



BANK OF BARODA
WADIA COLLEGE BRANCH,
PUNE

T E N D E R
ELECTRICAL WORK
(existing branch)

Satyajit Rane & Associates,
Architects & Designers,
1076/24
Old Chaturringi Road,
Pune 411 016
M:9890084268

**Mandatory information required for Prequalification of the bidder for
Electrical work for WADIA COLLEGE BRANCH, PUNE**

- 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 2 :

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 :

Registration number and date with Registrar of
Companies/Firms :

PAN Card Number :

GST Number :

Request copies of the Balance sheet :

Current solvency certificate from your Banker for
not less than Rs. Five Lacs :

Attach copy.

Empanelment with the other Companies/PSUs

Field of activities :

Main Activity :

Value of the total work done till date :

List particulars of minimum **5** successfully
completed works during last three years
amounting to Rs. Five lacs or more

**SUBMITT RELEVANT WORKORDERS AND
CLIENT COMPLETION CERTIFICATE:**

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 Bank
of Baroda or its subsidiaries? :

Have you been ever disqualified or levied penalty

by the Bank in past for non fulfillment of the contractual obligations. If yes, please provide details in brief. :

Have you been ever been put on a holiday list or banned by any Public Sector Units? If yes please provide details in brief

PAN NO

GST NO

MSEB License no

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:

- NOTICE INVITING TENDER
- FORM OF TENDER
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GC electrical
3 • LIST OF NOMINATED MATERIALS & SUPPLIERS

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NOTICE INVITING TENDER

Dear Sirs,

Sub: Electrical work for Bank of Baroda, **WADIA COLLEGE BRANCH, PUNE**

Bank of Baroda invites tenders, in duplicate, for the aforesaid work.

Tender copies will be available for free download from the website of Bank of Baroda <http://www.bankofbaroda.com/tenders/asp> from 29.10.18

The tenders may be submitted in the following manner:

Envelope No. 1(Tender Fee and EMD):

	Favoring	Amount Rs.	DD/Banker's Cheque payable at
Tender fee	NIL	NIL	NIL
EMD	Bank of Baroda	10,000/-	Pune

2.The Tenderer must also submit the Mandatory Information **strictly in Bank's prescribed proforma**. 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/Consultant/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 proforma)

- Other supporting documents & credentials of the tenderer.

Must not contain any commercial information. Any Commercial discloser in the Envelop no. 1 and/or 2 will disqualify the tenderer without any further scrutiny.

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

Envelope No. 3 (Com

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

Sealed tenders, in **duplicate** in the prescribed tender form, with the tender fees and EMD, alongwith the Mandatory Information etc. and commercial bid (Envelope 1,2 and 3), should be addressed to Regional office, Bank of Baroda, Sharada Centre Khiare Path Erandvana Pune 411004 and super scribed "**Tender for Electrical Works for WADIA COLLEGE BRANCH, PUNE,**"

Tenders should be submitted to the office **not later than 1500 Hrs. on 19.11.18**

(AS MENTIONED ON THE WEBSITE)

Defect Liability and free maintenance period shall be twelve months from the date of virtual completion of the works.

Validity of offer shall be 120 days from the date of opening of the tender. The Bank does not bind itself to accept the lowest or any tender and reserves to itself the right to accept or reject any or all tenders, either in whole or in part, without assigning any reason for doing so.

Thank you,

Yours truly,
Satyajit Rane
Architect
CA/91/13659

FORM OF TENDER

To,
Bank of Baroda,
Regional Office,
Sharada Centre,
Khilare Path,
Erandvana,
Pune 411004,

Dear Sirs,

Ref: Electrical works for Bank of Baroda, WADIA COLLEGE BRANCH, PUNE

Having examined the plans, specifications and schedule of quantities prepared by your Architect, M/s Satyajit Rane & Associates, 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. 10,000/- (Rupees ten Thousand only) by Demand Draft or Banker's Cheque drawn in favour of Bank of Baroda 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. 10,000/- (Rupees Ten Thousand 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 Sales Tax, Works Contract Tax, Excise Tax, Octroi, VAT, Duties, 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.

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 Bank of Baroda may award Contracts for Interior to more than one Contractors and that I/we shall make no claims whatsoever if Bank of Baroda accept only a part of my/our tender. We unconditionally agree to Bank of Baroda'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 or during the course of the work, or in case of withdrawal of offer by us after having been awarded the contract, Bank reserves the right to terminate my contract and forfeit the Earnest money 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. Ten Thousand- towards Earnest Money deposit in envelope No. 1.

I/we agree to keep our tender open for 120 days from the date of opening of envelope No. 2 i.e. (Technical bid). Any Commercial discloser in the Envelop 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:

1.0 Location:

- 1.1 The site is located at Bank of Baroda, WADIA COLLEGE BRANCH, PUNE.
- 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 or not he actually inspects them.

