year after their completion, or within one year after the determination or abandonment or breach of the contract) shall be referred to and settled by the Architect, who shall state his decision in writing. Such decision in writing may be in form of a final certificate or otherwise. The decision of the Architect with respect of any of the expected matters shall be final and without appeal as stated in the relevant clause on "matters to be finally decided by the 'Architect'".(Clause no.11.3).

b) But if either the Bank or the contractor be dissatisfied with the decision of the Architect on any matter, question or dispute of any kind (except any of the expected matters) or as to the withholding by the Architect of any certificate to which the contractor may claim to be entitled, then and in any such case either party (the Bank or the Contractor) may within (28 days) after receiving notice of such decision, give a written notice to the other party through the Architect requiring that such matters in dispute be arbitrated upon. Such written notice (hereinafter referred to as the 'notice for arbitration' shall clearly set out the items of disputes for reference to a Sole Arbitrator to be appointed as herein after provided: specify the matters which are in dispute and such dispute and difference of which such written notice has been given and no other shall be and is hereby referred to the Arbitrator being a fellow of the Indian Institute of Architects to be agreed upon and appointed by both the parties or in case of disagreement as to the appointment of a single Arbitrator, to the arbitration of two Arbitrators both being fellows of the Indian Institute of Architects, and to be appointed by each party, which Arbitrators shall before taking upon themselves the burden of re-reference appoint an umpire. The Arbitrator, the Arbitrators or the Umpire shall have the power to open up, review and revise any certificate, opinion, decision, requisition or notice save regard to the expected matters referred to the preceding clause, and to determine all matters in dispute which shall be submitted to him or them and of which notice shall have been given aforesaid. Upon every or any such reference the cost of an incidental to the reference and award respectively shall in the direction of the Arbitrator, or Arbitrators or the Umpire who may determine the amount thereof, or direct the same to be taxed as between attorneys and client or to between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to The Arbitration act, 1989 or any statutory modification thereof. The award of the Arbitrator, or the Arbitrators, or the Umpire shall be final and binding on the parties, Such reference except as to the withholding by the Architect of any Certificates under clause 7.3.5 to which the Contractor claims to be entitled, shall not be opened or entered upon until after the completion of alleged completion of the works or until after the practical cessation of the works arising from any cause unless with the written consent of the Bank and Contractor.

11.8.3. ARBITRATION:

a) Any dispute, controversy or claims out of or relating to this Work Order or breach, or termination or invalidity thereof, shall be settled by Arbitration in accordance with the Arbitration and Conciliation Act, 1996 as at present in force.

11.8.4. LEGAL:

a) All disputes and differences of any kind whatsoever arising out of or in connection with the Work Order whether during or after completion of contract shall be deemed to have arisen at Ayodhya, Uttar Pradesh and only Courts in Ayodhya, Uttar Pradesh shall have jurisdiction to determine the same.

11.8.5. WORK TO BE CONTINUED DURING THE PENDANCY OF THE ARBITRATION

a) The Contractor shall continue with the construction works with due diligence and speed so as to complete the same within the period agreed upon, notwithstanding any dispute or difference or question is referred to arbitration. The works shall not be delayed on account of any such reference made to the Arbitrators.

SPECIAL CONDITIONS OF CONTRACT

1. Tenderers shall go through all documents before quoting rates and provide for necessary cost as may be included in either bill or material or specifications.
2. Tenderers shall be given prices in blank column Entries in English made in ink. Arrive also at the grand total must also fill in all "rates only columns" and sign all corrections.
3. Tender shall be invalid unless all rates are filled in. No arbitrary condition shall be submitted. Tenders shall be signed by all the legal partners of the firm.
4. Each of the tender documents shall be signed by the Tenderer .
5. The Tenderer whose tender is accepted shall be bound to enter in to the contract within 7 days of intimation from BANK.
6. Work shall be done night and day without extra charge, if necessary.
7. Tenderer shall provide for stacking of materials in such a way as to facilitate rapid checking of quantities.
8. Materials supplied by owner shall be used only in owner's work.
9. Contractors shall pay any local charges relating to execution of work.
10. Contractor shall allow for all wastages in the rates.
11. Contractor shall arrange for all temporary connections.
12. No extras shall be paid, quantity sheets and drawings both are to be considered jointly and Architect/Consultant is the final authority for the interpretation.
13. Site instruction shall be deemed for proper execution, and shall be carried out without extra charge.
14. Order book with numbered pages shall be kept on site. Contractor shall carry out all instructions properly.
15. Contractors shall insure whole work against fire, PICT and third party.

APPENDIX TO GENERAL CONDITIONS OF CONTRACT

A	Mobilization Period	4 days from the date of Work Order
B	Date of Commencement of work on site	4 days after the date of Work order
C	Completion Period	40 Days from date of commencement
D	Earnest Money Deposit	@2% (to be paid by Demand Draft or Banker's Cheque favouring Uttar Pradesh Gramin Bank payable at Ayodhya (UP))
E	Security deposit	@ 3% of contract value refundable on virtual completion
F	Retention Money	7% of the payment
G	Defects Liability Period	12 Months from date of Virtual Completion
H	Liquidated Damages for Delay	1% per week up to max. of 10.0% of Contract value
I	Period of Final Measurement	1 month
J	Frequency of Interim Bills	20 working days.
K	Value of Interim Certificate	Rs 9,50,000/- (Rupees Nine Lakh Fifty Thousand only)
L	Period of honouring Interim Certificate	10 working days from receipt of certification of Architect
M	Performance Bank Guarantee	5% of Contract Value to be deposited to Bank

Signature of Contractors:

Date

Witness:

The Contractor will be expected to submit, along with Interim Bills, “Performa A” duly filled in and serially numbered with dates for all extra and deviated items of work. In absence of these, the extra / deviated items will not be certified for payment. The Contractor will be expected to submit with the Final Bill “Performa B” duly completed.

PROFORMA A					
DEVIATIONS (INTERIM)					
Name of Work:					
Interim Bill No.:					
		Tender Provision	Actual Amount	Excess (+)	Remarks
		Rs.	Rs.	Savings (-)	
Deviated Items	±				
Extra Items	+				
Deleted Items	-				
Tender Items (As executed)					
Actual cost (as executed)					
Less tender cost					
Net Excess / Saving	0				

PROFORMA 'B'

DEVIATIONS (FINAL)

Name of Work:

Interim Bill No.

Tender provision	Actual Amt.	Excess (+) Rs.	Savings (-) Rs.	Remarks.
Deviated Items (+)				
Extra Items (+)				
Deleted Items (-)				
Net Excess / Savings				
Tender Items (As executed)				
Actual Cost (As Executed) LESS Tender Cost				

PROFORMA C

CONTRACTORS' LIABILITY AND INSURANCE SUMMARY

Name & Number of Insurance	Value of Insurance	Validity	Loss or damage to work
Policy with Description Insurance or any part thereof and all materials at site from any cause whatsoever		Period (covered under policy)	
1.	2.	3.	4.
_____ a)			

b)

c)

Damage, loss or injury to any property of the Consultant agents and servants	Claims under the Workman compensation Act 1923, the Minimum Wages Act 194_ & Bank or Contract Labour (Regulation or his & Abolition) Act 197_	Remarks
5.	6.	7. _____

a)

b)

c)

NB: Details of further policies if any taken and the loss or damage if any under that policy may please be indicated separately at appropriate places.

Signature of Contractor

Address:

Witness: _____

PROFORMA D

REPORT OF VIRTUAL COMPLETION

Draft letter to be written by the Contractor to the Architect/Consultant in connection with the Virtual Completion Certificate as per the relevant clause.

"Having executed the work in terms of the Contract, we hereby certify that we have virtually completed the works covered by our Contract Agreement.

We hereby certify that the work has been executed wholly conforming to drawings, specifications and instructions of Architect/Consultant.

We do certify further that we have executed the work in accordance with the applicable laws and without any transgression of such laws."

NOTE: The Virtual Completion Certificate will be endorsed by the Architect/Consultant as having examined the works and certifying that work has been executed as per detailed drawings and specifications.

PROFORMA 'E'

UNDERTAKING/HYPOTHECATION IN CONNECTION WITH PAYMENT OF ADVANCE ON MATERIALS BROUGHT BY THE CONTRACTOR TO THE SITE

This undertaking executed at this _____ day of ____month of year 20__ By _____ (hereinafter called the Contractors) IN FAVOUR OF which expression shall include its _____

The _____ and having its _____ (herein after called the Bank) which expression shall include its successors and assigns.

The Bank and the Contractors have entered into an Agreement dated _____ for construction of on office complex on piece of land belonging to the Bank at _____ (hereinafter called as the said agreement) in terms of which Contractors will be paid an advance of 75% of the cost

of materials brought by the Contractor to the site for consumption in the works at the discretion of the Bank.

The Contractors have since applied to the Bank that they be allowed advances as the security of materials absolutely belonging to him and brought by them to the site of work and the Bank has since agreed to do so on the terms and conditions hereinafter set out.

Now this letter of Undertaking witnesses that in consideration of the said agreement, and in consideration of the amount paid/payable to the contractors by the Bank and of any further advances as may be made to the contractors as aforesaid, the Contractors hereby agree with the Bank and undertake as under:

The amount advanced by the Bank to the Contractors as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor(s) in or towards expediting the execution of the said works and for no other purpose whatsoever.

2. That the materials which have been offered to and accepted by the Bank as security are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractors will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractors indemnifies the Bank against all claims to any materials in respect of which an advance has been made to them as aforesaid.

That the materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the Contractors solely in the execution of the said works in accordance with the directions of the Bank/Architect/Consultant and in the terms of the said agreement.

That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper storage, watch, safe custody, accounting and protection against all risks of the said materials and that until used in construction as aforesaid, the said materials shall remain at the site of the said works in the Contractor's custody and on the responsibility and shall at all times be open to inspection by the Bank/Architect/Consultant or any officer authorized by the Bank. In the event of the said materials or any part thereof being stolen, destroyed or damaged, the Contractor will forthwith replace the same with other materials of like quality or repair and make well the same as required by the Bank/Architect/Consultant.

That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Bank of his authorized representative.

That the advances shall be repayable in full at or before the Contractors receive payment from the Bank of the price payable to them for the said works under the terms and the provision of the said agreement provided that if any intermediate payments are made to the Contractors on account of work done, then on the occasion of each such payment the Bank will be at liberty to make a recovery from the Contractor's bill for such payment deducting there from the value of the said material then actually used in the construction and in respect of which recovery has not been made previously the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

That if the Contractors shall at any time make any default in the performance or observance in any respect of any of the term and provisions of the said agreement or of these presents, the total amount of the advance or advances that may still be owing to the Bank shall immediately on the happening of such default be repayable by the Contractors to the Bank together with interest thereon at Eighteen per cent per annum from the date or respective date of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Bank in or for the recovery thereof or the

enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Bank to repay and pay the same respectively to him accordingly.

That the Contractor hereby hypothecates all the said materials for the time being at site or to be brought at site from time to time until the repayment to the Bank of the sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith, the Bank may at any time thereafter adopt all or any of the following courses as he may deem best.

a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement, debiting the Contractor with the actual cost of effecting such completion and the amount due in respect of advances under these presents and crediting the Contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the Contractor, he is to pay it to the Bank on demand together with interest accruing thereon.

Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Bank under these presents including expenses incurred by Bank in connection with such auction and pay over the surplus (if any) to the Contractor.

Deduct all or any part of the money owing hereunder out of the security deposits or any sum payable to the Contractor under the said agreement.

That except in the event of such default on the part of the Contractor as aforesaid, interest on the said advance shall not be payable.

That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been herein before expressly provided for, the same shall be referred to the Bank's Chief Engineer whose decision shall be final and no appeal shall lie against his decision before any court, arbitrator or authority.

The Provision of this undertaking shall be deemed to be supplemental to the said agreement.

IN WITNESS WHERE OF the contractors have set their hands to these presents the day and year first herein above written.

SIGNED, SEALED AND DELIVERED BY THE SAID CONTRACTOR IN THE PRESENCE OF-

WITNESS:
SIGNATURE
NAME
ADDRESS

WITNESS:
SIGNATURE
NAME

ADDRESS

PROFORMAS

SCHEDULE OF EXCEPTION AND DEVIATIONS

The bidder shall include in a schedule all exceptions or deviations made from the bidding documents of whatever nature included in the proposal.

Unless exceptions and deviations are stated in this schedule, the bidder will be deemed to have agreed with the conditions and specifications as stated in the bidding documents.

Each bidder shall be free in his proposals to indicate deviations and / or exceptions and / or alternative to these bidding documents.

Item	Ref. Clauses	Description	of
Exceptions and / or Deviations			

SIGNATURE OF TENDERER

EQUIPMENT TO BE DEPLOYED AT SITE

The Tenderer shall specify in the form given below list of proposed equipment to be deployed for the work if awarded to the Tenderer.

Type	Number	Make	Capacity	Location	Bank
------	--------	------	----------	----------	------

SIGNATURE OF TENDERER

SCHEDULE OF PROPOSED SITE ORGANISATION

The Tenderer is to indicate here the proposed site organization he proposes to set up for execution of the work. It is understood that this will be augmented from time to time depending upon the requirement for timely construction of work, as directed by Engineer-in-charge.

BIO-DATA OF SITE-IN-CHARGE & KEY PERSONNEL

SIGNATURE OF TENDERER

Certified that the above information is correct

SIGNATURE OF TENDERER

PREAMBLE AND SPECIFICATIONS

The quantities given in this schedule of quantities are approximate and subject to variations without vitiating the contract.

Pricing

The rate for each item of work shall, unless expressly stated otherwise, include the following (but not limited to the list given below) for the completion of works in all respects as per conditions of Contract, technical specifications, drawing etc.:

All taxes such as Royalties, Transportation, Freights, Packing and forwarding charges Insurance etc., All requirements and expenses for completion of work as per Rules and Regulations of Local Bodies, State Government and Central Government of India.

All materials, equipment's, accessories, consumable, controls and instruments, tools, tackles, plants, scaffolding/double scaffolding labour, maintenance, fixing, cleaning, making good hauling, hoisting etc., Waste on material and labour.

Loading, Unloading, handling/double handling, setting out protection from weather, temporary supports, platforms etc., and the maintenance, of the same, dismantling of temporary works, disposal of debris and all other labour necessary for the execution of works.

Testing the installation as often as necessary, Contractors to arrange for all special instruments and tools required for such testing.

Painting of all equipment, pipes, supports etc., as per color codes to be decided for various systems.

Apportion of costs for general facilities to be used by the Contractor's staff such as lifts, electricity, telephones etc. during execution if such facilities are provided by other contractors and who arrange for such facilities in the first instance.

Fees for testing the materials, equipment or overall installation by appropriate authorities. Supervising Civil/ Masonry / Carpentry Works done by other agencies on behalf of the Bank for Interior contractor.

All requirements of specification and drawings. Description of work given in the schedule of quantities is a brief description and shall be read in conjunction with specifications and drawings.

Removal of POP covering and carting away all unwanted material including POP.

The rates quoted by the Tenderer will be deemed to be for the finished work complete in all respects with accessories, fitting, mounting arrangements normally provided with such equipment and/or needed for execution, completion, safe operation of equipment as required through they may not have been specifically mentioned in technical specifications, drawings and/or schedule of equipment.

All minor Masonry, Carpentry and Civil works such as cutting opening in Masonry Walls, Internal Partitions, Chasing on walls, etc. and making good the same to match existing works shall be provided by the contractor, whenever asked for by the Architect/Consultant.

SCHEDULE OF QUANTITIES

All items of work contracted for shall be executed strictly in accordance with the description of the item in the Schedule of Quantities, relevant drawings and specifications read in conjunction with the appropriate Indian Standard specifications and conditions of the contract and established Engineering practices.

The rate for each item of work included in the schedule of quantities shall unless expressly stated otherwise include cost of:

All materials, fixing materials, accessories sequence of operations, appliances, tools, plant equipment, transport labour and incidentals required and completion of the work called for in the item and as per specifications and drawings completely

Wastage on materials and labour

Loading transporting, unloading, handling as necessary, hoisting to all levels, and setting, fitting and fixing the position, protecting, disposal of debris as directed and all other labour necessary and to fully complete the job in accordance with contract documents, good practice and recognized principles of trade laid down in codes of practice. Liabilities, obligation and risks arising out of conditions of contract.

All requirements of specifications, whether such requirements are mentioned in the item or not shall be provided for the specifications and drawings where available are to be read as complimentary to any part of the schedule of quantities and any work called for in one shall be taken as required for all similar items.

In the event of conflict between Schedule of Quantities and other documents including the specifications the most stringent among them shall apply and the interpretations of the consultants/owner shall be final and binding.

The Contractor shall be paid for the actual quantity of work executed by him in accordance with the drawings at the accepted rates.

This schedule shall be fully priced and the extensions and totals duly checked. The rates for all items shall be filled in INK. The entries under amount column shall be rounded off to the nearest Rupee.

No alterations whatsoever is to be made either to the description of items in the Schedule of quantities or specifications unless such alterations, is clarified in writing by the consultant/owner. Any such alterations, notes or additions shall unless clarified in writing be disregarded when tender documents are considered. Any observation on BOQ should be made in the letter accompanying technical bid for proper consideration and on disfiguring or overwriting in the documents is permitted.

In event of an error occurring in the amount column of the schedule, as a result of wrong extension of unit rate and quantity, the unit rate quoted by the Tenderer shall be regarded as firm and the extensions shall be amended on the basis of rates.

All errors in totaling in the amount column and in carrying forward totals shall be corrected.

Unless otherwise stated, all measurements shall be taken in accordance with Indian standard for building of Measurements IS 1200 latest revision effective on the date of measurement for interior items as applicable.

Any errors in quantity of items from the contract schedule shall not vitiate this contract but shall be corrected and deemed to be a variation by the Architect/Consultant/Owner.

DRAWINGS AND DATA

Within two weeks of placement of order/letter of intent contractor shall furnish the following data in triplicate for approval by Architect/Consultant/Owner.

General arrangement drawing of the equipment on orders showing plan, elevations, and sectional views, mounting details.

Bill of materials.

Descriptive catalogues, characteristic curves, duty point efficiency factor and technical particulars of all the various equipment offered.

SPARE PARTS AND MAINTENANCE FOR MATERIALS SUPPLIED

Tenderer shall offer along with the bid, duly recommended by manufacturer set of spare parts required for a period of 1 years continuous operation. Itemized unit prices with exact quantities recommended for these spares shall be separately indicated for consideration of the Owner/Consultant.