2.0 Submission of Tender:

- 2.1.1 Tender in duplicate must be submitted in original to the Regional office, Sharada Centre, Khilare Path Pune 411004 and as per details given hereunder. The rates shall be filled in the Schedule given in, of the tender document.

In case of any queries, the Tenderer may contact Architect Satyajit Rane Mobile: 9890084268

- 2.2 The tender in **duplicate** 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 initialed:

All signatures in tender documents shall be dated and stamped. All pages of tender documents shall be initialed 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.

3.0 Information required along with tender:

The following details are required to be submitted along with tender:

- a) List of Sub contractors to be employed.
 - b) List of equipment proposed to be deployed for work.
 - c) Site Organization chart with bio-data of Resident Engineer and key personnel proposed to be deployed at site.
 - d) Income Tax Clearance and Sales Tax clearance certificates.
 - e) Power of Attorney in the name of persons who has signed the tender document.
 - f) Programme of work.
 - g) 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.
- 4.0 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.

5.0 Transfer of Tender Documents:

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

6.0 Earnest money:

- 6.1 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 Bank of Baroda, at Regional office along with tender. 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.
- 6.2 The Earnest Money of the unsuccessful Tenderers will be refunded within a reasonable period of time without any interest.
- 6.3 The Earnest Money deposited by the successful Tenderer shall be retained as part of Security Deposit.
- 6.4 The Security Deposit shall be forfeited if the Contractor fails to observe any terms and conditions of the Contract.

7.0 Validity:

Tenders submitted by Tenderers shall remain valid for acceptance for a period up to 120 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.

8.0 Addenda:

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

8.2 Each addendum issued by the Architect/Interior Designer will be distributed to each person or organization to whom 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.

9.0 Right to accept or reject tender:

9.1 The acceptance of a tender will rest with the Bank who do 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.

9.2 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.

10.0 Rates:

10.1 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 sales tax 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.

10.2 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.

10.3 The rate quoted in the tender by the contractor should include cost of 3 sets of 10" x 12" photographs done by a reputed professional photographer, of the completed work.

10.4 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.

10.5 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.

11 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.

- 12 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.
- 13 The Tenderer shall guarantee that the work shall conform to the detailed specifications.
- 14 Before handing over the interior, 6 copies shall be furnished to the Bank along with 6 sets of "as built" drawings of all the works done as executed by the contractor. In addition to hard copy of as built drawings, the contractor shall also supply a computer floppy containing these drawings in a digital form (done with AutoCAD - 2002 or above version) similarly the operation and maintenance manual etc. shall also be supplied in a floppy with suitable indexing format for easy retrieval and reference.

15. Signing of the contract:

- a. The successful Tenderer shall be required to execute an agreement in the proforma attached with this tender document within 10 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.
 - b. 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.
- 16. 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.
 - 17. 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.
 - 18. 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.
 - 19. 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.
 - 20. 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: _____

Tender Information

APPENDIX TO GENERAL CONDITIONS OF CONTRACT

*11	Nature of Work	Electrical Work
*12	Name of the Branch	WADIA COLLEGE BRANCH, PUNE
*13	Address of the branch	WADIA COLLEGE BRANCH, DHOLE PATIL ROAD PUNE Satyajit Rane & Associates Architects & Designers
*14	Name of the Architect	
*15	Address with Phone & fax No.	1076/24 Old Chaturringi Road, Pune 411016 Ph : 9890084268.
*16	Email	satyarch@rediffmail.com
*17	Name & Address of Consultants	
	<u>For submission of tender :-</u>	
	Name of the Regional Office	Bank of Baroda, Pune Regional Office Sharada Centre, Khilare Path, Off Karve Road, Pune 411004
*18	Address	
*19	Phone / fax nos	25431750 fax- 25455101
*20	Email	
*21	Date of Tender	29.10.18
	Last date of submission	19.11.18 BEFORE 3.0 P.M
*23	Date of opening of Tender	
*24		
*25	Draft / Banker's Cheque payable at Earnest Money Deposit (in figures)	nil Rs 10,000/- (Ten thousand) in D.D of banker's cheque payable at Pune.
*26		
*29	Mobilization Period	Within 3 days from the date of work order.
*30	Date of Commencement of work on site	Within 3 days after issue of work order
31	Completion Period	Within 15 Days after issue of work order
32	Date of virtual completion	As mentioned in of work order
34	Security Deposit	10% of amount from running bill <i>5% of total amount certified from final bill till completion of defecta liability period.</i>
35	Retention Money	
36	Defects Liability Period	12 months after completion of virtual completion.
37	Liquidated Damages for Delay	Rs 1000 per day subject to 10% of contract value.
38	Period of Final Measurement	1 month
39	Frequency of Interim Bills	NO RUNNING BILL SHALL BE PAID.
40	Value of Interim Certificate	NO RUNNING BILL SHALL BE PAID.
41	Period of honoring Interim Certificate	15 working days
42	Rate of Interest for delayed payments	As per prevalent Prime Lending Rate (PLR)

TO BE STAMPED AS AN AGREEMENT
(Cost to be borne by the Contractor)

ARTICLES OF AGREEMENT

ARTICLES OF AGREEMENT made at Pune on the _____ 20__ between **BANK OF BARODA**, a body corporate having its Head office at Mandvi, Baroda and Central Office at C-26, G-Block, Bandra Kurla Complex, Bandra (E), Mumbai-400 051.