DOCUMENTS MUTUALLY COMPLIMENTARY

The several documents forming the contract are to be read as mutually complementary to each other and in case of ambiguities/ discrepancies, the same shall be explained and clarified by the Consultant/Owner to the Contractor in what manner the work is expected to be carried out to meet the end requirements.

INSTRUCTIONS DURING EXECUTION

On the advice of the Owner, the consultants may issue further drawings and written instructions, details, directions and explanations collectively referred to as "Site instruction" in regard to:

Variations for modification of the design, quality or quantity of works as addition or omission or substitution of any work therein.

Any discrepancies in the drawings or between the schedule of quantities and/or specifications and/or drawings.

Removal from the site any material brought by the contractor and substitution of any other materials therefore.

The dismissal or removal from work of any person employed thereupon.

Removal/re-examination of any works executed in case of doubt of any nature.

Opening up for inspection of any work covered up without proper tests by the Architect/Consultant.

Oversight on the part of the Architect/Consultant/his assistant to disapprove any defective work or material shall not prejudice the Owner/Consultant, thereafter to disapprove such work or materials and to order pulling down, replacement, removal breaking up or reconstruction.

The Contractor shall make his own arrangement for the engagement of all labour and shall be responsible for regulating their service conditions, work conditions in conformity with all Acts, Regulations, Rules or order of competent authority under relevant laws in force during the pendency of the contract.

Contractor shall indemnify the Owner from all claims relating to the workers/ staff/ subcontractors, Salaries, Wages, Overtime, Leave, Provident Fund, Medical facilities, gratuity, Bonus or any other claim as applicable and stipulated in any statutory provisions, rules or order of competent authority.

All materials so far as procurable shall be of the reputed make in the category of manufacture and bear the stamp of quality of the Bureau Standards wherever applicable. The contractor shall furnish documentary proof, test certificates and guarantees as relevant to such materials from manufacturers, which shall match with the date of procurement.

MASONRY: Rate shall include for provision of

Work at all heights, depth and in all situations and to all shapes and profile and all necessary works like staging, ladders, platforms, double staging etc. all are required for proper execution of works.

Hacking and roughening of concrete or other surfaces coming in contact with masonry for bondage, cutting bricks/blocks, wastage etc.

Raking out joints to specified depth either for plaster or pointing or finishing the joints flushes as the work proceeds, all as directed.

Bedding and pointing wall-plaster, lintels, sills etc. in or on walls, bedding and pointing doors, windows and like in cement mortar.

Making openings for pipes, conduits, ducts etc. and closing the same after completion of such works and finishing as directed.

Providing at exact locations and to exact sizes pre-designated openings.

Forming chases for edges for concrete floors or other units, for scaling in of waterproofing layers, etc.

Providing cement concrete blocks (1:2:4) at doorjambs where required to receive expansion bolts/holdfasts etc.

Building in holdfasts and or inserts, supplied by the engineer.

Keeping the work well wetted for 10 days.

Bricks/blocks to be wetted before use.

Bailing out, pumping out or otherwise removing all water, which may accumulate from all causes.

Sampling and testing of any other material during the course of work as and when directed.

Plaster Rates shall include for provision of:

Work at all levels, heights and to all situations and profiles. Double scaffolding, working platforms etc.

A coat of neeru plaster soon after the curing period is over.

Work in narrow widths and small quantities unless special provision is made to the contrary.

Preparation to the surfaces by raking out joints in brick or by hacking the concrete surface and wetting the surface before plastering wherever required.

Thickness of plaster exclusive of the thickness of key i.e. grooves and open joints in brickwork, stone work etc.

Chamfers of any width, internal and external rounded angles and chases and forming sharp and clean edges as shown.

Curing, protection and cleaning of all surfaces.

Keeping all plastered surfaces well wetted for at least 7 days.

PAINTING AND POLISHING

The rates shall include for provision of:

Works at all heights and use of all scaffolding quantities, ladders, cradles etc. necessary for execution work and for inspection.

Preparing surfaces to receive finishing coats, such as brushing to remove all extraneous materials and fungus growth. If any, preparing, scraping, washing and rubbing etc.

Puttying, sand papering and dusting of surfaces in between coats where applicable.

Work on cornices, narrow bands and widths, recesses grooves etc.

Finishing to approved matt texture and/or stipple finish etc. complete as directed.

Spreading and removing, covering to doors window. Floors, fittings, ducts, pipes etc. to protect them from splashes

Washing floors, cleaning glass, joinery, electrical fittings, ducts. Pipes etc. of drops and splashes and leaving premises clean and tidy.

FLOORING, DADO, SKIRTING AND WALL FINISHES

The rates shall include for provision of:

Use and waste of all temporary fillets, side-forms, templates, moulds, straight edges etc.

Washing of coarse and fine aggregates, wherever required by the consultants.

Final preparation of the base, sub-grade or sub-floor including minor trimming of the base to remove slight undulations if necessary.

Cleaning and watering the surfaces immediately before laying the floor.

Providing bedding layer of mortar as specified, in case of slabs, tiles etc. to correct levels of slopes as called for.

Cutting, rubbing and polishing surfaces and edges where applicable.

Rounding off corners, edges and junctions of floors with skirting or dado and also cutting recesses where required to accommodate recessed skirting.

Forming rounded recess in floor where called for.

Providing grooves where shown on drawings.

Work in narrow widths, bands, cornices, and strips and to profiles shown at all heights, levels, and locations and in small quantities, unless otherwise mentioned.

Curing, protecting and cleaning all finished surfaces as specified.

Work on any surface such as bricks, concrete, stone etc.

Providing grooves at the junction of plaster with other finishes as called for.

Scoring surfaces of plaster for key where the surface is not required to be finished fair.

All samples of finishing materials shall be got approved prior to use.

Keeping the work well wet for at least 7 days.

Cutting tiles/slabs to require size/shapes providing holes etc. before laying.

Hand polishing, machine polishing, cleaning tiles with acid.

All marble work e.g. flooring, cladding, skirting, dado etc. shall have white cement based mortar in bedding and grouts.

All ceramic tiles shall be of 1st quality.

All stone flooring to be protected by POP covering with plastic base.

CARPENTARY AND JOINERY

Rate shall include for provision of:

Unless otherwise specified, the quoted rates shall be for all joinery work with approved Indian Teakwood, Steam beech wood free from all defects and kiln seasoned and preservatives treated and shall be got tested in laboratory and approved before placing or applying primer coat. The rate shall also include for applying two coats of Solignum paint to the face of frames in contact with masonry or concrete and the like.

The rate quoted shall include for fixing on masonry/RCC members and for 300 x 40 mm x 6 mm finished MS holdfasts embedded in PCC (1:2:4) blocks of 230 x 150 mm size and of width to suit the thickness of masonry wall or for anchor fasteners, coach screws etc. of adequate size for fixing to RCC members, as

Care shall be taken to thoroughly clean the hardware, fittings, glass panes, doors, etc. of the waste cement marks, left over paint marks etc.

The rate shall include for providing temporary supports etc., for fixing of frames and shutters at all levels.

The rate quoted shall be inclusive of any chiseling work, raking of sides, sills, soffits, if required and making good the surface.

The sizes mentioned are for finished items.

Also the rate quoted shall include for:

Planning and finishing smooth all faces of various faces as required.

All screws, nails, pins, keys and such other fixing accessories.

Cutting rebates, Grooves etc. in frames/shutters as required or as directed.

Approved glue or adhesive for all joinery work.

Providing seasoned Burma T.W., beech wood best quality, beading, trimmings, beads, weather bars etc. as called for. Providing rough grounds as per drawings.

Providing as per schedule/drawings all hardware, fittings and fixture like, latches, hinges, and tower bolts etc. locks and other items as indicated for fixing such items supplied by the Engineer-in charge at no extra cost.

Solignum treatment to all hidden wooden members and all board or ply faces coming in contact with masonry or concrete faces where retarding treatment is not called for.

Providing and applying pink primer to all wooden surfaces till the same are painted/polished.

Filling and finishing neat gaps around frames, doors, windows etc. with approved mastic.

Work at all heights and locations.

Wherever painting is specified it includes painting the surfaces with three coats of first quality synthetic enamel paint of approved shade and make over a coat of wood pink primer.

Wherever polishing is specified it include polishing the surfaces with two or more layers of French spirit polish, with approved additives, stainers to get even shade over a coat of primer of approved chemicals.

All plywood and blackboard edges where exposed shall be finished with teakwood Lipping.

Unless otherwise specified, all door shutters specified are to be solid core flush door shutters, with topping bonded with phenol formaldehyde and confirming to relevant Indian Standards.

METAL WORK

The rates shall include for provision of:

All steelwork shall confirm to IS-800 and rolled steel to IS-226 and IS-1977. All pressed steel sections shall be heavy duty.

Supplying all materials, fabricating, hoisting and fixing in position complete with expansion fasteners, coach screws, hold fasts, screws etc. and for RCC(1:2:4) blocks of adequate size as directed.

Glazing of windows, ventilators, doors should be as approved by Architect/Consultant.

Supplying and fixing all hardware of specified and approved type and make, confirming to standard practices followed by approved manufacturer.

Door, windows, rolling shutters, fire doors shall be fabricated by approved manufacturer.

Member's joints shall be mechanically cut to length mitered and electrically welded with true corners.

Providing Silicon sealant in gaps between frames and masonry/concrete faces after erection.

Painting with a coat of zinc chromate's primer and three coats of synthetic enamel paint of approved make including supplying putty to obtain even and smooth finish.

Before fabrication, the contractor must take approval of the Architect/Consultant for type of sections, hardware, glass etc. to be utilized. He should take actual measurements at site and fabrication shall be done accordingly.

Providing necessary coupling, transoms and mullions wherever required as per relevant I.S. code (I.S. 1038).

SPECIFICATIONS GENERAL

These specifications are for work to be done, items to be supplied and materials to be used in the works as shown and defined on the drawings and described herein all under supervision and to the entire satisfaction of the Architect/Consultant & owner.

The workmanship is to be the best available and of a very high standard, use must be made of specialist tradesmen in all types of work and necessary allowance must be made for the same in the rates quoted.

The materials and items to be provided by the contractor shall be the best of their respective kinds as specified in the tender and in accordance with the samples approved, where materials or products are specified in these specifications and/or Bill of Quantities by the name of the manufacturer of the brand name, trade name or catalogue reference, the contractor will require to obtain prior approval of the Architect/Consultant and owner for using substitute material or product. The contractor shall produce all invoices, vouchers or receipted accounts for any materials if called upon to do so by the Architect/Consultant and owner.

Samples of all materials are to be submitted to the Architect/Consultant/owner for his approval before the contractor orders or delivers in bulk in the site. Samples together with their packing are to be provided by the Contractor free of charge and approved samples will be retained by the owner and designer for comparison with the materials which will be delivered to the site.

Should any materials be rejected by the Architect/Consultant/owner, they will be removed from the site at the Contractor's expense. Also the contractor will be required to submit specimen finishes of colours, fabrics, etc. for approval of Architect/Consultants/ owner before proceeding with the works. Should it be necessary to prepare shop drawings, and then four copies of such drawings shall be submitted for approval of the Architect/Consultant who will retain two copies, all at the Contractor's expenses.

Timber generally is to be the best of its kind, well and property seasoned, of natural growth, free from work holes, large loose or dead knots or other defects and sawn die square and not to suffer from warping, splitting or other defects through handling.

The hardwood is to be Hollock or red maranti with moisture contents not more than 20%.

Teak is to be the best quality from Dandeli free from soft heart, worm and bee holes, and weighing not less than 50 lbs. per cubic foot with maximum moisture contents of 12%. Teak veneers and flitches shall match each other throughout and, where possible, shall match existing flitches in the building.

The particleboard shall be of high density, equal or superior quality to that laid in the I.S. 3478 and as approved by the Architect/Consultant.

The blackboard shall be of Mysore, Anchor or P.G.Brand, one of the following I.S. Specification or such approved adhesives shall be used: -

I.S. 851 - 1957: Synthetic Resin adhesive for construction work in wood.

I.S. 849 - 1957: Cold setting case in glue for wood. Where glued joinery and carpentry work is likely to come into contact with moisture, the glue shall be waterproof. The use of animal glues will not be permitted.

Flush doors of hollow framed core insulated construction shall be constructed with 4" wide stiles, top and bottom rail, one 4" wide horizontal intermediate rail and two 4" wide diagonal braces, filled in solid with approved rigid type polyurethane doors shall be constructed with one 3" wide and one 5" wide stile, 4" wide top and bottom rail, one 4" wide horizontal intermediate rail and 2" wide diagonal braces; filled in as described before.

Flush doors of hollow framed core construction shall be constructed with 3" wide stiles and top rails, 5" wide bottom rail, two 6" wide horizontal intermediate rails with beehive core of 1" wide filling pieces at 4" centers both ways and blocked out as necessary for lock and hinges. All horizontal members shall have 1/4 dia. borings.

All doors shall consist of selected hardwood properly jointed together and they shall be covered on both sides with 3/16" teak veneered plywood or as specified. Each door is to be lipped all around with 1/2" teak twice-rebated edging tongued to the stiles and rails and mitred. The doors are to be the full thickness as specified. The lipping on the meeting stiles of folding doors shall be increased to take the rebate as specified.

Frames to doors, windows, etc. shall be of hardwood or teak as specified and to the required sizes with all necessary mouldings with mortised and tenoned joint, lead and teak pins and secured in position as specified.

Shelves generally shall be constructed of plywood with edgings of 1" teak tongued on.

Timber is to be cut to the required sizes and length as soon as practicable after the works are begun and stored under cover so that the air will circulate freely around it. Joinery is to be prepared immediately after the finalisation of the contract, framed up (but not boned) and stored until required for fixing in position, when it is to be bonded and wedged up. Any portion that warps or develop shakes or other defects are to be replaced before wedging up. The whole work is to be framed and finished in a proper workman like manner, in accordance with the detailed drawings, and fitted with all necessary metal ties, straps, bolts, screws, etc.

Turning bonded joints are to be cross-tongued with teak tongues and where over 1/2" thick, to be double cross tongued. Joiner's work generally is to be finished with fine sand papered surfaces unless otherwise specified.

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

Grounds are to be clean sawn, free from large knots, splayed as required and plugged and fixed to walls, etc. at 1'-6" centers unless otherwise specified.

Wood plugs are to be cut on the twist. Patent wall plugs or plastic fillings may be used in lieu of wood plugs with the prior approval of the Architect/Consultant.

All unexpected surfaces of timber, e.g. false ceilings, backing fillets, backs of door frames, cupboard framing, grounds, etc. are to be treated with two coats of Atlas 'A' or other equal and approved timber preservative before fixing or bedding

The service stations, bar counters, shelving, etc. shall be generally constructed of plywood as described and specified properly housed, grooved tongued, glued, blocked and screwed together and entirely to the satisfaction of the Architect/Consultant.

The banquettes, chairs, tables, etc. shall be generally constructed of teak, foam rubber and fabric as described and specified, properly housed, grooved, tenoned, tongued, glued, blocked and screwed together in the manner of good quality furniture and entirely to the satisfaction of the Architect/Consultant & owner. A prototype sample of all custom made pieces must be prepared and submitted to the Architect/Consultant for his owner's approval before proceeding with the work in quantity.

HARDWARE & METAL:

The hardware throughout shall be of approved manufacture and supply, well made and equal in every respect to the approved samples to be deposited with the owner and Architect/Consultant. For the purpose of approval of samples, the contractor may be required to produce and provide to the Architect/Consultant, samples from many different sources and should allow in his rates for the same.

Fittings generally shall have satin chrome or anodised finish unless otherwise stated and shall be suitable for their intended purpose of use.

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

The bronze and brass surfaces shall be covered with thick grease or other suitable protective material renew as necessary and subsequently clean off and clear away on completion.

Aluminium and stainless steel shall be of approved manufacture and suitable for its particular application generally, the surfaces of all aluminium shall have an anodized finish and the quality and finish both shall comply with the samples approved by the Architect/Consultant & owner. All steel, brass, bronze, aluminium and stainless steel articles shall be submitted for test for strength, if so, required by the Architect/Consultant & owner, at the contractor's expenses. All brazing and welds are to be executed in a clean and smooth manner, rubbed down and left in the flattest and tidiest way, particularly where exposed.

Chromium plating shall be in accordance with B.S. 1224 or as per approved specifications for "normal outdoor conditions", and shall be on a base material of copper or brass. FIBRE GLASS

The fiberglass decorative panels shall be constructed or 30% glass fibre chopped strand mat reinforced with 70% polyester resin; the fibreglass and resin to be either pigmented or sprayed with and fired with tarred paint. The panels shall be made in moulds to the approved design as per drawings and to the thickness required by the Architect/Consultant. The fibreglass panels are also obtainable from the approved suppliers. GLAZIER

All glass to be approved manufacture complying with is: 3548-1966, or as per approved quality and sample, to be of the quality specified and free from bubbles, smoke wanes, air holes and other defects.

The compound for glazing to metal is to be a special non-hardening compound manufactured for the purpose and of a brand and quality approved by the Architect/Consultant & owner.

In cutting glass, proper allowance shall be made for expansion each square of glazing to be in whole sheet. On completion, clean all glass inside and out, replace all cracked, scratched or broken panes and leave in good condition to the satisfaction of the Architect/Consultant & owner.

PAINT & POLISHING

All materials required for the works shall be of specified and approved manufacture, delivered to the site in the manufacturer's containers with the seals, etc. unbroken and clearly marked with manufacturer's name or trade-mark with a description of the contents and colour. All materials are to be stored on the site of the works.

Spray painting with approved machines will be permitted only if prior written approval has been obtained from the Architect/Consultant. No spraying will be permitted in the case of priming neither coats nor where the soiling of adjacent surface is likely to occur. The nozzle and pressure to be so operated as to give an even coating throughout to the satisfaction of the Architect/Consultant. The paint used for spraying is to comply generally with the specification concerned which is to be specifically prepared by the manufacturer for spraying. Thinning of paint made for brushing will not be allowed.

Wood preservation shall be Solignum or other equal and approved impregnating wood preservative, and all concealed woodwork shall be so treated.

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

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

Surfaces of new woodwork, which are to be painted, are to be rubbed down, knotted and stopped to the approval of the Architect/Consultant & owner.

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

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

PLASTER

Cement/lime plaster for internal surfaces shall be applied in two coats, as follows:

Undercoat 3/8" thick composed of 1 part cement, 4 parts lime putty, 12 parts clean washed sand, measured by volume, the whole laid evenly, straightened with a rule and scratched to form key.

Finishing coat 3/8" thick composed of 1 part cement, 3 parts lime putty, 6 parts clean washed sand, measured by volume, trowelled with a steel trowel to a smooth or textured finish in accordance with samples approved by the Architect/Consultant.

A minimum period of 7 days must elapse between the application of undercoat and finishing coat. The total thickness of the plaster must not exceed 3/4".

Rough rendering shall be composed of cement and sand (1:4) floated to the thickness required to fill in voids behind facings, dubbing out to uneven surfaces, etc. Dubbing out must not under any circumstance exceed 1" in thickness at any point.

Screeds and backings shall be composed of cement and granite fine or sand (1:3) and shall be properly laid to rules and floated to a surface suitable to receive the finishings specified.

Mixing of lime/cement plaster, cement rendering and screeds shall be carried out with machine driven roller-pan mixers of a type and size approved by the Architect/Consultant. For smaller quantities, or in exceptional circumstances, the Architect/Consultant may require or approve mixing by hand on a clean dry floor or platform. Measurement of all constituents is to be made by means of gauge boxes. Gypsum plaster shall be of approved manufacture, delivered to the site in the manufacturer's sealed bags or drums, bearing the name of the manufacturer and the brand of plaster are to be in accordance with B.S.1191 for the following types -

Undercoat plasters are to be borrowing or "slow setting browning" of class "B", type a - retarded semi-hydrates.

Finishing plaster used on undercoats is to be of Class 'B' type b - retarded semi-hydrates or class "B" type c - dual-purpose plaster.

Finishing plaster used on plasterboard is to be of "Board finish" type, Class "B", type b - retarded semi-hydrates.

Keep's Cement is to be dual-purpose type in accordance with class "B", type c.

Plaster of Paris to be in accordance with class "B".

Joints of brickwork, etc. are to be thoroughly raked out and loose particles of mortar, etc. brushed out to form key for plaster. Concrete work generally is to have a coat of "spatterdash" applied to form key for plaster, etc. The concrete shall be dampened immediately after removal of formwork and "spatterdash" consisting of 1 part of cement and 2 1/2 parts coarse sand (by volume) mixed to the consistency of a thick slurry, thrown on with a hand trowel to thickness not exceeding 1/4". The "spatterdash" shall be waited one hour after application and left to harden.

All pavings, wall linings, etc. are to be adequately covered up and protected until the completion of the works. The whole of the finished work to be cleaned off and left in a sound and perfect condition to the satisfaction of the Architect/Consultant & owner. Where particularly, required, pavings will not be laid until completion of all other work.

Gypsum plaster to surface of concrete or brickwork is to be two-coat as follows:

Undercoat composed of one part "browning" or slow setting browning plaster as described above with two parts of sand, the whole laid on evenly, straightened with a rule and scratched to form a key.

Finishing coat to be as described above, applied neat or with an admixture of not more than 25% volume by lime putty, trowelled with a steel trowel to smooth even surfaces.

The total thickness of two-coat work must not exceed 1/2".

Gypsum plasterboard shall be of approved manufacture and in accordance with B.S. 1230. Consisting of a core of set gypsum plaster in accordance with B.S. 1191 sandwiched between two sheets of heavy paper to a nominal thickness of 3/8". Plasterboard is to be nailed to timber bearers with 1 1/4" x 12 S.W.G. galvanized screws with 3/8" dia. heads, spaced about 6 inches apart and not less than 3/4" from the edges and ends. Nailing is to commence at the centre of the board. Boards are to be spaced 1/8" to

1/4" apart at the joints and end joints are to be staggered to break bond. The boards are to be fixed and cleaned at least 24 hrs. before the application of plaster and in no circumstances should it be wetted before plastering.

Gypsum plasterboard is to be prepared for plastering by filling the joints with 'board finish' gypsum plaster as described above and pressing into the plaster, dry reinforcing jute scrim cloth 3 1/2" wide trowelled as flat as possible. When the plaster to the scrimed joints has set, thin coat of neat gypsum plaster is to be applied over the whole surface to level up followed immediately by a finish coat to a total thickness of 3/16". The finish coat when almost set is to be trowelled to a smooth surface using as little water as possible applied with a brush. The admixture of lime with gypsum plaster will not be permitted.

Internal wall tiling is to be of a quality and equal to samples approved by the Designer as suitable for the standard of work required. Tiles are to be of 'A' Grade. Indian manufacture size 4 1/4" * 4 1/4" * 6mm thick cushion edge coloured egg shell glazed tiles fixed complete with rounded nosing tiles to external angles or as specified. The tiles are to be soaked in clean water and brushed on the underside with a cement slurry before bedding on a cement and sand (1:3) and painted in neat white or coloured cement.

Pavings composed of cement and sand (1:3) are to be trowelled smooth with steel trowel or floated with a wooden hand float as required.

Dividing strips of brass, stainless steel or plastic as specified and on approval, shall be provided and bedded to, finished flush with finished floor levels between different types of pavings or where abutting wood floors.

Stone flooring and cladding should be of dimensions, quality and colour as specified and shall conform to the relevant I.S. specification samples of stone materials should be got approved by the Designer/Client prior to installation allowed without extra charge, unless such variations are made after conduits, cables, etc. are fixed.

All cables shall be of 1st quality manufacturer and the Main Contractor will be required to submit a samples of wiring materials to the Designer & owner, for their approval before commencing the installation.

GENERAL SPECIFICATIONS FOR "UPHOLSTERED" FURNITURE :

TIMBER : All timbers used are to be of top quality, free from knots, shakes, and worm holes, and with a moisture content of not more than 12% depending on the climatic conditions prevailing at the site.

Timbers which are completely hidden, that is when covered by upholstery material, can be of local hardwood, except where this interfaces with the strength of the product, as in the case of a leg or arm which is part covered and part finished.

JOINTS: All joints shall be standard, mortise and tenon, dowel, dovetail, and cross halved. Nailed or glued butt joints will not be permitted. Screws, nails, etc. will be of standard iron or wire unless stated otherwise on drawing. Where mortise and tenon joints are used, tenons should fit the mortise exactly. Where screws show on a finished surface, these will be sunk, and the hole plugged with a wood plug of the same wood and grain of the finished surfaces, unless otherwise. Nails on finished surface will be neatly punched and the hole filled with wood filler to match the colour.

UP HOLSTERY : This will be of first class standard workmanship with webbing, no sag springs, coiled springs, padding and filling as specified on drawing. Covering fabrics will be sewn, tufted, and corded as shown on the drawing.

CUSHION VENTS : Brass or Aluminium "cushion vents" should be installed at the back or under side of seat cushions (especially those covered in leather, vinyl plastic or very tightly woven fabric) to allow air to escape easily and to prevent torn seams.

MATERIALS : Finished timber shall be of the type specified, furnishing fabrics, colour, pattern, substance to be as specified, no variation of this will be permitted unless with prior approval of the Designer & owner.

FINISH: This will be as specified on the drawing and colour scheme chart where timber is finished in natural colour, care must be taken to "match" each separate piece of colour, before assembly. Where timber is stained, the stain or colour on each member must match.

Only first class workmanship will be accepted. All legs to furniture will be fitted with nylon glides or castors as specified on the drawing. Full size drawings or prototype samples are to be submitted to the Designer for prior approval if requested.

FABRIC AND WALL COVERINGS:

The fabrics or wall coverings shall be supplied by the owner in conformity with the details shown on colour scheme charts. The wall paper or fabric shall be applied with an approved method or adhesive after necessary preparation of surfaces and in accordance with the manufacturer's recommendations and to the approval of the Architect/Consultant. The lengths of wall covering are to be hung with an overlap of at least 1" and cut flush as recommended by the manufacturer. A sample of the colour and style shall be produced for the Architect/Consultant's / owner approval.

ELECTRICAL INSTALLATION :

The whole of the electrical installation shall be carried out by a major registered licensed Electrical Contractor's firm.

The electrical installation shall include for the supply of the whole of the materials and the work of fixing, necessary for the complete installation. The work shall be carried out in strict accordance with the latest edition of the Regulations for the Electrical Equipment of Buildings issued by the Institute of Electrical Engineers I.E. rules and to the satisfaction of and in accordance with rules, regulations, and requirements of the supply company and the Fire department all to the entire satisfaction of the Architect/Consultant & owner.

The positions of all points and equipment shown on the drawings shall be assumed to be correct for the purposes of tendering, but it is the main contractor's responsibility to check the exact positions on the site before commencing the works.

NOTE: This specification is of the general type only and must be used in conjunction with the drawing of the particular item being made. Anything shown on the drawing and not in the specification must be compiled with, and vice versa.

GENERAL SPECIFICATION FOR CASE OF "CABINET" FURNITURE.

TIMBER: All timbers used are to be of top quality free from knots, shakes, wormholes, and with a moisture content of not more than 12% depending on the climatic conditions prevailing at the site.

JOINTS: All joints will be standard, mortise and tenon, dovetail, half lap, cross halved, mitred, tongued and grooved and rebated. Nailed and glued butt joints will not be accepted.

FASTENINGS: Screws, nails, bolts, will generally be iron or wire, except in the following examples. "Outdoor Furniture" fastenings will be of brass or other non-corrosive metal. In hardware, they will match the finish of the hardware item.

Nails, in a finished surface shall be neatly punched and the hold filled with wood filler matching the finish. Screws in a finished surface will be round head, raised or sunk beneath the surface, and the hole plugged with a wood plug with matching colour and grain of the wood surface, unless specially detailed.

PLYWOOD: Used mainly for the body-work of this furniture, shall be Green ply, century or multi ply suitable for veneering, painting or bonding plastic laminate. It shall be a resin bonded, specification, "marine", brand or equivalent. Exposed edges will be finished with a piece of solid wood, tongued, grooved and glued, or as detailed.

HARDWARE: Hinges, locks, latches, door tracks, etc. shall be as specified, and as far as is possible of specified manufacture. In any variation of this the quality of the substitute shall be equal to or better than the originally specified, and the sample should be submitted to the designer\owner for prior approval.

METAL : Where metal lags, frames, sheets, etc. are used, these shall be welded, brazed, bolted or riveted as required and on finished surfaces welding, brazing and rewetting shall be neatly smoothened so that no evidence of this is apparent on the final finish of the metal which will be as specified on drawing. On all legs wood or metal, nylon glides or heavy duty castors as indicated, are to be installed.

FINISH: This will be as indicated on the drawing and colour scheme charts, and materials (timber, plastic, laminates, lacquer, paints, etc.) must be as specified. No variation will be accepted unless with the prior approval of the Designer & owner. "Backs" of cabinets, etc., where wall hung shall be treated with an approved brand or wood preservative. Full size drawings or prototypes are to be submitted for approval if requested.

NOTE: This specification is of a general type only and must be used in conjunction with the drawings of the particular item being made. Anything showing on the drawing, but not in the specification must be complied with and vice versa.

SPECIAL NOTES

1. All laminate shall be 1.0mm th. on vertical surfaces & 1.0 mm th. on horizontal surfaces unless otherwise specified.
2. All hardware like multipurpose locks, hinges, handles, magnetic catches etc. shall be used only after written approval of samples.
3. Rates of all furniture items including three coats of synthetic enamel paint/sprit polish etc. as specified in the BOQ.
4. Each cabinet shall be powder coated handle, Godrej, lock/spring loaded hinges brass ball catches and shutter to be fixed using ½"x3/4" continuous hinges of approval quality unless otherwise specified.
5. Where ever not specified all exposed surfaces of partition and other wood work shall be finished with three coats of synthetic enamel paint/polish in natural shade as applicable. Nothing extra shall be paid for the same.

SPECIFICATIONS/BRAND NAMES of materials and finished approved by the Architect/Employer are listed below: However equivalent materials and finished of any other specialized firms may be used , In case it is established that the brands specified below are not available in the market are subject to the approval of the alternative brand by the Architect

S. NO.	ITEM	DESCRIPTION
1.	REINFORCEMENT STEEL	Tata, Sail , Jindal , Rathi
2.	AAC BLOCK	Bilt
3.	CEMENT	ordinary Portland cement 43 grade manufactured by Acc/Binani/Jaypee/ Ultra Tech/Ambuja Pozzolona cement shall not be used.
4.	POLYSULPHIDE SEALANT	Pidiseal by M/S Pidlite INDUSTRIES Ltd., Fosroc, Shalimar
5.	WATER PROOFING COMPOUND	Cico , Fosroc, Dr Fixit,
6.	SHUTTERING PLYWOOD	Indian Green Century.
7.	TOUGHENED GLASS	Trutuf or equivalent
8.	GLASS/LACQUERED GLASS	Modi Float. St. Gobain., Ashai
9.	WIRED GLASS	6mm thk. Wired glass manufactured by Hindustan Safety Glass Works Ltd. Calcutta, Or Vallabh Glass Works Gujrat./HARYANA SHEET GLASS.
10.	WHITE CEMENT	J.K. White Cement , Birla White Cement
11.	DISTEMPER, PAINT	Enamel, Plastic Emulsion manufactured by Paint and Primer Berger Paints, Asian Paints, Nerolac Shalimar Paint, ICI.
12.	PLASTER OF PARIS	Shriram, Sakarni, Birla,J.K
13.	PUTTY	Asian Paints., JK, Birla
14.	EXPANSION BOLTS FOR FIXING	Dash Fasteners of appropriate size by HILTI OR M/S. Dev Ashish Trades
15.	WINDOW HARDWARE	Hettich, Kaff, Ebco or Approved by Architect.
16.	CERAMIC TILES	Johnson, Somany, Kajaria ,
17.	VINYL FLOOR	Armstrong/ Rikvin , Wonder Floor.
18.	VITRIFIED TILES	Johnson, Somany, Kajaria
19.	GLAZED TILES	Johnson,Somany,Kajaria ,
20.	SPECIAL CERAMIC TILES	Saraswati Ceramics, other approved pottery in Delhi/Khurja or approved by architect
21.	HINGES AND DRAWER SLIDE	Kaff, Hettich, ozone (telescopic channel for drawer and key board and slide -on hinges for wooden cabinet shutters)
22.	LOCKS, HANDLES	Godrej, Dorset, Dorma, Aspa, or Approved by Architect

23.	DOOR CLOSERS, FLOOR SPRING AND HARDWARE FITTING	Dorma, Dorset, Ozone,
24.	ALUM, TOWER BOLTS, HARDWARE FITTING	Ebco, Everite, Sigma or Eq. Approved By Architect.
25.	MS SCREW	Nettle Fold, Crab
26.	M.S. PIPES (RAILING)	Jindal or Prakash.
27.	FLUSH DOORS	Duro, Century, Greenply, Archid
28.	VENEER	Duro, Century, Green
29.	LAMINATE DECORATIVE LAMINATE	Archid, Greenlam, Century
30.	PLYWOOD, BLOCK BOARD ,	Duro, Century, Green, Archid.
31.	STRUCTURAL STEEL	Sail, Tisco, Jindal.
32.	TEXTURE TILES FOR FALSE CEILINGS / FIBER CEMENT BOARD	Armstrong, Everest Industries Ltd.
33.	WOOD	Teak Wood First Class of CP or Burma
34.	M.S. ALUMINIUM LINEAL CEILING	Interarch, Vista.
35.	VENETIAL BLINDS	Trac, Vista, Mac.
36.	GYPBOARD CEILING	Gypsum India, Lafaarz., St. Gobain
37.	HEAT REFLECTIVE FILM	Garware, 3M,
38.	ADHESIVE	Fevicol SH, Century, Vemicol, Jivanjor
39.	TILE ADHESIVE	Unitile, Roff Chemicals, Kajaria.
40.	MIRROR	Atul, Jolly, Modi Guard
41.	G.I. PIPE AND FITTINGS	Tata, Jindal, Appolo, Unik,
42.	CENTRIFUGALLY CAST (SPUN) IRON SOIL WASTE & VENT PIPE & FITTINGS	Jayaswal Neco (Nagpur), C.I.A.L. (Durgapur)
43.	WOOD PRESERVATIVE	Wood Guard or Approved EQ/ICI.
44.	ALUMINIUM COMPOSITE SHEET	Alucobond, Alstone, Eurobond.
45.	ALUMINIUM SECTIONS	Jindal, Indal, Hindalco.
46.	C.I./R.W.P.	Neco, RIF, IIS OR EQ.
47.	C.P BRASS FITTING	Jaguar, Parko, Parryware
48.	SANITARY WARE	Hindware, Parryware, Jaguar, Hindustan Sanitary Ware,
49.	STAINLESS STEEL SINK	Diamond, Nirali, Jayna, Nilkanth,
50.	SANITARY FITTINGS VISIBLE	Jaguar, Grohe OR Equivalent ISI Make
51.	PVC, U.P.V.C PIPE	Supreme, Prince, Astral, Finolex or Equivalent ISI Make

52.	CI BRASS LA PIPES	Electro Steel, Kesoram or approved
53.	STONE WARE PIPES	Bhaskar, Anand, ISI marked of approved quality
54.	R.C.C PIPES	ISI marked of approved quality
55.	LOFT TANK	Syntax, Uniplas, Ploycom
56.	CI PIPES & WORK	Neco, RIF,SIF,BIS OR Equivalent ISI Make
57.	Anti termite	Thiddan (35 E.C.), Dursban – 20 TC, Trishul
58.	GATE VALVES	Leader, Zoloto
59.	PLASTIC W.C SEAT COVER	Commander, Diplomant
60.	GUN METAL VALVE(FULL WAY CHECK & GLEBE Valves)	Leasde,Sant, Zoloto
61.	C.I VALVE (FULL WAY CHECK & GLEBE VALVES	Kirloskar, Leader, Zoloto
62.	CPVC	Prince, Astral, Finolex , Supreme,
63.	READY MIX CONCRETE	Acc, Ultratech, Rmc India ,Lafarge
64.	ACRYLIC SOILD SURFACE THERMOFORMED	Dupont,LG, Avonite
65.	CHAIRS/SOFA	Godrej,Methodex,Featherlite

Signature of the Tenderer/s With the Seal of the Company

Date:

Place:

General SPECIFICATIONS FOR ELECTRICAL WORK

1 GENERAL

1.1 The entire electrification work shall be carried out by licensed Electrical Contractors in accordance with these specifications without any extra cost.

1.2 For site supervision the contractor must depute a qualified electrical engineer. The contractor shall employ only experienced and licensed wiremen to do the electrification work.