(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.

WHEREAS

1. **The Bank** is desirous of carrying out Electrical works for their proposed Bank of Baroda, Mahad branch . (hereinafter referred to as the said **site**) and the said complex as is more fully described in the layout drawings and for the purpose, the parties hereto have agreed to enter into this contract (hereinafter referred to as the contract).
2. **The Bank** has for the purpose, arranged drawings and specifications, describing the works to be done: prepared by Satyajit Rane & Associates, its Architect/Interior Designer/Consultant/Consultants having office at 1076/24, Old Chaturringi Road, Pune 411016.
3. The said drawings have been signed by or on behalf of the parties.
4. **The Contractor** has agreed to execute the said works viz. Electrical 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 condition shall mean **Architect/Interior Designer/Consultant** for the Interiors and Furnishing of said office complex viz. M/s. Satyajit Rane & Associates. Interiors for the office complex 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 Bank reserves to themselves 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 as mentioned in 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 as mentioned in work order.
10. All disputes arising out of or in any way connected with this contract shall be deemed to have arisen at Pune and only courts in Pune shall have jurisdiction to determine the same.
11. This contract shall be signed in quadruplicate, the original whereof 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 for BANK OF BARODA, 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) _____

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

(1) _____

Electrical Works
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8.1.2	<u>Assignment or Subletting</u>
8.1.3	<u>Obtaining information</u>
8.1.4	<u>The setting Out</u>
8.1.5	<u>Performance</u>
8.1.6	<u>Execution of Work</u>
	<u>SITE MANAGEMENT</u>
8.1.7	<u>Contractor to provide everything necessary</u>
8.1.8	<u>Facilities to other contractors</u>
8.1.9	<u>Stores at site</u>
8.1.10	<u>Electric power for installation</u>
8.1.11	<u>General conditions of supply of materials for executing interior flooring work</u>
8.1.12	<u>Removal of all offensive matters</u>
8.1.13	<u>unfixed materials</u>
8.1.14	<u>Removal of improper work & materials</u>
8.1.15	<u>Clearing the site of works</u>
8.1.16	<u>Occupation of partially completed works by the Bank</u>
8.1.17	<u>Preparation for occupation & use on completion</u>
8.1.18	<u>Keeping the areas and access roads clean</u>
8.1.19	<u>Covering up of works</u>
8.1.20	<u>Measurements to be recorded before work is covered -up</u>
8.1.21	<u>Site Survey</u>
8.1.22	<u>Labour Hutments</u>
8.2	<u>STAFF MANAGEMENT</u>
8.2.1	<u>Information to be supplied by the contractor</u>
8.2.2	<u>Appointment of Engineers</u>
8.2.3	<u>Site engineer</u>
8.2.4	<u>Contractor's superintendence & Representation on works</u>
8.2.5	<u>Dismissal of workmen</u>
8.2.6	<u>Other persons engaged by bank</u>
8.3	<u>SAFETY MANAGEMENT</u>
8.3.1	<u>Reporting of Accidents to Labour</u>
8.3.3	<u>Safety Codes</u>
8.3.4	<u>Other Safety measures</u>
8.3.5	<u>Personal Safety Equipments</u>
8.3.6	<u>Hoisting Machines</u>
8.4	<u>RISK MANAGEMENT</u>
8.4.1	<u>Work performed at Contractor's Risk</u>
8.4.2	<u>Contractor's liability & insurance</u>
9.0	<u>FAILURE OF PERFORMANCE</u>
9.1.1	<u>Damages for non-completion</u>