1.3 The work shall conform to relevant Indian Standard Specifications the I.E. Acts and Rules and the requirements of Local Electrical Authority.

1.4 When the installation is complete, the same shall be tested with the 500 /1000 volts Megger in the presence of the Architect / Consultant and the results shall be entered into the test certificate as per the format available with Local Electrical Authority.

1.5 Contractor shall submit to the client 3 sets of test certificates for the installation.

1.6 The contractor shall carry out all civil works connected with the electrical job. The contractor shall repair and make good the damages caused by him to the civil structure while executing the electrification work. The foundations for the panel board and for the poles, grouting of frames in the wall, erection of D.B./switchboards in the wall/chasing the walls/floor for embedding the conduits and boxes etc. are all to be carried out by the contractor including making good the damaged civil work.

1.7 The Contractor has to submit shop drawings for the Electrical Distribution Boards and the conduit layout to the Architect/Consultants for their approval before starting the work. Also one set of approved sample of the materials have to be kept at site.

1.8 The Architect/Consultant will issue the drawings to the Contractor for carrying out the work .

1.9 The Electrical Contractor, his wiremen and supervisors shall be qualified and have a valid license while quoting as well as during the course of work.

1.10 Statutory Approval

The electrical contractor shall obtain the approval for the electrical works carried out by the contractor ie. Electrical panels, sub-station works, earthing and internal electrification as required.

2.0 SCOPE OF WORK

The scope of work shall be generally as given in the schedule of items and as mentioned below:-

A. Supply, Installation, Testing and Commissioning of the following:

i. All Electrical Panel & Distribution Boards

ii. All Mains and Sub-Main wiring/cabling between various Distribution Boards.

iii. All Circuit and sub-circuit wiring for lights, light and power outlets, Air Conditioning and Exhaust fans in False Ceiling/wooden partition walls/floor/columns/brick or concrete walls/MS Channels.

iv. Earthing System for the entire Electrical Installation.

- v. Conduiting and wiring for Computer & Telephone System in False Ceiling/wooden partition walls/floor/columns/brick or concrete walls/M.S. Channel.
- vi. All types of lighting fixtures, Ceiling fans and Exhaust fans.
- vii. Providing floor channels and Junction Boxes for drawing data cabling and power wiring for work stations.
- viii. Installation of sub-station equipment ix. Substation Equipment Layout etc.

X Getting the approval from the electrical inspector for the works carried by the contractor

- B) Testing and commissioning of the entire Electrical Installation including Telephone system.

The contractor shall carry out and complete the work under this contract in every respect in conforming with the current rules and regulations of the local Electricity Authority, stipulations of the Indian Standard Institution, and with the directions of and to the satisfaction of the owner. The contractor shall furnish all labour, material, appliances, equipment, transportation and incidentals necessary for providing, installing, testing and commissioning of the whole electrical installation as specified herein and shown on drawings.

This also includes any materials, appliances, equipment and incidental work not specifically mentioned herein or noted on the drawings/documents as being furnished or installed but which are customary to make the installation in working order. The work shall include all incidentals and jobs connected with Electrical installation such as earthing work and cutting chases/holes and making good the same and grouting etc. NOTES

1. All items of work under the contract shall be executed strictly in accordance with the description of the item in the Schedule of Quantities, relevant drawings and Specifications read in conjunction with the appropriate Indian Standard Specifications, Indian Electricity rules as amended up to date and Conditions of Contract.
2. The rate for each item of work included in the Schedule of Quantities shall unless expressly stated otherwise, include cost of:
 - a. All materials, fixing materials, accessories, operations, appliances, tools, plant, equipment, transport, labour and incidentals required in preparation for, in the full and entire execution and completion of the work called for in the item and as per specifications and drawings completely.
 - b. Wastage on materials and labour.
 - c. Loading, transporting, unloading, handling/double handling, hoisting to all levels, setting, fitting and fixing in position, protecting, disposal of debris and all other labour necessary in and for the full and entire execution and to fully complete the job in accordance with contract documents, good practice and recognized principles.
 - d. Liabilities, obligations and risks arising out of conditions of contract.
 - e. In the event of conflict between schedule of quantities and other documents including the specifications, the most stringent shall apply and the interpretation of the Chief Architect shall be final and binding.
3. The Contractor shall be paid for the actual quantity of work executed by him in accordance with the drawings at the contract rates.
4. All errors in totaling the amount column and in carrying forward totals shall be corrected.

5. Unless otherwise stated all measurements shall be taken in accordance with Indian Standard Electrical Installation in building Method of Measurement IS 5908 latest revisions/ additions.
6. Necessary liaison shall be done by the Contractor with the local authority for obtaining temporary and permanent electrical connection and installation of all meters etc.. The contractor shall submit and prepare all test reports and other documents to the local authorities in consultation and on behalf of the Client..
7. On the completion of the work the Contractor shall submit to the Owner layout Drawings indicating the complete Electrical Installation as installed. These Drawings shall in particular give the following information.
- i. Run and size of conduit, location of inspection/outlet boxes.
 - ii. Number and size of wires in each conduit.
 - iii. Location of switches, outlets, DBs, Telephone, Call Bell and Music outlets etc.
 - iv. Layout and particulars of mains and sub-mains and cable route etc.
 - v. Schematic diagrams for the complete Electrical System.
 - vi. Complete Earthing System with size of Earthing conductors.
 - vii. Layout and particulars of the Telephone and Computer system.
 - viii. Substation Equipment Layout.

TECHNICAL SPECIFICATION

1 SPECIFICATIONS FOR INTERNAL WIRING

1.1. SYSTEM OF WIRING:

The system of wiring shall consist of single/multi core PVC insulated FRLS copper conductor wires in non-metallic PVC conduits/ metallic M.S. conduits as called for in the BOQ. All conduits shall be on the surface,(supported from the Ceiling), in the False Ceiling and concealed in other areas where RCC slab is provided unless otherwise called for in the drawings. All down conduits shall be concealed unless otherwise called for.

1.2. GENERAL

Prior to laying of conduits, the Contractor shall get approved the conduit layout indicating the route of conduit, number and size of conduits, location of junction/ inspection/pull boxes, size and location of switch boxes, point outlet boxes and other details. These conduit layouts shall be got approved by the Consultant and then only conduit layout should be started. Any modification or suggestions shall be approved by the Consultant before the laying of conduits.

1.3. MATERIALS:

M.S. conduits shall conform to Indian Standards IS : 1653 - 1964 -Specification for Rigid Steel conduits for Electrical wiring with the latest amendments.

M.S. CONDUITS:

M.S. conduits shall be solid drawn or lap welded conduits. Stove enameled inside and outside with minimum wall thickness of 1.6 mm for conduits upto 25 mm diameter and 2.0 mm wall thickness for conduits 32 mm diameter and above.

PVC conduits to be used for concealed work for all systems except Fire Alarm & Computer system where M.S. conduits shall be used. PVC conduits shall conform to Indian Standards IS : 9537(Part-3)-1983 -Specification for conduits for Electrical Installation (Part-I) General Requirements.

PVC CONDUITS:

PVC conduits shall be rigid, unplasticised, heavy gauge having 1.8 mm wall thickness upto 20 mm diameter and 2.0 mm wall thickness for all sizes above 20 mm diameter. Minimum size of conduit shall be 20 mm dia. Minimum size of conduit for Power point wiring shall be 25 mm dia. The conduits shall be delivered to the site of construction in original bundles and each length of conduit shall bear the label of the manufacturer. The number of insulated copper wires that may be drawn into the conduits of various sizes are given below and the fill shall not exceed 40% the maximum permissible number of 650/1100 volts grade single/multi core PVC insulated copper conductor wires of different sizes, that may be drawn into rigid metallic or non-metallic conduits.

SIZE OF WIRE		SIZE OF CONDUITS (MM)									
Nominal cross- of wires in sq. mm		20 25 32 40 50 nominal dia in mm Sectional area (Maximum number of wires)									
		1.5	5	6	18	-	-	-	-	-	-
2.5	3	4	10	-	-	-	-	-	-	-	-
			4.0		2	4	5	10	-	-	-
			6.0		-	6	6	8	-	-	-
			10.0		-	-	3	4	-	-	-
			16.0		-	-	-	3	5	-	-
			25.0		-	-	-	2	3	-	-

1.4 PVC CONDUIT ACCESSORIES & CONNECTIONS:

The accessories used for PVC conduits shall conform to Indian Standards IS : 3419-1988 (Specification for fittings for non-metallic conduits). PVC conduits shall be joined by means of screwed or plain couplers. Where there are long runs of straight conduits, inspection boxes shall be provided at intervals as approved by the consultant. The threads of the pipe and sockets shall be free from grease and oil. It shall be thoroughly cleaned before making the screwed/plain joints. Proper jointing materials as recommended by manufacturers shall be used for jointing of PVC pipes. Use PVC couplers and connectors for PVC pipe connections and terminations in boxes. All the joints shall be fully water tight. Junction boxes and running joints shall be provided at suitable places to allow for subsequent extensions if any, without undue dismantling of conduit system. As far as possible diagonal run of conduits shall be avoided. Junction between conduit and adapter boxes, back outlet boxes, switch boxes and the like must be provided with entry spouts and smooth PVC bushes. Joints between conduit and iron clad Distribution Boards or control gear shall be effected by means of conduit couplers into each of which will be coupled smooth PVC bush from the inside of box or case. Conduit system shall be erect and straight as far as possible. All jointing methods shall be subject to the approval of the consultant.

BENDS IN CONDUITS:

Where necessary bends or diversions may be achieved by means of bends and or circular inspection boxes with adequate and suitable inlet and outlet screwed joints. In case of recessed system each junction box shall be provided with a cover properly secured and flush with the finished wall surface, so that the conductors inside the conduits are easily accessible. No bend shall have a radius of less than 2.5 times the outside diameter of the conduit. Conduits shall be cold bend by means of a Bending spring available with the manufacturers. In case it is not available then Heat may be used to soften the PVC conduits, by filling sand in the pipe. Use of PVC conduit in places where ambient temperature is 60 degrees or above is prohibited. PVC Solvent shall be used for joints between conduits, conduits & Junction box etc. PVC checknuts and bushes shall be used for joining conduit with outlet boxes. PVC Closures shall be provided on unused mouths of Junction boxes.

Separate conduits shall be provided for the following system.

- i) Lights, Ceiling fans, exhaust fans & 5A Light sockets.
- ii) Power sockets & A/C outlets
- iii) Telephone System
- iv) Television, Computer & Music system
- v) Emergency System.
- vi) Public Address System
- vii) Fire Alarm System.

Separate switchboards/outlets shall be provided for the following system.

- i) Lights, Ceiling fans, exhaust fans & 5A Light sockets.
- ii) Power sockets & A/C outlets
- iii) Telephone System
- iv) Television, Computer & Music system.
- v) Emergency System.
- vi) Public Address System.
- vii) Fire Alarm system .

1.5 FIXING CONDUITS:

Conduits and junction boxes shall be kept in position and proper holdfasts shall be provided. Conduits shall be so arranged as to facilitate easy drawing of wires through them. Adequate junction boxes of approved shape and size shall be provided. All conduits shall be installed so as to avoid steam and hot water pipes. After the conduits, junction boxes, outlet boxes & switch boxes are installed in position their outlets shall be properly plugged so that water, mortar, insects or any other foreign matter does not enter into the conduit system. Exposed conduits shall be fixed by means of spacer bar/ saddles at intervals of not more than 600 mm in normal run and 500 mm from both sides of fitting or accessories. The saddles shall be of 3 mm x 19 mm mild steel flat, properly treated with primer and painted, securely fixed to support by means of nuts and bolts/rawl bolts and MS screws as required.

Conduits shall be laid in a neat and organized manner as directed and approved by the Consultant. Conduit runs shall be planned so as not to conflict with any other service pipe lines/ducts.

Where exposed conduits are suspended from the structure they shall be clamped firmly and rigidly to hangers of design to be approved by the Architect. Where hangers are to be anchored to reinforced concrete appropriate inserts and necessary devices for their fixing shall be provided at the time of fixing. Making holes or openings in the concrete will generally not be allowed. In case it is unavoidable prior permission of the Consultant shall be obtained. Conduits shall be fixed in the chase by means of staples not more than 600 mm apart and the chase filled with cement mortar 1 : 4 . Cutting of horizontal chases in walls is prohibited.

1.6. PROTECTION

To minimize condensation or sweating inside the conduit pipes all outlets of conduit system shall be adequately ventilated as directed and approved by the Consultant. All screwed and socketed connections shall be adequately made fully water tight by the use of proper jointing materials i.e. Tropolin for PVC conduits & white lead for metal conduits.

1.7. SWITCH-OUTLET BOXES AND JUNCTION BOXES

All boxes shall conform to Indian Standards IS: 5133(Part-1)-1969 (Specification for boxes for enclosure of Electrical accessories) with the latest amendments. All outlet boxes for switches, sockets & other receptacles shall be fabricated from 1.6mm thick mild steel sheets duly painted with rust proof paint (zinc passivated) as called for, having smooth external & internal surfaces to true finish. Junction boxes and outlet boxes in contact with earth or installed in areas exposed to the weather shall be of 2mm thick mild steel and painted. Where called for, outlet boxes for receiving switches, telephone outlets T.V. outlets, power plugs etc. shall be fabricated to prove shape and size to suit the cover plates of approved

make for different utilities. The cover plates shall be of best quality Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material which shall be both mechanically strong and fire retardant, as approved by the Consultant. Proper supports shall be provided in the outlet boxes to fix the cover plates of switches as required. Separate screwed earth terminal shall be provided inside the box for earthing purpose. All boxes shall have adequate number of knockout holes of required diameter for conduit entry. Where called for outlet boxes for receiving switches and fan regulators in one box, shall be fabricated to approved shape and size to accommodate fan regulators and switches to be fixed on grid plates. These boxes shall be covered with Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material which shall be both mechanically strong and fire retardant. All junction boxes, pull boxes and outlet boxes shall be provided with sheet cover Urea Formaldehyde Thermosetting insulating material. The box cover shall be secured to the box with adequate number of round head brass screws of approved make. Outlets exposed to the weather shall be fully weather tight, complete with rubber gasketed covers, glass where used shall be fully heat resistant for the duty. The outlet boxes shall be painted with two coats of bitumastic paint before they

are fixed in position. All Outlet boxes fixed in concrete/recessed in wall shall be of a minimum depth of 55mm.

1.8. INSPECTION BOXES

Rust proof (Zinc passivated) inspection boxes of 1.6mm thick mild steel sheet and of required size, having smooth external and internal finish shall be provided to permit periodical inspection and to facilitate removal and replacement of wires when required. Inspection boxes shall be mounted flush with ceiling/walls finished surface and shall be provided with screwed covers of Urea Formaldehyde Thermosetting insulating material sheet cover secured to the box with brass screws. Adequate holes shall be provided for ventilation in the inspection box covers.

1.9. TELEPHONE SYSTEM

Conduits, junction boxes, draw boxes, outlet boxes and covers to boxes for telephone system shall be as described under relevant clauses elsewhere in these specifications. Conduits for telephone system shall be at least 150 mm away from the electrical conduits. The conduits for telephone wiring shall be of specified size and shall be terminated at outlets as indicated on the drawings. Telephone system conduits shall have 2 mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy drawing of the Telephone wires from each unit to the Telephone Tag Box and from the Tag Box to the open ground.

1.10. T.V. & COMPUTER SYSTEM

Conduits junction boxes, draw boxes, outlet boxes and covers to boxes for T.V. & Computer system shall be as described under relevant clauses elsewhere in these specifications. Conduits for T.V. & Computer system shall be at least 150mm away from the electrical conduits. The conduits for T.V. & Computer wiring shall be of specified size and shall be terminated at outlets as indicated on the drawings. T.V. & Computer system conduits shall have 2mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy drawing of the Television & Computer wires from each unit to the Junction Box and from the Junction Box to the open ground.

On the completion of the work the Contractor shall submit to the Owner layout Drawings indicating the complete Electrical Installation as installed. These Drawings shall in particular give the following information.

- i. Run and size of conduit, location of inspection/outlet boxes etc.
- ii. Number and size of wires in each conduit.
- iii. Location of switches, outlets, all types of DBs, Telephone, Television ,Computer, Call Bell & Public Address points, Light sockets, Power sockets, Fire Alarm points, etc. .
- iv. Layout and particulars of mains and sub-mains and cable route etc. v. Schematic diagrams for the complete Electrical System.
- vi. Layout of Complete Earthing System with size of Earthing conductors.
- vii. Layout and particulars of the Telephone, Public Address, Television, Computer.

1.11. CONDUCTORS

PVC insulated multistrand copper conductor wires of 1100 Volts grade shall be used for three phase distribution and PVC insulated multistrand copper conductor wires of 1100 V grade shall also be used for Single phase distribution and shall conform to IS : 694 -1964 with the latest amendments and shall be ISI marked.

1.12. BUNCHING OF WIRES

Wires carrying current shall be so bunched in the conduit that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.

1.13. DRAWING OF CONDUCTORS

The drawing and jointing of copper conductor wires shall be executed with due regard to the following precautions, while drawing insulated wires into the conduits. Care shall be taken to avoid scratches and kinks which cause breakage of conductors. There shall be no sharp bends.

Insulation shall be shaved off for a length of 15mm at the end of wire like sharpening of a pencil and it shall not be removed by cutting it square or ringing.

PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals. All strands of wires shall be soldered at the end before connection. The connecting brass-screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Conductors having nominal cross sectional area exceeding 6 Sq mm shall always be provided with cable sockets.

At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections.

Only certified wiremen and cable jointers shall be employed to do jointing work. All wire shall bear the manufacturer's label and the voltage grade at one meter intervals for the full length of coil, and shall be brought to site in new and original packages.

The sub-circuit wiring for points shall be carried out in looping system and no joint shall be allowed in the length of the conductors. No wire shall be drawn into any conduit, until all work of any nature, that may cause injury to wire is completed. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Before the wires are drawn into the conduits the conduits shall be thoroughly cleared of moisture, dust, and dirt or any other obstruction by drawing dry cloth through the conduits. The minimum size of PVC insulated stranded copper conductor wire for all sub circuit wiring for lights, exhaust fans, ceiling fan and 5A Light sockets points shall be 1.5 Sq mm. In case of power circuit not more than two 15 Amp power outlets shall be grouped in one circuit, wiring for the first power outlet shall be carried out with PVC insulated 6.0 sq mm copper conductor wires. Wiring for the second power outlet shall be carried with PVC insulated 4.0 sq mm copper conductor wires. All power outlets shall be connected with 4.0 sq mm PVC insulated copper conductor wires to the earth terminal of outlet. Separate circuit shall run with PVC insulated 4.0 sq mm copper conductor wires for water heaters, kitchen equipment, window Air conditioners and similar outlets at locations as shown on drawings.