9.2.1	<u>Failure by contractor to comply with Consultant's instruction</u>
7.4	<u>Suspension of works</u>
9.3.1	<u>Determination of contract</u>
9.4.1	<u>Notices</u>
9.5.1	<u>Termination of contract by bank</u>
9.6.1/2	<u>Termination of contract by contractor</u>
9.7.1/2	<u>Foreclosure of contract in full or part</u>
10.0	<u>COMPLIANCE</u>
10.1	<u>COMPLIANCE TO BANK'S/ LEGAL NORMS</u>
10.1.1	<u>Notices</u>
10.1.2	<u>Authorities, notices, patents, Rights & Royalties</u>
10.1.3	<u>Notice to local bodies</u>
10.1.4	<u>Municipal Regulations</u>
10.1.5	<u>Wages of labour employed by the contractor</u>
10.1.6	<u>Display of Notices</u>
10.1.7	<u>Insurance Policies</u>
10.1.8	<u>Indebtedness & lien</u>
10.1.9	<u>Indian Standards code</u>
10.1.10	<u>Treasure Trove</u>
10.1.11	<u>Technical Audit</u>
11.00	<u>ROLE OF ARCHITECT/CONSULTANT</u>
11.2	<u>To Define Terms & Explain Plans</u>
11.3.1/2	<u>Matter to be finally determined by the Architect/interior Designer</u>
11.4.1	<u>Typographical or Clerical errors</u>
11.5	<u>Site visits</u>
11.6	<u>Address for service</u>
11.7	<u>Taking over</u>
11.8	<u>DISPUTES</u>
11.8.1/2	<u>Settlement of Dispute by Arbitration</u>
11.8.3	<u>Arbitration</u>
11.8.4	<u>Legal</u>
11.8.5	<u>Work to be continued during the pendency of the arbitration</u>

THE CONDITIONS OF CONTRACT

1. GENERAL CONDITIONS OF CONTRACT

- 1.1.** In construing 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 "Bank of Baroda" with its Corporate Office at C-26, G-Block, Bandra Kurla Complex, Bandra (E), Mumbai. - 400 051 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 electric works shall mean the Consultants named in the Tender, retained by the Architect to design the total Electrical 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 there of 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 thereupon.
- 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 fulfillment 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. 'Instruction' 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 **Bank of Baroda** 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 Bank Draft/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.
- 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 retention amount (i.e. 5% of the total completion cost including all variations) will be released.
- d) The Balance 50% of retention amount will be released upon completion of 1 calendar year from the date of acceptance of Virtual Completion 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 programmed 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 three 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 honored, 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 Bank of Baroda in connection with the Electrical works. 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 Electrical works, 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 - 2004 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.

4.3. 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.

4.4. MATERIALS & WORKS

4.4.1. **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.

4.4.2. **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.

4.4.3. **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 anything 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, Sub-works etc.

6. **COST CONTROL**

6.1. **QUANTITIES**

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 Electrical 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 favor 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 Sub-contractor 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 Proforma 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 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 retention amount 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 Item No.	Brief Description	Qty Unit	Rate/unit	Qty Unit	Qty Unit	Amt. Rs. /Unit	

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 prorata 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.

l) Delayed Payment :

Any amounts payable by the Bank to the Contractor in pursuance of any Certificate given by the Architect hereunder shall if not paid within the "Period of honoring certificates" named in the Appendix carry interest at the rate named in the Appendix as the "Rate of interest for delayed payment" from the date upon which such sum ought to have been paid by the Bank, until payment.

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 whatsoever 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. 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) Various milestones to be achieved.
- 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 as complete until the **Architect/Consultant** have 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 neighboring 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 endeavors 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.

b)

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 fulfillment 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 work shall from time to time be inspected by the Bank and/or its representatives 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 Electrical works execution practice and essential to the work, are to be included in the Contract. Rates quoted in the Schedules shall be inclusive of all freights, taxes, such as Octroi, Sales Tax, Excise Tax, Work Contract Tax, Royalties, VAT 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.
- 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.

GENERAL CONDITIONS OF SUPPLY OF MATERIALS FOR

8.1.11. 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.

8.1.12. 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.

8.1.13. 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 Contractor's 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.

8.1.14. 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**.

8.1.15. 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.

8.1.16. **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**.

8.1.17. **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.

8.1.18. **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.

8.1.19. **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.

8.1.20. **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.

8.1.21. **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.

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 non-compliance 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, an insurance shall be taken by the Contractor /Sub-Contractor. Such insurance shall be taken to include both 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 premia 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 One 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 premia for keeping the policies valid till the works are completed and handed over to Bank.
- g) The Contractor shall ensure that similar insurance policies 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 or premia, 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, Neighboring 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 installment, 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 at 1% of Contract value 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.

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

- 9.2.1. 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..

9.3. DETERMINATION OF CONTRACT:

- 9.3.1. 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.

9.4. NOTICES:

9.4.1.

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.

9.5. TERMINATION OF CONTRACT BY THE BANK

9.5.1.

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 fulfill 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.

9.6. TERMINATION OF THE CONTRACT BY THE CONTRACTOR:

- 9.6.1. 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 thirty 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.

- 9.6.2. 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".

9.7. FORECLOSURE OF CONTRACT IN FULL OR IN PART:

- 9.7.1. 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.
- 9.7.2. 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, trade marks 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 **Municipal Authorities** 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 authorized 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 themselves 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 fulfill 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 Electrical 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

Head - Premises Re-engineering.
Bank of Baroda,
Baroda Corporate Centre,
C-26,G-Block,Bandra Kurla Complex,Bandra (E)
Mumbai.-400 051

Address for the Architect

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

Address for the Consultants

Name and Address of the Consultants are 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 Electrical works 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 thirty 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 thirty 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 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 Mumbai. and only Courts in Mumbai. 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 eight 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	3 Day from the date of Work Order
B	Date of Commencement of work on site	3 days after the date of Work order
C	Completion Period	<i>30 days from date of commencement</i>
D	Date of virtual completion	As mentioned in work order.
E	Earnest Money Deposit	To be paid by Demand Draft or Banker's Cheque favouring Bank of Baroda payable at the place of the Regional Office.
F	Security Deposit	@2% of Contract Value refundable on Virtual completion.
G	Retention Money	<i>8% of the payment</i>
H	Defects Liability Period	12 calendar months from Virtual Completion
J	Liquidated Damages for Delay	Rs 15,000/- per week subject to 10% of contract value.
K	Period of Final Measurement	1 month
L	Frequency of Interim Bills	Fifteen Days.
M	Value of Interim Certificate	Min 50% of contract value.
N	Period of honoring Interim Certificate	15 working days.
P	Rate of Interest for delayed payments	As per prevalent Prime Lending Rate (PLR)

Signature of Contractors:

Witness:

The Contractor will be expected to submit, along with Interim Bills, "Proforma 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 "Proforma B" duly completed.

PROFORMA A

DEVIATIONS (INTERIM)

Name of Work:

Interim Bill No.:

		Tender Provision Rs	Actual Amount Rs	Excess(+) / Savings(-)	Remarks
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				
Net Excess / Saving				

PROFORMA C

CONTRACTORS' LIABILITY AND INSURANCE SUMMARY

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

a)

b)

c)

Damage, loss or injury to any property of the Bank or Consultant or his agents and servants	Claims under the Workman compensation Act 1923, the Minimum Wages Act 194_ & Contract Labour (Regulation & 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 of 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 good 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

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 Octroi, Sales tax, Work Contract Tax, 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, equipments, 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 Electrical 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, obligations 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 Electrical 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 equipments 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 works 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 tendency of the contract.

Contractor shall indemnify the Owner from all claims relating to the workers/ staff/ sub-contractors, 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.

all necessary works like staging, ladders, platforms, double staging etc. all are required for proper

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 doorjambes 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.

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.

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 includes 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 contractors 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.

TECHNICAL SPECIFICATIONS

101	REFERENCE DRAWINGS
102	MAKES OF MATERIAL
103	CABLING
104	MV SWITCHGEAR
105	EARTHING
106	DISTRIBUTION BOARDS
107	WIRING INSTALLATION
108	LIGHT FITTINGS & FANS
109	LOW VOLTAGE INSTALLATION
200	COMMERCIAL OFFER
201	OFFER
202	PRICE SUMMARY & SCHEDULE OF WORK

2103 REFERENCE DRAWING

1.0 SCOPE

1.1 The scope under this section covers the basic drawings and details to understand.

- a) Scope of work
- b) Location of equipments
- c) General idea on the entire installation
- d) Material requirements and labour force required for the completion of work in the stipulated time schedule.

1.2 The reference drawings are basically schematic/diagrammatic to give idea on general requirements prepared on the basis of preliminary requirements and data available. They are subject to undergo changes and modifications subject to the finalization of details and requirements of the clients.

1.3 The detailed working drawings and the drawings required for the submission to statutory authorities shall be the responsibility of the contractor. Contractor shall submit minimum four copies of the drawings to the Consultants for their scrutiny/approval before issuing to the statutory authorities and site for execution.

2.0 LIST OF DRAWINGS

2.1 The following are the list of reference drawings.

SL.NO.	DRAWING NO.	TITLE
1.	1253 -A-111	Lighting Layout - Electrical
2.	1253 -A- 211	Power & LV Layout - Electrical

3.0 EXECUTION DRAWINGS

3.1 Contractor shall prepare execution drawings and equipment foundation drawings and submit for the approval of Consultants before taking up the work. Also they shall submit the panel fabrication drawings for Consultants approval before taking up the panel fabrication.

MAKES OF MATERIAL

1.0 SCOPE

1.1 **The scope of this section covers the recommended makes of material, equipments, components. The final choice of makes shall be indicated at the time of finalization of the order.**

1.2 The makes of material offered by the contractor shall be indicated at the space provided for proper evaluation of the offer and shall be one of the recommended makes. In the absence of such indication, the decision rests with the Consultants/Clients.