The minimum size of wire from final distribution board to first tapping point in the circuit shall be 2.5 Sq mm. PVC insulated stranded copper conductor wires. Circuit shall not have more than a total of 8 points of fans, 5A Light sockets and Light points and its load shall not exceed 800 watts. Not more than two power circuits shall be drawn through the same conduit. Separate earth wire shall run for each circuit. In case two circuits of the same phase are running in the same conduit then a common earth wire is permissible. The size of earth wire for all the light points, ceiling fans, exhaust fans , light sockets, outlet boxes etc. shall be 1.5 sq mm PVC insulated copper conductor wires.

1.14. JOINTS

All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made inside conduits and junction boxes. Conductors shall be continuous from outlet to outlet. Joints where unavoidable, due to any specified reasons, prior permission in writing shall be obtained from the Consultant before making such connections.

1.15. MAINS AND SUB-MAINS

Mains and sub-mains wires where called for shall be of the rated capacity and approved make. Every main and sub-main shall be drawn into an independent adequate size conduit. Adequate size draw boxes shall be provided at convenient locations to facilitate easy drawing of the mains and sub-mains. An independent earth wire of proper rating shall be provided. The earth wires shall run along the entire length of the mains and sub-mains. The earth wires shall be fixed to conduits by means of suitable copper clips at not more than 1000mm distance. Where mains and sub-main cables are connected to switch gears, sufficient extra length of sub-main and main cable shall be provided to facilitate easy connections and maintenance.

1.16. LOAD BALANCING

Balancing of circuits in three phase installation shall be planned before the commencement of wiring, shall be got approved by the Consultant and shall be strictly adhered to.

1.17. COLOUR CODE OF CONDUCTORS

Colour code shall be maintained for the entire wiring installation; red, yellow, blue for three phases and "off" circuit black for neutral and green for earth (or bare earth wire)

Telephone Multicore cables shall be of approved make and shall conform to following specifications.

i) Type of conductor Electrolytic Annealed Tinned Cu conductor. (ATC) ii) Diameter of Conductor ... 0.61 mm dia uniform (minimum size) iii) Weight of conductor ... 2.52 Kg/Km minimum. iv) Resistance of conductor at 20 degree... 60 Ohms/Km, v) Radial Thickness of PVC insulation...0.3mm + 0.05mm uniform

vi) Radious Thickness of PVC sheathing ... 1.2mm uniform + 0.2mm

vii) Overall diameter of insulated conductor.. 1.2mm uniform

viii) High voltage Test. Able to withstand upto 500 volts D.C. up to 12 hours immersion in water.

1.18. MOUNTING HEIGHT DETAILS

1.18.1 The bottom of the light/fan switch board shall be at 1.0 meter above the finished floor level unless otherwise specified.

1.18.2 All plugs and socket outlets shall be of 5/6 pin type and the appropriate pin of socket shall be connected to the earthing system.

1.18.3 In case of light and fan circuit only 5 pin 5A socket outlets shall be used. 6 pin 15A socket outlets shall be provided only on power circuits. The switch controlling the socket outlet shall be adjacent to it. 6 pin 15 A socket outlets shall be located at the levels as indicated below unless otherwise specified.

a In Kitchen at 300 mm above kitchen platform or FFL as per the location shown on the drawings.

b In the bathroom at 1800 mm above FFL but Mirror lights shall be above Mirror of wash basin.

c In all other rooms at 150 mm above FFL unless otherwise specified.

1.18.4 All Bracket light fittings ,unless otherwise specified shall be at a height of 2.1 meters above the floor level unless otherwise specified for some locations.

1.18.5 Unless otherwise specified, the ceiling fans shall be hung at 2.75 meters above the finished floor level.

1.18.6 Lamp holders in bath rooms are to be shrouded with insulating materials and fitted with protective shield.

1.18.7 All live conductors are to be insulated and safe guarded to avoid danger.

1.19 M.S.CONDUIT ACCESSORIES & CONNECTIONS:

The accessories used for M.S. conduits shall conform to Indian Standards IS : 3837-1966(Specification for fittings for Rigid steel conduits with the latest amendments. M.S. conduits shall be joined by means of screwed or plain couplers. Where there are long runs of straight conduits, inspection boxes shall be provided at intervals as approved by the Consultant. The threads of the pipe and sockets shall be free from grease and oil. It shall be thoroughly cleaned before making the screwed/plain joints.

Proper jointing and Cleaning materials as recommended by manufacturers shall be used for jointing and cleaning of M.S. pipes. Use M.S. couplers and connectors for M.S.pipe connections and terminations in boxes. All the joints shall be fully water tight. Junction boxes and running joints shall be provided at suitable places to allow for subsequent extensions if any, without undue dismantling of conduit system. As far as possible diagonal run of conduits shall be avoided. Junction between conduit and adapter boxes, back outlet boxes, switch boxes and the like must be provided with entry spouts and smooth M.S. bushes and M.S. Checknuts. Joints between conduit and iron clad Distribution Boards or control gear shall be effected by means of conduit couplers into each of which will be coupled smooth M.S. bush from the inside of box or case. Conduit system shall be erect and straight as far as possible. All jointing methods shall be subject to the approval of the Consultant.

M.S. CONDUIT CONNECTIONS:

Conduit connections for MS conduits shall be screwed metal to metal and be painted with one coat of self etching zinc chromate primer and two coats of enamel paint. The threads and sockets shall be free from grease and oil. Connections between screwed conduit and sheet metal boxes shall be by means of a brass hexagon smooth bore bush, fixed inside the box. Checknuts to be provided on inside and outside of box and connected through a coupler to the conduit or as directed by the Consultant. The joints in the conduits shall be free of burrs to avoid damage to insulation of conductors while pulling them through the conduits. Connections between PVC and MS conduits shall be through a junction box. Direct connection between PVC and MS conduits is not allowed.

FAN BOX DETAILS

The Fan Box shall be 100 mm x 100 mm x 75 mm deep, M.S. box made of 2mm thick M.S. sheet, having 12 mm dia M.S. rod, bend at centre to support the fan, top screwed cover etc. as per the approval of the Architect/Consultants.

2 CABLES

2.1. GENERAL

MV Cables shall be supplied, laid tested and commissioned in accordance with drawing specifications, relevant Indian Standards specification, Indian Electricity Act and manufacturers instructions. The cable shall be delivered at site in original drums with manufacturers name clearly written on the drums.

2.2. MATERIAL

MV CABLES : MV Cables shall be PVC insulated aluminium conductor armoured and unarmoured cables conforming to IS: 1554 (part I&II)-1976 & IS : 694-1977 (PVC Insulated cables for working voltages upto and including 1100 volts (second revision) with latest amendments. MV cables shall be suitable for under ground use and laid in trenches, ducts, cable trays, under roads and paved areas. MV Cables shall be termite resistant and shall be of approved make.

2.3. JOINTS IN CABLES

The contractor shall take care to see that all the cables are apportioned to various locations in such a manner as to ensure no straight joints in the cable run. If the straight joint in cable is unavoidable due to any specified reasons, prior permission in writing shall be obtained from the Consultant before the use of such straight joints in cable.

2.4. JOINTING BOXES FOR CABLES

Cable jointing boxes shall be of appropriate size, suitable for PVC insulated cables of particular voltage ratings, and shall be manufactured by approved manufacturers.

2.5. JOINTING OF CABLES

All cable joints shall be made in suitable approved cable joint boxes. Jointing of cables in the joint boxes and the filling in of compound shall be done in accordance with the best practice in trade, in accordance with manufacturer's instructions and in an approved manner. All straight Joints shall be done in epoxy mould boxes with TROPOLIC/ M-Seal resin or approved equal. All terminal ends of conductors shall be heavily soldered upto at least 50mm length.

All cables shall be jointed colour to colour and tested for insulation resistance and continuity before jointing commences. The seals of cables must not be removed until preparations for jointing are completed. Joints shall be finished on the same day as commenced and sufficient protection from the weather shall be arranged.

2.6. FILLING OF EPOXY COMPOUND

Equal quantities of resin and hardner shall be taken and mixed thoroughly by hand until the mixture is free from white patches and has uniform colour. No water, oil or any other liquid shall be added to the mixture to make it soft as this will effect the properties of the compound. The mixture shall be used within 30-40 minutes of mixing. The surface on which epoxy compound is to be used shall be free from dust, rust, oil, grease and shall be dry. No disturbance or movement of joint shall be made till the epoxy compound has completely hardened. A smooth surface can be made by rubbing a damp cloth smoothly on the compound before it sets. The joints shall be painted after it has completely hardened.

2.7. CABLES TERMINATION

Cable termination shall be done in terminal cable box using cable glands and the cable ends sealed with sealing compound.

2.8. BONDING OF CABLES

Where a cable enters any piece of apparatus, it shall be connected to the casing by means of an approved type of armoured clamps and gland. The clamps must grip the armouring firmly to the gland or casing, so that in the event of ground movement no undue stress is passed on to the cable conductors. The glands shall be either to the lead sheath by means of 'Plumbing Joint' as on a cone of approved materials, capable of being compressed into lead sheath. The gland or cone shall be capable of affecting a good electrical bond between both the armouring and lead of the cable and the casing.

2.9. LAYING OF CABLES

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be

exercised in laying cable to avoid forming kinks. The drums shall be unrolled and cables run over wooden rollers in trenches at intervals not exceeding 2 meters. Cables shall be laid at depth of 750mm depth below ground level in the case of MV Cables. A cushion of sand, not less than 75mm shall be provided both above and below the cable, joint boxes and other accessories. HV and MV cables shall not be laid in the same trench and/or along side of water main. The cable shall be laid in excavated trench 80mm layer of sand shall be spread over the cable. The cable then shall be lifted and placed over the sand bed. The second layer of 80mm sand then be spread over the cable. The relative position of the cables laid in the same trench shall be preserved and the cables shall not cross each other as far as possible. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius of bend not less than 12 times the diameter of cable. Minimum 3 M long loop shall be provided at both sides of every straight joint and 5 Meters at each end of the cable. Distinguishing marks shall be made on the cable ends for identification. Insulation tapes of appropriate voltage and in red, yellow and blue colours shall be wrapped just below the sockets for phase identification. Aluminium Labels etched with the size of cable shall be provided around the two ends of each cable.

2.10. PROTECTION OF CABLES

The cable shall be protected by placing burnt bricks over the cables 600mm wide on the top layer of sand for the full length of underground cable. Where more than one cable is running in the same trench, the bricks shall cover all the cables and shall project a minimum of 80mm on either side of the cable.

Cable under road crossings and any surfaces subjected to heavy traffic, shall be protected by running them through Hume pipes of suitable size and Heavy grade quality.

Cables under paved areas (which form part of the building) shall be protected by running them through Stoneware/Hume pipes of 150 mm dia(minimum size) one meter below road level.

2.11. CABLES INSIDE BUILDINGS

Cables inside buildings shall be laid either in masonry trenches or carried on through trays or brackets. Where cables run in ducts inside the buildings the cables shall be adequately clamped to angle iron brackets, secured to the wall, as directed and approved by the Consultant. Where cables are suspended from ceilings they shall be carried over troughs or trays as directed and approved by the Architect. The supports shall be placed not more than 1.0 meter apart. All cables passing through walls below paved area, and concrete shall run through stone ware pipes or Hume pipes of adequate diameter recessed or exposed as directed. Cables running along walls shall be supported and clamped to saddles, or hanger rigidly anchored at close intervals. Clear space between parallel cables shall be equal to the diameter of the cable but not less than 50mm. Where called for cable trenches shall be filled with fine sand. The contractor shall ensure that hangers, brackets and other supporting arrangements for cables are placed in proper position at the time of building the walls, concreting slabs, etc. cutting holes or opening in concrete may be carried out only with prior permission of the Architect.

All excavations and back fill including timbering, shoring and pumping required for the installation of the cables shall be carried out as per the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layers not exceeding 150mm. Each layer shall be properly rammed and consolidated before laying the next layer. The Contractor shall restore all surfaces roadways, side-walks, curbs, walls or other works cut by excavation of their original condition, to the satisfaction of Consultant.

2.12. MARKERS AND WARNING PLATES

Approved CI cables markers shall be provided along the route of the cables at every 30 meter distance and at both ends of road crossing, indicating HV cables and MV cables as applicable. Special CI markers shall be provided at all buried cable joints indicating "Electrical Cable Joints. GI plates engraving the

size of cable and the place it serves shall be tied to the cable at regular intervals of 2 meters for easily identification of the cables.

2.13. TESTING OF CABLES

Prior to burying of the cables, following tests shall be carried out:

- a. Insulation test between phases and phase to earth for each length of cable before and after jointing.

On completion of cable laying work and jointing the following tests shall be conducted in the presence of the Consultants.

- a. Insulation Resistance test (Sectional and Overall)
- b. Continuity Resistance Test.
- c. Sheath continuity Test.
- d. Earth Test.
- e. Physical Dimensions Test.

All tests shall be carried out in accordance with relevant Indian Standard Codes of practice and Indian Electricity Rules. The contractor shall provide necessary instruments, equipment and labour for conducting the above test and shall bear all expenses in connection with such tests. All tests shall be carried out in the presence of the Architect / Consultant.

1.0 EARTHING

3.1 EARTHING

All the non-current metal parts of electrical installation shall be earthed properly. All metal conduits, trunking, cable sheaths, switchgear, outlet boxes, distribution boards, light fittings, fans and all other parts made of metal or conductive material shall be bonded together and connected by means of specified earthing system.

All earthing will be in conformity with the relevant provision of Rules 33 and 61 of the Indian Electricity Rules 1956 and Indian Standard Specifications IS:3043-1987 with latest amendments.

3.2. EARTHING CONDUCTORS

All earthing conductors shall be of high conductivity electrolytic copper of 99 % purity and shall be protected against mechanical injury or corrosion.

3.3. SIZING OF EARTHING CONDUCTORS

The cross sectional area of copper earthing conductor shall be same as the active conductor for sizes of active copper conductor upto 4.0 sqmm and shall be half the size for 16 sq mm active copper conductor and above. All fixtures, fans, outlet boxes and junction boxes shall be earthed with 1.5 sqmm PVC Insulated copper conductor wires. All power sockets and single phase A/C units shall be earthed with 4.0 PVC Insulated copper conductor wires. All Three phase Final Distribution Boards shall be earthed with 2 nos 4 mm dia bare copper conductor wires. The sizes of the earth continuity conductors should not be less than half of the largest current carrying conductors.

The Sub-Distribution Board shall be earthed to 2 nos 600mm x 600mm x 3mm copper plate earthing stations through 25mm x 3 mm copper strips.

3.4. CONNECTION OF EARTHING CONDUCTORS

Main earthing conductors shall be taken from the earth connections at the main switchboards to an earth electrode with which the connection is to be made. Sub main earthing conductors shall run from the main switchboard to the sub-distribution boards. Final distribution boards earthing conductors shall run from sub-distribution boards.

3.5. PROHIBITED CONNECTIONS

Neutral conductor, sprinkler pipes, or pipes conveying gas, water, or inflammable liquid, structural steel work, metallic enclosures or cables and conductors, metallic conduits and lightning protection system conductors shall not be used as a means of earthing an installation or even as a link in an earthing system. The electrical resistance of metallic enclosures for cables and conductors measured between earth connections at the main switchboard and any other point on the completed installation shall be low enough to permit the passage of current necessary to operate fuse or circuit breakers and shall not exceed 1 ohm.

3.6. PROTECTION FROM CORROSION

Connections between copper and galvanized equipment shall be made on vertical face and protected with paint and grease. Galvanized fixing clamps shall not be used for fixing earth conductors. Only copper fixing clamps shall be used for fixing earth conductors. When there is evidence that the soil is aggressive to copper, buried earthing conductors shall be protected by suitable serving and sheathing.

3.7. EARTHING STATION

Plate Electrode Earthing: Earthing electrode shall consist of a tinned copper plate not less than 300mm x 300mm x 3mm thick as called for in the Schedule. The plate electrode shall be buried as far as practicable below permanent moisture level but in any case not less than 4.2 meters below ground level. Wherever possible earth electrodes shall be located as near the water tap, water drain or a down take pipe as possible. Earth electrodes shall not be installed in proximity to a metal fence. It shall be kept clear of the buildings foundations and in no case shall it be nearer than 2 meters from the outer face of the wall. The earth plate shall be set vertically and surrounded with 150mm thick layer of charcoal, dust and salt mixture. 20mm GI pipe shall run from the top edge of the plate to the ground level. The top of the pipe shall be provided with a funnel and a mesh for watering the earth through a pipe. The funnel over the GI Pipe shall be housed in a masonry chamber, approximately 300mm x 300mm x 300mm deep. The masonry chamber shall be provided with a cast iron cover resting over a GI frame embedded in masonry. Refer Sketch for additional details.

Pipe Electrode Earthing: Earthing electrode shall consist of a GI Pipe (class 'A') Indian Tube Company make or approved equal not less than 40mm dia and 4.5 meters long. GI Pipe electrode shall be cut tapered at the bottom and provided with holes of 12mm dia drilled at 75mm interval upto 2.5 meters length from bottom. The electrode shall be buried vertically in the ground as far as practicable below permanent moisture level with its top not less than 1.25 M below ground level. The electrode shall be in one piece and no joints shall be allowed in the electrode. Wherever possible earth electrodes shall be located as near water tap, water drain or a down take pipe. Earth electrodes shall not be located in proximity to a metal fence. It shall be kept clear of the building foundations and in no case shall be nearer than 2 meters from the outer face of the wall. Refer Sketch for additional details.

The pipe earth electrode shall be kept vertically and surrounded with 150mm thick layer of charcoal dust and salt mixture upto a height of 2.5 meters from the bottom. At the top of the electrode a funnel with a mesh shall be provided for watering the earth. The main earth conductors shall be connected to the electrode just below the funnel, with proper terminal lugs and check nuts. The funnel over the GI pipe and earth connection housed in a masonry chamber, approximately 350mm deep. The masonry chamber shall be provided with a cast iron cover resting over a CI frame embedded in masonry.

3.8. EARTH CONNECTION

All metal clad switches and other equipment carrying single phase current, shall be connected to earth by a single connection. All metal clad switches carrying medium voltage and high voltage shall be connected with earth by two separate and distinct connections. The earthing conductors inside the

building wherever exposed shall be properly protected from mechanical injury by running the same in GI Pipe of adequate size.