2.0 MAKES RECOMMENDED

2.1 The makes of material recommended are as shown below. The offers shall be strictly on the basis of the makes indicated . However, the bidders can offer alternative makes. Such deviation shall follow with technical literature of the material/equipment offered.Make/Model no./Catalogue no. of all major items such as transformer, HT Switchgear, MV switchgear, DBs, cables, wires, light fittings etc. shall be indicated separately by the contractor for the proper technical evaluation of offers.

SL NO.	ITEMS	MAKES RECOMMENDED	MAKES OFFERED
1.0	<u>MV SWITCHGEAR</u>		
1.1	MCCB	ABB, Siemens, Merlin Gerin, L& T	
1.2	MCB/DB	Merlin Gerin, MDS Legrand	
1.3	ELCB/RCCB	MDS, Merlin Gerin,	
1.4	HRC fuses	Siemens, LT, ABB, Merlin Gerin	
1.5	Starters and contactors	Siemens, ABB, Merlin Gerin, Ducati, Epcos	
1.8	Panel fabrication	To CPRI specs.	

2.0	<u>AUXILIARY EQUIPMENTS</u>		
2.1	Relays (OL & EF)	EE, SEGC, ABB, Syntron	
2.2	PF Relay	Epcos, Ducati, Bauluk	
2.3	Timer	Protime, L&T, MDS	
2.4	Energy meter	Enercon, Krycard, AE, Socomec	
2.5	Indicating meter	AE, MECCO, Socomec, Enercon	
2.6	Control fuses	EE, Siemens, Merlin Gerin	
2.7	Signal lamps	Preciessa (Solid state) Teknic, Raas, Siemens, Vinay (LED)	
2.8	Push buttons	Siemens, BCH, Teknic, Rass	
2.9	Connectors	WAGO, Connect-Well, Jainson	
2.10	Current/Voltage transformers	Kappa, SEGC, AE, Indcoil	
2.11	Capacitor	Momya, Khatau, Crompton, Aswani, Meher, Ducati, Epcos	

3.0	<u>CABLING</u>		
3.1	Cables	Finolex	
3.2	Glands	Commet, Braco, Dowels Siemens	
3.3	Lugs	Dowel, Ismal, Jainson	
4.0	<u>Wiring</u>		
4.1	PVC conduit	Precision Plastic Industries ,	
4.2	Wires	Finolex	
4.3	Switches & Socket	Clipsal Zeno	
4.4	MS Accessories & Accessories	BEC, VIMCO, BI, NIC	
5.0	<u>LIGHT FITTINGS & FANS</u>		
5.1	Light fittings	As per BOQ	

5.2	Ceiling fans	Usha, Crompton, Khaitan, Bajaj	
5.3	Exhaust fans (Heavy duty)	GEC, Crompton, Khaitan	
6.0	<u>LOW VOLTAGE SYSTEM</u>		
6.1	TV cable	Finolex or equivalent	
6.2	Speaker	Philips,	
6.3	BG&Hooter, detectors, Panels	TAC/Fire Dept., U/L approved make	
6.4	Access control	HID, Honeywell , Cardex	
6.5	Telephone cables	Finolex/Delton	
6.6	Tag blocks	Krone	
6.7	Data/Voice cable, I/O	Avaya, Molex, Panduit, AMP,	

103 CABLING

1.0 SCOPE

1.1 The scope under this section covers the following :

- A) Power cables HV and LV
- B) Control cables

2.0 STANDARDS

2.1 The following standards shall be applicable :

- A) IS : 1753 : Specification for Aluminium conductors for insulated cables
- B) IS : 2982 : Specification for copper conductors in insulated cables
- C) IS : 5831 : Specification for PVC insulated and sheath of electric cables
- D) IS : 6474 : Polythelene insulation and sheath of electric cables
- E) IS : 3975 : Specification for mild steel wires, strips and tapes for armoring of cables
- F) IS : 692 : Paper insulated lead-sheathed cables for electricity supply
- G) IS : 694 : PVC insulated cables
- H) IS : 1554 : PVC insulated (heavy duty) electric cables
- I) IS : 4288 : PVC insulated & PVC sheathed solid Aluminium conducted cables of voltage rating not exceeding 1100 V.
- J) IS : 5755 : Mineral insulated Aluminium sheathed cable with Aluminium conductors
- K) IS : 1255 : COP for installation and maintenance of paper insulated power cables (upto and including 33 KV)
- L) IS : 7098 : Specification for cross linked polythelene insulated PVC sheathed cables
- M) IS : 5959 : Polythene insulated and PVC sheathed

- N) BS : 2004 : (heavy duty) electric cables
PVC insulated unarmored cables for electric power & lighting.
- O) IS : 6380 : Electrometric insulation and sheath of electrical cable
- P) IS : 3961 : Recommended current ratings of cables
- Q) IS : 5819 : Recommended short circuit ratings for high voltage PVC cables

3.0 GENERAL REQUIREMENTS

3.1 The cables shall be either copper or Aluminium as indicated. The HV cables shall be of paper insulated, PVC or XLPE and the M.V cables shall be of PVC or XLPE as indicated in the drawings and schedule of materials.

3.2 Power cables shall comply of the following :

- HV cables to suit the system voltage
- MV cables -1100 V grade with standard copper conductors upto and including 6 mm sq. and standard Aluminium conductors for 10 mm sq.
- Colour coded insulation
- PVC inner and outer sheathing applied for extrusion
- Steel armoring between inner and outer sheathing

3.3 Control cables shall be 600V grade multi-core copper conductor with PVC insulation, armoring and sheathing. The cable sizes shall be selected to carry the continuous full load current, with stand short circuit currents and bring the voltage drop within the specified limits.

4.0 CONDUCTORS

4.1 The copper conductors shall comply with the requirements specified in IS : 2982 and Aluminium conductor IS : 1753.

5.0 INSULATION

5.1 The type of insulation shall be as indicated in the drawing and bill of materials. The thickness of insulation shall be on the basis of insulation material, voltage and the conductor size conforming to the relevant standard specification. The cores shall be Colour coded to Indian Standard Specifications.

5.2 The XLPE cables shall be with chemically cross-linked polythene of natural unfilled compound.

5.3 The PVC insulation & sheathing shall be of high quality & conforming to the following :

- | | |
|----------------------------|-----------|
| - Volume resistivity @ 278 | 5.12 x 10 |
| - Tensile strength | 125 kg/cm |
| - Elongation | 125% |

6.0 SHEATHING

6.1 The sheathing shall be PVC and shall be before and after the armoring, the thickness of the sheathing shall be based on the conductor size and overall diameter below the sheathing.

7.0 ARMOURING

7.1 Single core cables shall be without armoring. But it insisted it shall be of magnetic material. Multi core cables shall be with armoring. The armoring for cables upto 16 mm sq. shall be galvanized wire armoured and above 25 sq.mm shall be steel strips.

8.0 INSTALLATION

8.1 Power cable laying shall strictly be as follows :

In full length without joints or splices.

- Mark the routing on drawings and at site and get it approved, if the routes are not available on drawings.
- Cable trays to be used for cables laid indoors except for single cables. The cable trays shall be of ladder type fabricated out of structural steel, GI perforated or Aluminium perforated as indicated. The cable trays shall be of adequate strength to carry the weight of cables without sagging. Structural brackets grouted in the build up trenches to support the cable such supports shall be at intervals of not less than 750 mm centers. All the structural steel work shall be finished with two coats of paint over primer.
- Spacing of cable support for self supported cables on wall, ceiling or trenches shall be as follows :

	Horizontal run	Vertical run
Upto 10 mm	350 mm	450 mm
16 to 95 mm	450 mm	500 mm
120 to 400 mm	700 mm	900 mm

- For cables laid indoors, plastic identification marks at every 20 m straight run, at bends & both ends.
- Cables laid underground shall be at a depth not less than 600 mm with sand bedding & protective bricks or tiles extending at least 100 mm on both sides. Markers to be provided above ground at bends, loops & crossing.
- Provide Hume pipes, trenches or tunnels at built-up areas & road crossings.
- Provide loops of minimum 500 mm radius at each ends.
- Cable should not be bend to a radius of not less than 20 times the diameter of the cables.
- Individual cable shall be clamped with saddle, clamp, spacer etc.
- Cables on trays shall be tied using lockable nylon ties of appropriate length.

8.2 Control cables shall be laid away from the power cables & shall be on suitable trays.

8.3 The power cable termination shall have necessary brass glands & shall be as follows :

- Pressure clamp insertion type upto 4 sq.mm
- Tinned copper termination shall be through pressure clamp insertion type lugs.

9.0 TESTING

9.1 HT & LT cables shall be tested after installation using 1000V & 500V insulation resistance tester respectively and the following readings recorded :

- Continuity on all conductors
- Insulation resistance
 - A) Between conductors
 - B) All conductors & ground

Cabling for Security & Surveillance System:

CCTV

1. From all camera point to Server room one co axial cable of Rg-6 (Polycab 75 ohm shall have compulsorily copper shielding) and one 2 core X 1.0 sq mm flexible cable polycab
2. One Rg-6 (polycab 75 ohm) and one 4 core X 1.0 sqmm shielded cable from Server room to Manager cabin where the MONITOR is placed.
3. Arrange for the 230 V Ac 5 Amp plug point in the server room where DVR will be placed and also near monitor in the manager's cabin.
4. Supply to the cc tv system from UPS.