Earthing conductors outside the building shall be laid 600mm below the finished ground level. The over lapping in copper strips at joints where required, shall be minimum 75mm. The joints shall be riveted and brazed with copper rivets and greased in approved manner. Sweated lugs of adequate capacity and size shall be used for all termination of wires above 1 Sq mm size and bare copper wire above 2.0mm dia. Lugs shall be bolted to the equipment body after the metal body is cleaned of paint and other oily substance and properly tinned. The earth wires entering the Final Distribution Boards shall be terminated with copper sockets crimped to its ends and tightened to the terminal with the help of flat end brass screws.

3.9. EARTH RESISTANCE

The earth resistivity of the soil where the earthing stations are located shall be submitted to the Consultant before the earthing work starts and get the approval of the Consultant/Owner. If the earth resistance is too high and multiple electrode earthing does/not give adequate low resistance to earth, than the soil resistivity immediately surrounding the earth electrodes shall be reduced by adding sodium chloride, calcium chloride, sodium carbonate, copper sulphate, salt and soft coke or charcoal in suitable proportions as directed by the consultants.

3.10. RESISTANCE TO EARTH

The resistance of each earth system shall not exceed 1.0 ohm in the case of Medium Voltage system and 0.5 ohm in the case of High Voltage system.

4 TESTING

4.1. GENERAL

On completion of the work the entire installation shall be subject to following tests:

- a) Wiring Continuity Test
- b) Insulation Resistance Test
- c) Earth Continuity Test
- d) Earth Resistivity Test

Besides the above any other test specified by the local Authority shall also be carried out. All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the Contractor at his own cost.

4.2. TESTING OF WIRING

All wiring systems shall be tested for continuity of circuits, short circuits and earthing after wiring is complete and before energizing. The Test Certificates for the complete wiring shall be submitted in the Format and the Total Electrical Installation shall be got approved by the Electrical Inspector.

4.3. INSULATION RESISTANCE TEST

The insulation resistance shall be measured by applying between earth and the whole system of conductors, or any section thereof with all fuses in place and all switches closed (except in concentric wiring) all lamps in position of both poles of the installation, otherwise electrically connected together, a direct current pressure of not less than twice the working pressure (provided that it does not exceed 660 volts for medium voltage circuits) be applied. Where the supply is derived from A.C. three phase system, the neutral pole of which is connected to earth, either direct or through added resistance,

pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistance measured as above shall not be less than 50 divided by the number of points on the circuit provided that the whole installation shall not be required to have an insulation resistance greater than one mega ohm. The insulation resistance shall not be measured between all conductors connected to one phase conductor of the supply and all the conductors connected to the middle wire or to the neutral or to the other phase conductors of the supply. Such a test shall be carried out after removing all metallic connections between the two poles of the installation and in these circumstances the insulation resistance between conductors of installation shall not be less than that specified above.

The insulation resistance between the case of frame work of housing and power appliances, and all live parts of each appliance shall not be less than that specified in the relevant Indian Standard Specifications or where there is no such specification shall not be less than half a mega ohm.

4.4. TESTING OF POLARITY OF NON-LINKED SINGLE POLE SWITCHES

In a two wire installation a test shall be made to verify that all non-linked single pole switches have been fitted in the same conductor throughout, and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply. In the three or four wire installation a test shall be made to verify that every non-linked single Pole switch is fitted in a conductor to one of the outer or phase conductor of the supply. The entire electrical installation shall be subject to the final acceptance of the Consultant as well as the local authorities.

4.5. EARTH RESISTIVITY TEST

Earth resistivity test shall be carried out in accordance with Indian Standard code of practice for earthing IS:3043:1987. All tests shall be carried out in the presence of the Consultant/Owner.

4.6 TEST CERTIFICATES

The Electrical Installation shall be tested as per relevant Indian Standards and Test Certificate to this effect shall be submitted to the Owner. The Contractor has to get the Total Electrical Installation approved by the Electrical Inspector and the permission to energise the same shall be submitted to the Owner.

5 SAFETY REQUIREMENTS

5.1 SCOPE

This section covers the requirements of items to be provided in the sub-station for compliance with statutory regulations, safety and operational needs.

5.2 REQUIREMENTS

Safety provisions shall be generally in conformity with the relevant Indian Standards and I.E. Rules and Regulations. In particular the following items shall be provided.

(a) Insulation Mats

Insulation Mats conforming to IS : 5424-1969 shall be provided in front of main switch boards and other control equipment as specified.

(b) First Aid Charts and First Aid Box

Charts (one in English, one in Hindi, one in Regional language), displaying methods of giving artificial respiration to a recipient of electrical shock shall be prominently provided at appropriate

place. Standard First Aid Boxes containing materials as prescribed by St. John Ambulance brigade or Indian Red Cross should be provided in each sub-station.

(c) Danger Plate

Danger plates shall be provided on HV and MV equipments. MV danger notice plate shall be 200mm x 150mm made of mild steel atleast 2mm thick vitreous enameled white on both sides and with inscriptions in signal red colour on front side as required.

(d) Fire Extinguishers

Portable CO₂ conforming to IS : 2878-1976 dry chemical conforming to IS 2171-1976 extinguishers shall be installed in the sub-station at suitable places as specified.

(e) Fire Buckets

Fire buckets conforming to IS : 2546-1974 shall be installed with the suitable stand for storage of water and sand.

(f) Tool Box

A standard tool box containing necessary tools required for operation and maintenance shall be provided in sub-station.

(g) Caution Board

Necessary number of caution boards as "Man on Line" "Don't switch on' etc. shall be available in the sub-station.

(h) Key Board

A key board of required size shall be provided at a proper place containing castel key, and all other keys of sub-station and allied areas.

6.0 M V PANELS, SUB-DISTRIBUTION BOARDS & FINAL DISTRIBUTION BOARDS

All the M V Panels , Sub-Distribution Boards(SDB) & Final Distribution Boards(FDB) shall be suitable for operation on 3 phase, 4 wire, 415 Volts, 50 cycles, neutral grounded at transformer and short circuit level not less than 31 MVA at 415 volts.

The MV Panel, SDBs & FDBs shall comply with the latest edition of relevant Indian Standards and Indian Electricity Rules and Regulations. All Panels and Distribution Boards shall be fabricated by the contractor by using specified components as per the specifications given below:

6.1. CONSTRUCTION FEATURES

The Distribution Boards and Panels shall be metal enclosed sheet steel cubical, indoor, dead front, floor mounting type. The distribution boards shall be totally enclosed, completely dust and vermin proof. Gaskets between all adjacent units and beneath all covers shall be provided to render the joints dust proof. Panels and Distribution boards shall be preferably arranged in multitier formation. All doors and covers shall be fully gasketed with foam rubber and/or rubber strips and shall be lockable. All MS sheet steel used in the construction of distribution boards and Panels shall be 2mm thick and shall be folded and braced as necessary to provide a rigid support for all components. Joints of any kind in sheet metal shall be seam welded, all welding slag grounded off and welding pits wiped smooth with plumber metal.

All covers shall be properly fitted and square with the frame, and holes in the panel correctly positioned. Fixing screws shall enter into holes tapped into an adequate thickness of metal or provided with hank nuts. Self-threading screws shall not be used in the construction of MV Panel & distribution boards. A base channel of 75mm x 40mm x 5mm thick shall be provided at the bottom. A minimum of 200 mm between the floor of MV Panel & Distribution board and lower most unit shall be provided. The MV Panel & Distribution Boards shall be of adequate size with a provision of 20% spare space to accommodate possible future additional switchgear in addition to spare feeders.

Knockout holes of appropriate size and number shall be provided in the Distribution Board and Panels in conformity with the location of incoming and outgoing cables.

Panels and distribution boards shall be provided with removable sheet steel plates at top and bottom to drill holes for cable entry at site. MV Panel shall be of Extendible type.

The Panels and SDBs shall be suitable for IP 42 protection.

6.2. CIRCUIT COMPARTMENTS

Each circuit breaker, MCCB and switch fuse units shall be housed in separate compartments and shall be enclosed on all sides. Sheet steel hinged lockable door shall be duly interlocked with the ACB/MCCB/switch fuse unit in 'on' and 'off' position. Safety interlocks shall be provided for air circuit breakers to prevent the breaker from being drawn out when the breaker is in 'on' position. The door shall not form an integral part of the draw out position of the ACB. All instruments and indicating lamps shall not be mounted on the ACB compartment door. Sheet steel barriers shall be provided between the tiers in a vertical section. The Knobs for holding the cubicle door in closed position shall be spring operating rotating type and not screwed type.

6.3. INSTRUMENT ACCOMMODATION

Separate and adequate compartments shall be provided for accommodating instruments, indicating lamps, control contractors and control fuses etc. These shall be accessible for testing and maintenance without any danger of accidental contact with live parts of the circuit breaker, bus bar and connections.

6.4. BUS BARS & BUS BAR CONNECTION

The bus bar and interconnections shall be of electrolytic Copper of 99.9 % purity of rectangular cross sections suitable for full load current for phase bus bars and full rated current for neutral bus bar and shall be extendible on either side. Minimum 200 Amps capacity bus bars shall be provided in the distribution boards. The bus bars and interconnections shall be insulated with PVC heat shrinking sleeves and colour coded. The bus bars shall be supported on unbreakable, non-hygroscopic insulated SMC supports at regular intervals to withstand the forces arising from short circuit in the system. All bus bars shall be provided in a separate chamber and properly ventilated. The current density of copper shall be 1.6 Amps per sq.mm cross sectional area of Bus bar.

All bus bar connections in Panel and Sub-distribution boards shall be done by drilling holes in bus bars and connecting by cadmium plated M.S. bolts and nuts. 20% Additional cross section of bus bars shall be provided in all distribution boards to cover up the holes drilled in the bus bars. Spring and flat washers shall be used for tightening the bolts.

Automatically operated safety shutters to screen the live cluster when the breaker is withdrawn from cubicle is to be provided.

All connections between bus bars and switches and between switches and cable alley terminals shall be through solid copper strips of proper size to carry full rated current and insulated with PVC heat shrinking sleeves. All the M V Panels and SDBs shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each feeder shall be clearly numbered from left to right to correspond with wiring diagram. All the

switches and feeders shall be distinctly marked with a small description of the service installed. Minimum width of busbar Alley shall be 300 mm and that of cable alley shall be 450 mm.

6.5. TERMINALS

The outgoing terminals and neutral link shall be brought out to a cable alley suitably located and accessible from the panel front. The current transformer for instruments metering shall be mounted on the terminal blocks. Cable compartments shall be provided for incoming and outgoing cables.

6.6. WIREWAYS

A horizontal wire way with screwed covers shall be provided at the top to take interconnecting control wiring between different vertical sections.

6.7. CABLE COMPARTMENTS

Cable compartment of adequate size shall be provided in the Sub Distribution Boards for easy termination of all incoming and outgoing cables entering from bottom or top. Adequate proper supports shall be provided in cable compartments to support cables. All incoming and outgoing switch terminals shall be brought out to terminal blocks in the cable compartment.

6.8. METERS

All meters shall be housed in a separate compartment and accessible from front only. Lockable doors shall be provided for the metering compartment. The details of other meters and indicating lamps are as described in each switch board and neutral selector switch of appropriate range and scale. Wiring for meters shall be colour coded and labeled with approved plastic ferrules for easy identification. All meters shall be digital.

6.9. CURRENT TRANSFORMERS

Where ammeters are called for CT's shall be provided for current measuring more than 60 Amps. Each phase shall be provided with separate current transformer of accuracy class I and suitable V.A. Burden for operation of associated metering. Current transformers shall be in accordance with IS:2705-1964 as amended upto date and Cast Resin Type.

6.10. INDICATING PANEL AND METERING EQUIPMENT

All meters and indicating instruments shall be accordance with relevant Indian Standards. The meters shall be flush mounted and drawout type. Indicating lamps shall be neon type and of low burden. Indicating lamps shall be backed up with fuses of 5 Amps and toggle switch.

6.11. MOULDED CASE CIRCUIT BREAKERS (MCCB)

MOULDED CASE CIRCUIT BREAKERS (MCCB): MCCB's shall be in accordance with IS: 2516-1985 & IEC 157-1 with the latest amendments. It shall be enclosed type made of Heat resistant high strength, flame retarding, thermosetting material rated for 500 V, 50 Hz. It shall have three position indicator 'ON', 'OFF' & 'TRIP' at top, bottom & middle position. It shall be provided with shunt trip and additional 2 Nos. NO & NC contacts. The minimum breaking capacity of MCCB's shall be 20 KA upto 100 AMPS rating and 35 KA for MCCB's above 100 AMPS rating upto 200 A and 50KA for MCCBs above 200 A. All MCCB.s shall have door operating handle (Rotary Operating Handle). The short circuit with standing capacity shall be ICS Rating and not ICU Rating.

6.12. EARTHING

Copper earth bars of 25mm x 3mm shall be provided for MV Panel and SDBs for the full length and connected to the frame work of the Panel and SDBs.

Provision shall be made for connection from this earth bar to the main earthing bar on both side of the Panel and SDBs.

6.13. PAINTING

All sheet steel work shall undergo a process of degreasing pickling in acid, cold rinsing, phosphating, passivating and then sprayed with a high corrosion resistant primer. The primer shall be baked in an oven. The finishing treatment shall be by application. Two coats of synthetic enamel paint of approved colour and powder quoted. The seven Tank process shall be adopted.

6.14. LABELS

Engraved anodized aluminium labels shall be provided on all incoming and outgoing feeder switches. Circuit diagram showing the control wiring shall be pasted on inside of the panel door and covered with transparent laminated plastic sheet. The Label shall indicate the name of the feeder, the specific area it is feeding, ampere rating and the cable size it is receiving.

The Labels shall be provided on the backside of the Panel in case of back access.

All the SDBs and Panels shall be subject to tests specified in relevant Indian Standards and test certificate shall be furnished.

6.15. SHOP DRAWING

Before fabricating the Panels and the SDBs/FDBs the contractor has to submit shop drawing with the wiring diagram for all the Panels and SDBs/FDBs to the Consultant and get approval from the Consultant.

6.16. INSPECTION

At all reasonable times during production and prior to shipment of equipment the contractor shall provide and secure for Consultant/ Owners representative every reasonable access and facility at their plant for inspection.

6.17. TEST CERTIFICATES

Testing of Panels and SDBs shall be carried out at factory and at site as specified in Indian Standards. The test certificates for the tests carried out at factory shall be submitted in duplicate.

6.18 MINIATURE CIRCUIT BREAKER & FINAL DISTRIBUTION BOARD

Miniature circuit breaker shall be quick make and break type and confirm with Indian Standards

IS : 8828 – 1978 (Specifications for Miniature Air Break Circuit breakers for voltage not exceeding 1000V) The housing of MCB's shall be heat resistant and having a high impact strength. The fault current of MCB's shall not be less than 9000 Amps at 230 volts. The MCB's shall be flush mounted and shall be provided with trip free manual operating mechanism "ON" and "OFF" indications.

The MCB contacts shall be silver nickel and silver graphite alloy coated with silver. Proper arc chutes shall be provided to quench the arc immediately. MCB's shall be provided with magnetic fluid plunger release for over current and short circuit protection. The over load or short circuit devices shall have a common trip bar in the case of DP and TPN Miniature circuit breakers. The MCB shall be tested and certified as per Indian Standards prior to installation.

All final distribution boards shall be provided with MCB's. TPN final distribution boards shall consists of 3 rows of single pole MCB's for each circuit, and each phase shall be connected to the incoming supply through double pole MCB isolator. Separate neutral bus bars shall be provided for each phase in the case of TPN Distribution Boards. In case Earth Leakage Circuit Breaker (ELCB) has to be provided in Final Distribution Boards then on the incoming side instead of DP MCB Isolator a DP ELCB shall be provided of current rating same as that of DP MCB Isolator and current sensitivity maximum of 100mA. The ELCB shall conform to IS: 12640 - 1988 (Residual Current-Operated Circuit Breakers- Specifications) Solid links between MCB Isolator and backed by HRC fuse/ Rewirable fuse and Neutral bus bar shall be provided. The Neutral shall be looped from one phase to another through DP Isolators. MCB's shall be provided on the phase or live conductor of each circuit and a neutral bar for the earthed neutral. The individual MCB in each row shall be detachable without disturbing the row of MCB's. Phase separation barriers of 3mm thick bakelite sheet shall be provided between the bank of

MCB's fitting 3mm thick bakelite sheet cover shall be provided for each phase. There shall be ample space behind the bank of MCB's to accommodate all the wiring. All the internal wiring of final distribution Boards shall be concealed behind 3mm thick bakelite sheet. All the distribution boards shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each circuit shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and circuits shall be distinctly marked with a small description of the service installed. A four way 60 A Brass/Copper neutral link shall be provided with terminals suitable to receive 16 sq mm stranded copper wires with end sockets. The final Distribution Boards shall be fabricated as per consultants design.

7. FIRE DETECTION AND ALARM SYSTEM

7.1 SCOPE

The scope of this section covers design, manufacturers, supply, installation, connecting, testing and commissioning of conventional type fire detection and alarm system.

The work include supply, installation, testing and commissioning of:

M S conduit work with all accessories.

Complete wiring in existing concealed/surface conduits Photoelectric type smoke detectors.

Rate of rise cum fixed temperature heat detectors.

Manual alarm stations.

Response indicators.

Main control and indicating panel/zonal panel.

A high degree of operational safety, high quality and well-designed detectors, signal panels and auxiliary equipment shall be accepted. Supplier shall confirm that the electronic components used in alarm and indicating panels are of standard manufacturers and are approved type, also the name of the manufacturer shall be indicated.

The Contractor shall obtain clearance and approval form the Local Fire Authorities, the insurance company insuring the building or any other agencies whom approval is required.

7.2 STANDARDS

For Spacing of detectors	BS	:	Code of Practice CP 1019, Section 2.7
For sensitivity of smoke detector	BS	:	5446 - 1977
For control and indicating panel	IS	:	2189 – 1988
For smoke Detector	IS	:	11360 - 1985
For Heat Detector	IS	:	2175 – 1988

7.3 OPERATING VOLTAGE

220 volts AC + 10% 50 cycles (single phase) and 24 volts DC +- 10%

7.4 DETECTORS IN GENERAL

COMPATIBILITY

All automatic fire detectors shall be interchangeable without requiring different mounting bases nor alternations in the signal panel.

RESPONSE SPECTRUM

Combustion gas detectors shall respond to both visible and invisible aerosols, size and colour of the aerosols shall not have a decisive influence on the response of the detector.

SENSITIVITY

On average, 30 mgr of burned material per cu.m (as measured in a 1 cu.m chamber) shall release an alarm.

POWER CONSUMPTION

Each detector shall use the minimum of power, for economic circuits, so that it shall be possible to connect at least 20 detectors per zone. Distance upto 1000 meters from detector to signal panel shall not influence the number of detectors per zone.

BUILT-IN-RESPONSE INDICATOR

Each detector shall incorporate indicator "LED" at the base of the detector which shall light up on actuation of the detector to locate the detector which is operated. The detector shall not be affected by failure of the response indicator lamp.

RESPONSE INDICATORS

It shall be possible to provide a secondary response indicator for the detector outside the closed room.

MAINTENANCE

All detectors shall be fitted either with plug-in system or bayonet type connections only, from the maintenance and compatibility point of view.

CONSTRUCTION

The detector shall be vibration and shock proof. When disassembling for cleaning purpose, its components must not be damaged by static over voltage.

7.4.1 ATMOSPHERIC AND THERMAL DISTURBANCES

The detector shall also be designed as to be practically immune to environmental criteria such as air currents, humidity, temperature fluctuations, pressure and shall not release false alarm.

7.4.2 CONTINUOUS OPERATION

An alarm release shall not effect a detector's good functioning. After resetting the alarm the detector shall resume operation without re-adjustment of any kind.

7.4.3 ADAPTABILITY TO AMBIENT CONDITIONS

Detectors shall be designed for adaptability to humid and explosion endangered locations.

7.5 PHOTOELECTRIC SMOKE DETECTORS

Smoke detectors shall connect with two wires to one of the Fire Alarm Panel Loops. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog value for smoke density. The detectors shall be ceiling mounted type and shall include a twist-lock base.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel. Both LEDs may be placed into steady illumination by the control panel; indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED.

The area covered by each smoke detector shall be as per IS-2189.

Detectors shall be suitable for an operating temperature 0 degree C to 55 degree C and Relative humidity of 0% to 95%.

Detectors shall be suitable for a supply voltage of 17 to 28 V DC without affecting the sensitivity.

The detector shall have the approval of UL/FM/VDS/LPC only.

7.6 THERMAL DETECTORS

Thermal detectors shall connect with two wires to one of the Fire Alarm Panel loops. The detectors shall use an electronic detector to measure thermal conditions caused by a fire and shall, on command from the control panel, send data to the panel representing the level of such thermal measurements. The detectors shall be ceiling-mounted type and shall include a twist-lock base.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions. Both LEDs may be placed into steady illumination by the control panel, indicating that an alarm condition has been detected.

Detectors shall be suitable for an operating temperature 0 degree C to 22 degree C and relative humidity of 0% to 95%.

Detectors shall be suitable for a supply voltage of 17 to 28 V DC without affecting the sensitivity.

The detector shall have the approval of UL/FM/VDS/LPC only.

7.7 MANUAL CALL STATIONS

Manual Call stations shall be provided to connect to the Fire Alarm Panel loops.

Manual stations shall be constructed of high impact LEXAN sheet with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters. Press/back stations with reset table capacity shall be acceptable.

Stations shall be suitable for surface mounting as shown on the plans, or semi-flush mounting, and shall be installed not less than 42 inches, nor more than 48 inches above the finished floor unless otherwise specified by applicable building codes.

7.8 RESPONSE INDICATOR

Response indicator shall be LED (light emitting diode) type, and shall indicate when a detector senses the fire.

7.9 REPEATER PANEL

Repeater panels are to be provided at remote location for monitoring the health of FAS. It should have 2 line 40 inches character display along with CEO status indicator. Battery backup shall be provided as an in-built feature and all information will be presented in clear English language. It shall be suitable for operation from 0 degree C to 49 degree C and shall be flush mounted.

7.10 ELECTRONIC HOOTERS

All Hooters should be able to provide at least a minimum of 3 different tones, which should be user configurable. The minimum decibel level of each hooter should be 90db at 1 mtr. All hooters should be UL/FM listed.

The Electronic Hooters shall be housed in MS enclosure of 1.5 mm sheet metal.

The Hooters shall be with built on oscillator & amplifier.

The Hooters shall give wailing sound whenever it received 24 V supply from panel on receipt of Fire signal.

The MS box shall be painted with Fire Red (Power Coated)

7.11 MAIN FIRE ALARM CONTROL PANEL

Control Panel

The control cabinet shall be dust proof and shall be provided with a glass door with lock and key to prevent tampering by unauthorized persons.

The control circuit shall consist of glass epoxy (PCB) printed circuit board, silver plated and treated with protective layer of special lacquer for protection against corrosion.

The alarm circuitry shall be 100% solid state without the use of any relays anywhere in zone card.

The zone cards shall be modular and interchangeable.

Every zone shall have individual control for test acknowledge and any zone shall be isolated without affecting the working of the other zones in the panel.

Sounder silencing control shall be provided which shall remain in visual indication at the same time making the panel from to receive alarm from any other zone without the need for resetting the entire panel.

Silencing switches/push buttons – the system shall be so designed that once an alarm has been given it shall continue till the alarm sounder is switched off. The silencing switches/push buttons in their 'OFF' position shall give an indication of this fact on the main control panel or transfer the alarm signal to supervisory sounders under the supervision of the responsible person so that they may put use of the smallest number of call points. Operation of silencing switch shall not prevent sounding of alarm from any other zone simultaneously.

Central control and indicating panel shall be suitable for conventional Fire Detection and Alarm System and shall comply with IS: 2189-1988.

Control panel shall support the following Fire-Detection components.

Smoke Detectors

Detectors (Both fixed & rate of temperature rise type)

Manual Call Stations

System shall be completely backed up against Mains failure for atleast 8 hours and shall be suitable for the following types of batteries.

Lead acid Maintenance free.

Lead acid non-maintenance free Lead
acid semi-maintenance free Nickel
Cadmium.

System shall be self-diagnostic and shall cover the following:

Components/Modules of the fire panel.

Faulty detectors

Missing detectors

Open circuit short circuit conditions of the detector cable.

Suitable indication shall be given on the panel.

Zone wise annunciation of alarm by using:

Buzzer Sounders

7.12. BATTERY

Suitable rating ampere Hours 24 Volts DC sealed maintenance free batteries shall be provided for Fire Detection and Alarm System. The battery rating is indicative only. It shall be sized by bidder to cater to all momentary and short time loads in addition to supplying the continuously rated loads for duration of 8 hours. However minimum size shall be 65 AH.

Battery Charger

Bidder shall furnish the battery charging system complete with all necessary accessories such as transformer, rectifier, switches, fuses, starters, contactors, ammeter, voltmeter, protections and other, devices for trouble free operation.

Construction features

Housing of battery charger shall be 2 mm thick CRCA steel sheet cabinet for indoor installation and shall be floor mounted type. The cabinet shall be folded and braced as necessary to provide a rigid support for all components. Louvers shall be provided in the cabinet for ventilation. PVC sheets of 3 mm thick shall be provided on the selves on which the batteries are to be placed.

Input

240 volts AC 50 cycles, single phase with tapping's of 0-200-220-240-260 volts on the primary side of the transformer.

Output

DC output shall be 24 volts. DC bridge rectifier shall be of silicon type, having full wave rectification. Suitable contactor, relay, reset shall be provided as required.

7.13 CABLES

All PVC insulated FRLS copper conductor stranded cables shall be 650 volts grade and shall generally conform to IS-1554-1988 and meet the signal cabling requirement of the system manufacturer.

Strands of cables shall not be cut to accommodate & connect to the terminals. Terminals shall have sufficient cross-sectional area to take all the strands.

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cables to avoid forming kinks. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius as recommended by the manufacturers. All cables shall be laid with minimum one diameter gap and shall be clamped at every meter and shall be tagged for identification with aluminum tag and clamped properly. Tags shall be provided at both ends and all changes in directions both sides of wall and floor crossings. All cable shall be identified by embossing on the tag the size of the cable, place of origin and termination.

These shall be measured on linear basis including the fittings required like, end termination junction boxes.

LIST OF APPROVED MANUFACTURERS FOR DIFFERENT MATERIALS TO BE USED IN THIS PROJECT

(All materials shall be ISI mark)

1	MEDIUM VOLTAGE SWITCHGEAR	
a	MOULDED CASE CIRCUIT BREAKER	Schneider / Legrand/ Siemens, L&T Haggard, Havells (MCCB)
b	SWITCH FUSE UNIT	Havells / L & T/ EE/ Crompton / H Helcon
c	HRC FUSE	Havells/ L & T/ EE/ H Helcon
d	CHANGE OVER SWITCH	Havells/ L & T or approved equivalent
2	AC System/VRV	Blue Star/O General /Daiken
3	AIR HANDLING UNIT(AHU)	Zeco/Brightflow/Kruger
4	CENTRIFUGAL FANS	Kruger/Nicotra/ Green heck/Air Flow
5	INLINE FANS	Kruger/Nicotra/ Green heck/Air Flow
6	G.I. Sheets	Sail/ Tata/Jindal
7	FACTORY FABRICATED DUCTING	Rolastar/Zeco/Ductofab
8	WELDING ROADS	Advani/L&T
9	DUCT SUPPORTS	Hilti/ walraven/gripple

10	ANCHOR/ FASTENER	Hilti/Fisher/Sterling
11	ALUMINIUM TAPE	Johnson/Birla 3M
12	GRILLS/DIFFUSERS/FIRE DAMPERS / LOUVERS/EXHUST VALVE	Glenstorms/Systemair/Ruskintitus
13	INSULATION/ACOUSTIC LINING FOR DUCTING	Armacell / Urobatex /vidoflex
14	INSULATION FOR REFRIGERENT FOR PIPE	Armacell / Urobatex /vidoflex
15	COPPER REFRIGENT PIPE	Rajco/Mandev/Mahflow
16	UPVC DRAIN PIPE	Supreme/Astrals/Finolex
17	CANVAS CONNECTION	Mapro/Glenstorms/Astar
18	PROPELLER TYPE EXHUST FAN	Kruger/ havells/ Marathan/Orient/Usha/Bajaj
19	MCB/ELCB/DBS/MCCB	Schneider / Legrand/ Siemens, ,L&T Haggard, Havells
20	ACB	Schneider (MG-NS Series)/ Siemens (3WT)/ L&T (D-sine)
21	MV CONTRACTORS/TIMER/ STARTERS	L&T/ Siemens/Legrand
22	PROTECTIVE RELAYS	L&T/ Siemens,Alstom,ABB
23	ALL METERS	Enercon/Neptune/ Siemens
24	AMMETER/VOLTMETER	A.E/ Indotech or approved equivalent
25	INDICATION LAMPS/PUSH BUTTON	L&T/ Schneider/Vashino,Concord,Siemens
26	CAPACITOR	L&T/ Siemens/ Neptune
27	TERMINAL BLOCKS	Elmex/Wago/Connect-Well
28	CURRENT TRANSFORMER	AEP/ Kappa/ Inditech
29	SELECTOR SWITCH	Kaycee/L&T/BCH/Areva/ABB
30	BUS BAR	Jindal/ Indalco/ Century
31	LT CABLES/CONTROL CABLE	Skyton/ Finolex/polycab /Gloster all FRLS
32	SWITCH SOCKET/METAL CLAD SOCKET	Legrand (Myrius) / Anchor Roma Havells,(Crabtree)
33	CABLE TRAY	Pilco/ Neeo, Slotco, Venus,Era Ontrol Syatem
34	RACEWAY	Grandlay.Indeana/Aditya steel
35	HUNGES	Dowels or approved equivalent
36	CONNECTORS	ELMEC/Delcity/Waytek
37	CABLE GLAND	Stripwell/ Commet/ Siemens,Gromet,Power Engg.
38	MV PANEL (TTA)	Siemens Cpan/ ABB R2K/ Schneider Blockset
39	GI CONDUIT	BEC/ AKG/ Steel Craft
40	MOTORS	Siemens/ ABB/ Crompton
41	PVC PIPE	Finolex/ Prince/ Supreme

42	ELECTRICAL PANEL	Krypton/Risha/KEPL, Era Control System /SPT Switchgears /Eva` Engineers
43	G.I PIPE	Tata/Jindal/Bhusan
45	Earth Leakage Circuit	Hager/ Legrand/ Merlin Gerin
46	FIRE ALARM SYSTEM	System Sensor/ Edwards/Appolo/Agni
47	Data Components	AMP/ Systmatics/legrand
48	ANY OTHER ITEMS	Sample to be approved by engineer in- charge
49	ACCESS CONTROL SYSTEM/ CCTV System	Brivo/Honeywell/Dats/Lenel/Tyco/Siemens
50	Door Phone	Panasonic/Zicom/Solus(Secure)
51	Reader	Brivo/HID
52	Smart / Proximity Card	Brivo/HID
53	CAPACITOR BANKS	L&T/ SIEMENS/ALSTOM
54	PVC INSULATED COPPER CONDUCTOR STRANDED CONTROL WIRES OF 1100 V GRADE	Finolex/ Polycab FRLS/Havells
55	COPPER LUGS HEAVY DUTY	Dowells
56	MEASURING METERS	Automatic Electric/Kappa/Enercon
57	DIGITAL METERS & KWH METERS	SECURE/L&T/ENERCON
58	PUSH BUTTONS	L & T/Siemen/ABB
59	WIRING CABLE	Finolex / Polycab / Havells all FRLS
60	M.S. CONDUITS AND ASSESSORIES	BEC /AKG /ESC
61	P.V.C. CONDUITS AND ACCESSORIES	BEC/ AKG/Polypack/ESC
62	LIGHT FIXTURES	Philips/Havells/Wipro
63	DATA,TELEPHONE CABLE	D-link
64	FAN/WALL Mounted Fan	Philips /Crompton/Havells

The names of manufacturers are mentioned in order of preference. The Contractor shall quote rates for materials of first preference only and that the Contractor has satisfied himself regarding the availability of the materials and that only materials called for under first preference shall be supplied and installed. In the event of the materials of makes called for are not available and alternative makes are approved (by the consultant) for incorporation in the work, the rates quoted shall be suitably amended based on the price variation between the specified makes and alternative makes on the day the alternative makes are accepted.

POINT WIRING

The rates for all point wiring items shall include:

1. Conduits, Conduit specials, bushes and other fittings concealed or exposed as called for.
2. Embedding conduit and allied fittings including the outlet boxes in walls, floors etc., during construction and/or in chases including cutting chases and making good with cement mortar as necessary in the case of concealed conduit work.

3. Providing and fixing approved fixing devices, saddles and grouting the same as required for exposed conduits.
4. Fabrication and Supply of G.I. boxes for switches, ceiling fan hooks, Exhaust fans outlet and lighting fixtures with 1.6 mm thick sheet steel.
5. Providing and fixing junction boxes with 3mm Hylam or 3mm/5mm thick Perspex sheet cover duly painted from inside to match the colour of the walls. All Junction boxes shall be MS only.
6. All fixing accessories such as clips, brass screws/brass washer's rawl plugs etc.
7. All work & material necessary (including circuit wiring from DB to first tapping point of each circuit with 2.5 sq. mm wires) in complete wiring of a switch circuit of any length from the distribution board to the following via the switch:
 - a) Ceiling rose b) Connector c) Back plate d) Socket outlet e) Lamps Holder f) Any other terminal outlet boxes g) Ceiling fan and Exhaust fan
8. Switch, socket outlet as called for.
9. Cable/wire as required upto lamp holder.
10. All metal boxes and boards concealed or surface mounted including those required for housing fan regulators.
11. All accessories necessary to complete wiring as specified.
12. FRLS PVC Insulated stranded Copper conductor earth wire for fixtures, switch outlet boxes and third pin of 5/15 Amps. Socket to common earth.
13. Painting all exposed M.S. conduits, outlet boxes and junction boxes.
14. M.S. conduit for concealed and exposed wiring.
15. 2 mm dia G.I. pull wires in conduit work, wherever necessary.
16. The switch plate shall be made of I.S.I. grade Urea Formaldehyde Moulding powder. The base of the switches shall be made from high heat resistant phenol formaldehyde powder. The cost of switches shall include the cost of cover plates, cadmium fixing screws etc.
The switches/sockets shall be rocker operated.
17. Separate Earth wire shall run along with each circuit both for power and light circuits.
18. Cutting of floor and making good for carrying conduits also.
19. Numbering of Circuits with ferrules for all circuits at both ends.
Providing 15 Amps capacity Bakelite terminal Blocks for terminating the phase, neutral and earth wire at each fixture location.
PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15 mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals. All stands of wires shall be soldered at the end before connection. The connecting brass-screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors.
Provide embossing on the sockets engraving "UPS" and "RAW"

CONDUITING & WIRING FOR TELEPHONE & COMPUTER SYSTEM

The rates for conduit work shall include :

1. All necessary specials and fittings.

2. M. S. inspection, junction and outlet boxes as required.
3. 3/5 mm thick perspex sheet covers for inspection & junction boxes.
4. All fixing accessories such as clips, nails, brass screws/brass washers, etc.
5. 2 mm dia G.I. pull wires in conduit work, wherever necessary.
6. Providing and fixing approved saddle, hooks and grouting the same as required in the case of all exposed conduit work.
7. Embedding conduit and allied fittings including the outlet boxes in walls, floors etc., during construction and/or in chases including cutting chases and making good with cement mortar as necessary in the case of concealed conduit work.
8. Painting all inspection, junction and outlet boxes.
9. PVC conduit for concealed conduit wiring.
10. Painting of Hylam/ perspex sheet cover from inside to suit the colour of the surrounding wall with two coats of paint.
11. Supply and fabrication of G.I. Outlet boxes.
12. The outlet cover plate for Telephone outlets shall be made of I.S.I. grade Urea Formaldehyde Moulding powder. The cost of outlets shall include the cost of cover plates, cadmium fixing screws etc. also.
13. Numbering of wires on both ends of the wires for easy identification with PVC ferrules.

EARTHING

The rates for earthing items include:

1. All fixing accessories such as brass saddles, brass screws, rawl plugs etc.
2. Jointing by riveting in case of copper earth strips (2 per joint) and by welding in case of GI strips.
3. Cutting chase, making holes and making good the same wherever required.
4. All masonry work including earth work for earthing stations, earthing tapes and wires.
5. Effecting adequate and proper interconnections.
6. Use of copper thimbles for all wire terminations in the Distribution Boards, switches and sockets.

CABLES, MAINS AND SUB-MAINS

The rates for all items of work shall include:

1. Embedding conduits and allied fittings in walls, floors, etc., during construction and/or in chases including cutting chases and making good as necessary in the case of concealed conduit work.
2. Providing and fixing approved saddles, hangers, trays etc., and grouting the same as required for exposed conduits where called for. Providing dash fasteners for the threaded MS down rods(primer coated) used for hanging the cable \trays.
3. Providing and fixing junction boxes with 5 mm thick 'Hylam' sheet covers.
4. Effecting adequate and proper connections at terminations.
5. Ensuring that provision is left in various buildings components and trenches as the work proceeds, for incorporation of cable supports at a later date.
6. Providing all fixing accessories such as clamping devices, nuts and bolts, screws etc.
7. Clamping to supports where laid in trenches.
8. Excavation of trenches and bringing the trenches to exact level as required.
9. Providing sealing compound, thimble, solder etc., at joints and terminations as called for.
10. Providing proper supports for cable terminal boxes as called for.
11. Wherever cables pass through walls, ceiling, paved area or below roads provide sleeves/ hume pipes and making good as necessary.

DISTRIBUTION BOARDS

The rates for the following items of work generally include:

1. The supporting rigid steel frame work.
2. 1.6 mm thick MS boxes complete with dust proof and vermin proof covers and locking arrangements, mounted flush with surfaces.
3. All fixing accessories such as dash fasteners, bolts, nuts, screws, etc. as required.
4. Building into masonry/concrete work including all necessary cutting and grouting with cement mortar 1:2.
5. Effecting adequate and proper connections.
6. Effecting proper bonding to earth.
7. Painting/lettering on switches and distribution boards the location they serve and providing on each board its circuit diagram.

8. Touching up all damaged paint over exposed work with one coat of red oxide primer and two finishing coats of approved synthetic enamel paint.
9. Main Distribution Board and Final Distribution Boards shall be fabricated by Contractor with the specified equipment.

Provide 6 Amps. SP MCB for Light Points Circuits, 20 Amps. SP MCB for Power Circuits and 32 Amps. SP MCB for 1.5 Ton AC Unit.

FIXING OF LIGHTING FIXTURES AND FANS

The rate for fixing of lighting fixtures and fans shall include:

1. Receiving the fixtures from the Owner's stores and assemble the same at site and testing the fixture before fixing.
2. All components that may be required to make the installation complete in all respects such as:
 - a. Suitable length of down rod, hanger and connecting wires, where called for.
 - b. Wires for connecting the fixtures to the point through connector blocks.
 - c. All wood and metal blocks to serve as base of fixtures.
 - d. Bonding with common earth wires.
3. Drilling holes in supports where required.
4. Fixing clamps, GI bolts and nuts, clips, brass screws, dash fasteners and other fixing accessories as required, including leaving necessary provision for fixing at time of concreting.
5. Approved enamel painting for hanger rods, clamps and other components and fixing accessories as called for.
6. Testing and commissioning of all fixtures and fans after installation.
7. The lighting fixtures shall be suitable for 230 Volts, single phase 50 cycles A.C. supply system.
8. Incandescent lamps shall be 100 Watts (maximum) and fluorescent lamps shall be 18 watts and 36 watts.
9. Use G.I. suspenders and clamping to the slab with dash fasteners(4 per fitting) , including turn buckle arrangements for adjustable heights for hanging. They should be the same suspenders as used for hanging the False Ceiling grid ceiling.
9. The contractor to mark the size of light fittings, speaker and fire alarm components on the false ceiling for the interior contractor to cut holes.

A) AIR DISTRIBUTION SYSTEM:

1.0 GENERAL:

Supply, fabrication, installation and testing of all sheet metal/aluminium ducts & supply, installation, testing and balancing of all grilles, registers and diffusers, in accordance with these specifications and the general arrangement shown on the drawings.

Duct work shall mean all ducts, casings, dampers, access doors, joints, vanes, stiffeners, hangers and supports etc.

All ducts shall be fabricated from galvanised steel sheets of the following thickness as indicated in schedule of quantities & as described in the IS:655 with latest edition.

2.0 RECTANGULAR DUCT:

Dimensions of Ducts	Gauge G.I	Aluminium	Type of Joints	Type of Bracings
Upto 600	24	22	G.I. Flange at 2.5 Centre	Cross Bracings
601 to 750	24	22	25 x 25 x 3 mm angle iron frame with 6mm dia nuts and bolts,	25 x 25x 3mm MS angles bracing at 1500 mm from joints.
751 to1000	22	20	25x25x3mm angle iron frame with 6mm dia nuts and bolts.	25 x 25 x 3mm MS angle bracing at 1500mm from joints.
1001 to1500	22	20	40x40x5 mm angle iron frame with 8mm dia nuts and bolts.	40 x 40 x 3mm MS angle bracing at 1500mm from joints.
1501 to2250	20	16	50x50x3 mm angle iron to be cross braced diagonally with 10 mm dia nuts & bolts at125 centre.	40 x 40 x 3mm MS angle bracing at1200mm from joints or 40x 40x 3mm MS angle diagonal bracing.
2250 and above	18	14	50x50x6 mm angle iron frame 10 mm nuts & bolts at125 mm centre.	50 x 50 x 3mm MS angle bracing at 1200mm from joints or 50x 50x 3mm MS angle diagonal bracing.

Sheet metal ducts shall be fabricated out of galvanized steel sheets conforming to BIS 655, BIS 277, BIS 737 & SMACNA. Sheets used shall be produced by Hot dip process and galvanizing shall be Class VIII- Minimum Average Coating 120 gm/sq.m as per BIS 277: 1992.

1.0 HANGERS FOR DUCT:

Duct Size (mm)	Spacing(M)	Size of MS angle (mm x mm)	Size of rod dia (mm)
Upto 750	2.5	40 x 3	10
751 to 1500	2.0	40 x 3	12
1501 to 2250	2.0	50 x 3	15
2251 to above	2.0	50 x 3	15

4.0 FABRICATION:

All ducts shall be fabricated and installed in workman like manner, generally conforming to IS 655. Round exposed ducts shall be die formed for achieving perfect circle configuration.

- a) Ducts so identified on the drawings shall be acoustically lined with thermal insulation as described in the section 'Insulation' and as indicated in schedule of quantities. Duct dimensions shown on drawings are overall sheet metal dimensions inclusive of the acoustic lining, where required and indicated in schedule of quantities.
- b) Ducts shall be straight and smooth on the inside with neatly finished joints. All joints shall be made air tight.
- c) All exposed ducts within conditioned spaces shall have slip joints - no flanged joints. The internal ends of slip joints shall be made in the direction of air flow. Exposed ducts, where required or as indicated in Schedule of quantities, shall be painted with two coats, of enamel paint of approved colour. Ducts and accessories within ceiling spaces, visible from air conditioned areas shall be provided with two coats of mat black finish paint.
- d) Changes in dimensions and shape of ducts shall be gradual. Curved elbows, unless otherwise indicated, shall have a centre line radius equal to one and a half times the width of the duct. Air turns shall be installed in all vanes, arranged to permit the air to make the turn without appreciable turbulence. Suitable vanes shall be provided in duct collar to have uniform/ proper air distribution.
- e) Ducts shall be fabricated as per details shown on drawings. All ducts shall be rigid and shall be adequately supported and braced where required with standing seams,tees, or angles of sample size to keep the ducts true to shape and to prevent bulking, vibration or breathing.
- f) All sheet metal connections, partitions and plenums required to confine the flow of air to and through 18g GI/16 gauge aluminium, thoroughly stiffened with 25mm x25mm x 3mm angle iron braces and fitted with all necessary doors as required to give access to all parts of the apparatus. Access Doors shall be not less than 45cm x 45cm in size.

5.0 INSTALLATION:

All ducts shall be installed generally as per the drawings and in strict accordance with approved shop drawings to be prepared by the Contractor.

- i. The Contractor shall provide and neatly erect all sheet metal work as may be required to carry out the intent, of these specifications and drawings. The work shall meet with the approval of Owner's site representative in all its parts and details.
- ii. All necessary allowances and provisions shall be made by the Contractor for beams, pipes, or other obstructions in the building, whether or not the same are shown on the drawings. Where necessary to avoid beams or other structural work, plumbing or other pipes, and/or conduits, the ducts shall be transformed, divided or curved to one side, the required area being maintained, all as per the site requirements.
- iii. If a duct cannot be run as shown on the drawings, the contractor shall install the duct between the required points by any path available, in accordance with other services and as per approval of Owners site representatives.

iv. All duct work shall be independently supported from building structure. All horizontal ducts shall be rigidly and securely supported, in approved manner with trapeze hangers formed of MS rods and angle iron under ducts at not greater than 2 meter centres. All vertical duct work shall be supported by structural members at each floor. Air conditioning contractor shall supply and install 50mm cube MS boxes with 10mm dia steel rod passing through box, all given two coats of redoxide paint, the MS rod tied with reinforcement bar at point of suspension shall be neatly exposed and opening subsequently filled with plastic compound after duct hangers are installed.

If duct is passing through in such areas where space between ceiling slab to false ceiling is more than 1500 mm then duct should be supported by wall mounted brackets of 40 x 40 x 3 mm angle.

v. Ducting over furred ceiling shall be supported from the slab above, or from beams, after obtaining approval of Owner's site representative. In no case shall any duct be supported from false ceiling hangers or be permitted to rest on false ceiling. All metal work in dead or furred down spaces shall be erected in time to occasion no delay to other contractors on the building.

vi. Where metal ducts or sleeves terminate in wood work, tight joints shall be made by means of closely fitted heavy flanged collars. Where ducts pass through brick or masonry opening and wooden frame work shall be provided within the opening and crossing ducts provided with heavy flanged collars on each side of wooden frame work, so that duct crossing is made leak-proof.

vii. All ducts shall be totally free from vibration under all conditions of operation. Whenever duct work is connected to fans, air handling units or blower coil units that may cause vibrations in the ducts, ducts shall be provided of closely woven, rubber impregnated double layer asbestos/canvas or neoprene coated fibre glass fire resistant flexible connection. The flexible connections located close to the unit, in mutually perpendicular directions. The flexible sleeve at least 10cm long securely bonded and bolted on both sides. Sleeve shall be made smooth and the connecting duct work rigidly held by independent supports on both ends. The flexible connection shall be suitable for pressures at the point of installation.

viii. Air conditioning unit and exhaust fans shall be connected to duct work by inserting at air inlet and air outlet a double canvas sleeve. Each sleeve shall minimum 150 mm securely bolted to duct and the connecting duct work rigidly held in line with unit inlet or outlet.

6.0 SPLITTERS AND DAMPERS:

All dampers shall be opposed blade type dampers of robust construction and tight fitting. They shall be made of G.S. sheet minimum 16 g thick and shall have brass bushes. The design, method of handling, and control shall be suitable for the location and service required.

Dampers shall be provided with suitable links, levers and quadrants as required for their proper operation control or setting devices shall be made robust, easily operatable and accessible through suitable access doors in the ducts. Every damper shall have an indicating device clearly showing the damper position at all times. Handles will be provided with extended arms to account for insulation thickness.

Dampers shall be placed in ducts and at every branch supply or return air duct connection, whether or not indicated on the drawings, for the proper volume control and balancing of the system.

7.0 FIRE DAMPER:

All supply/return air duct or path at AHU room wall or slab crossing shall be provided with fusible link type fire damper. The fire rating shall be of 90 minutes fire damper blades and outer frame shall be formed of 1.6mm galvanised sheet steel. The damper blade shall be pivoted spindles in self lubricated bronze bushes, stop seals shall be provided on top and bottom of the damper housing made of 16g galvanised sheet steel. Side seal shall

be provided to preventing fire leakages.

8.0 SUPPLY AND RETURN AIR GRILLES:

Supply and return air grilles shall be M.S. or anodized extruded aluminium construction with individually adjustable bars as shown on drawings and indicated in schedule of quantities. Supply air grilles shall be generally double deflection type, with removable key operated volume control dampers. Return air grilles shall be generally double deflection type similar to supply air grilles but without dampers. All supply and return air grilles behind wooden frame shall be single deflection type with one way bars only, the supply air grilles being provided with removable key operated volume control dampers. Mild steel supply and return air grilles shall be factory coated with rust resistant primer and shall be finished with two coats of paint as per client's choice. Aluminium supply and return grilles shall be powder coated and to have colour of client's choice or extruded aluminium as per bill of quantities.

For fixing of grilles in the walls HVAC Contractor has to provided 50 mm x 50 mm wooden frame of kail wood. The frames have to be given coating of fire retardant paint. Nothing extra shall be paid on this account.

9.0 SUPPLY AND RETURN AIR DIFFUSERS:

Supply and return air diffusers shall be shown on the drawings and indicated in schedule of quantities. The supply air diffuser shall be provided with removable key operative volume control dampers. Mild steel diffusers/dampers shall be factory coated with rust resistant primer. These shall be finished with two coats of paint as per client's choice.

Aluminium supply and return air diffusers shall be powder coated and to have colour of client's choice or shall be extruded aluminium.

i. Round or Rectangular Diffusers:

Supply/return air linear diffuser shall be M.S. or Extruded aluminium construction, square, rectangular, or round diffusers with flush fixed pattern or adjustable flow pattern. Diffusers for different spaces shall be selected in consultation with the Architect/Consultants. Supply air diffusers may be equipped with fixed airdistribution grids, removable key-operated volume control dampers, and antismudge rings as per requirements of schedule of quantities.

ii. Linear Supply air/ Return Air Grilles:

This shall be M.S. or extruded aluminium construction with fixed horizontal bars at 15 dig inclination and flange on both side. The thickness of fixed bar louvers shall be at least 5.5mm & angle shall be 20mm/30mm inside . The grilles shall be suitable for concealed fixing volume control damper of extruded. Aluminium construction with black anodized finished shall be provided in SA duct collars.

10. LINEAR DIFFUSER:

Liner diffuser shall be extruded aluminium construction multi-slot type with air pattern controlled provided in each slot. Supply air diffusion shall be provided with volume damper in each slot of the supply air diffuser. Plenum shall be provided for each supply air diffuser.

The Material of Grilles shall be as follows:

- i. All grilles shall be selected in consultation with the Client/Architect/Consultant. Different spaces shall require horizontal or vertical face bars, and different width of margin frames.
- ii. All grilles shall have a soft, continuous rubber gasket between the periphery of the registers and the surface on which it has to be mounted. The effective area of the registers shall not be less than 75 percent.
- iii. Grilles shall be adjustable pattern as each grille bar shall be pivot able to provide pattern with 0 to 100 deg horizontal arc and upto 30 deg C deflection up or down. Bars shall hold deflection settings under all conditions of velocity and pressure. Extruded aluminium grilles shall have fixed bars.
- iv. Bars longer than 45cm shall be reinforced by set-back vertical members of approved thickness.

The material thickness of grills, diffuser, damper shall be as follows :

Diffuser	MS	Aluminium
a) Frame	20 gauge	18 gauge
b) Louvers	20 gauge	18 gauge

Grills :

a) Frame	20 gauge	18 gauge
b) Louvers	26 gauge	24 gauge

V.C. Damper :

a) Frame	20 gauge	18 gauge
b) Louver	26 gauge	24 gauge

v. Fresh air intake and extract louvers:

All the louvers shall be rain protection type and shall be fabricated from extruded aluminium section. The louvers shall additionally be provided with heavy duty expanded metal (aluminium –alloy) bird screed. 50 mm x 75 mm wooden frame made out of kail wood to be provided by HVAC contractor free of cost for fixing of louvers.

vi. Testing & Balancing:

After the installation of the entire air distribution system is completed in all respects, all ducts shall be tested for air leaks before painting the interiors of conditioned spaces air distribution system shall be allowed to run continuously for 48 hours for driving away any dust or foreign material logged within ducts during installation.

B) THERMAL/ACOUSTIC INSULATION:

GENERAL:

Scope of this specification comprises of supplying, installing, testing and commissioning of insulation on duct, pumps, chilled water piping, chillers, expansion tank, AHU room and duct lining.

1.0 DUCT INSULATION:

Resin bonded, glass wool, pre-laminated with aluminium foil. The thermal conductivity of glass wool shall not exceed 0.024 Kcal/hr.sqm deg C (0.19 BTU in/Hr Sq.ft deg F at 10 deg C - mean temperature and density shall not be less than 48 kg/m³.

1.1 Thickness of Insulation:

- | | | |
|----|--|--------|
| a. | For Duct passing through return air areas | = 25mm |
| b. | For Duct passing through non air conditioned space | = 50mm |
| c. | Treated fresh air duct | = 50mm |

1.2 Application: (For unexposed duct)

- Clean the surface of duct and apply coat of Black Japan paint of approved make applied @ 7 Sq.mt./Kg.
- Fix the insulation material of required thickness before adhesive dries up. All longitudinal joint will have an overlap of minimum 50 mm followed by covering firmly by 75 mm width aluminium sticking tape to seal all transverse & longitudinal joints.

Where the duct is exposed to atmosphere material shall be same as for ducts not exposed to Atmosphere but without aluminium foil.

Application: (For exposed duct)

- a. Cleaning the surface of ducts with wire brush to remove dirt, rust etc.
- b. Applying a coat of adhesive.
- c. Fixing the expanded polystyrene insulation.
- d. Cover the insulation with 2 nos. polystyrene shall 500g and seal the joint with black Japan.
- e. Fixing 24 x 3/4" Hexagonal wire netting tied with G.I. wire.
- f. Finally applying sand cement plaster in ratio 1:3 in two layers each 10mm thick.
- g. Paint it to required colour with brush.

1.3 Duct Lining:

- Clean the inner surface of duct which is to be lined with wire brush to remove the dirt.
- Fixing 25 mm x 25 mm/50 mm GI frame work of 22-gauge 600mm distance screwed with the duct and making size as per requirement.
- Apply a cold setting adhesive compound over the frame/duct.
- The adhesive shall be non-flammable vapor proof, odourless type.
- Fixing insulation material of specified thickness overlapped with R P Tissue paper over it and then covering the material with 24 gauge perforated aluminium sheet & should have 2-3 mm dia perforation at 3 to 4 mm centre to centre distance with the help of self-tapping screws and shall be neatly finished to give true surface finish.

PRICE BID

**INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING AND ALLIED
WORKS FOR UTTAR PRADESH GRAMIN BANK (U.P)**