Fire

- 1.5 X 2 core armoured cable or 1.5 X 2 core flexible cable in heavy gauge PVC conduit (cable make:Finolex or Polycab) from fire panel to zone one detectors and zone two detectors.
1.5 X 2 core armoured cable or 1.5 X 2 core flexible cable in heavy gauge PVC conduit (cable make:Finolex or Polycab) from response indicator to that particular detector.
Divide the whole areas into 2 zones. cabling in one zone has to be in multi drop style and has to terminate at the last detectors in the particular loop. Break glass is also considered as detector in the zone.
- 1.5 X 2 core armoured cable (Finolex or Polycab) from fire panel to both hooter
1.0 sq mm X 4 core flexible (Finolex or polycab) from fire panel to Panic switch in multi drop style.
1.0 sq mm X 4 core flexible (Finolex or polycab) from fire panel to Manager's cabin for the reset key switch

UPS supply point near fire panel.

Access control

- 1.0 sq mm x 4 core shielded Copper cable (preferably twisted pair) from Access panel to PC and to both the readers.
1.0 sq mm X 4 core flexible (Finolex) from access panel to Lock at the top of door frame of server room.

UPS supply point near the access panel.

Public Address / Music system

1. 2 core X 1.0 sq mm flexible cable from Manager's cabin to all speakers in multi drop fashion
2. 4 core X 1.0 sq mm flexible cable from volume control switch to that particular speaker.
3. 230 V Ac 5 Amp plug point near the music system in the Manager's cabin.

Automatic DOOR System

1. 230 V Ac 5 Amp plug point near the automatic door at the top on any one side.

IMPORTANT

Also make sure that 1.0 sq mm X 4 core flexible copper cable is drawn from fire panel to main automatic sliding door. And same cable from fire panel to Access panel to integrate all system internally.

104 MV SWITCHGEAR

1.0 SCOPE

1.1 The scope under this section covers supply and or installation, testing and commissioning of Main MV panels & switchgears.

2.0 STANDARDS

2.1 The following standards shall be applicable :

- A) IS : 3072 COP for installation & maintenance of switchgears
- B) IS : 4237 General requirements for switchgear & control gear for voltage not exceeding 1000V.
- C) IS : 375 Marking and arrangement for switchgear busbars, main connection and auxillary wiring.
- D) IS : 2147 Degree of protection provided by enclosure for low voltage switchgear & control gear.
- E) IS :139497 Specification for low voltage switchgear & control gear
- F) IS : 5987 COP for selection of switches voltage not exceeding 1000V.
- G) IS : 1818 AC isolators & earthing switches.
- H) IS : 4047 Heavy duty air break switches and composite units for air break switches and & fuses for voltage not exceeding 1000V.
- I) IS : 4064 Normal duty air break switches and composit unit for AB switches & fuses for voltage not exceeding 1000V.
- J) IS : 2607 Air break isolators for voltage not exceeding 1000V.
- K) IS : 8623 Specification for factory built assemblies of switch gears and control gears for voltage including 1100V AC & 1200 V DC.
- L) IS : 13703 HRC fuse links upto 1000V AC.
- M) IS : 3106 COP for selection, installation and maintenance of fuses voltage not exceeding 650 V.
- N) IS : 2959 AC contactors for voltage not exceeding 100V.
- O) IS : 3914 COP for selection of AC induction motor starters
- P) IS : 5124 COP for installation and maintenance of AC induction motor for voltage not exceeding 1000V.
- Q) IS : 1822 AC motor starters for voltages not exceeding 1000 V.

3.0 GENERAL REQUIREMENTS

3.1 The MV switchgear shall meet the requirements shown on the drawings. They shall be 1000 V grade suitable for the system short circuit capacity and rated current carrying capacities and shall comply the following features.

- A) Incoming & outgoing feeders.
- B) Starters and contactors
- C) Busbars and feeder connections
- D) Meters, relays indicating instruments
- E) All interconnection & wiring
- F) Sheet steel enclosure.

3.2 The switchgear shall be cubicle or industrial type as indicated on the drawings and schedule of material and shall meet the specifications of components indicated.

4.0 CUBICLE PANELS

4.1 The panel shall be fabricated out of CRCA sheet steel enclosure having combination of 14 & 16 SWG thickness, free standing, totally enclosed, extensible modular construction.

4.2 The panels shall be provided with 7 tank anticorrosive treatment. The panel shall be finished with 2 coats of approved synthetic enamel paint/powder coated over two coats of red-oxide primer, oven dried.

4.3 The panel shall be dead front, components accessible from front for maintenance, panels having depth of 800 mm and above can have accessibility. For busbars and cables from back, subject to space availability on the rear side of panels.

Independent vertical compartments for busbars, feeders and cables with sufficient clearance and accessibility for maintenance of all components and connections.

- 4.4 The cable entries shall be suitable for both top and bottom entry, unless specifically indicated otherwise.
- 4.5 Non-cubicle panels (open type) also could be used with the approval of Consultants and if indicated in the bill of material specifically.
- 4.6 Each feeder shall be totally enclosed, self sufficient with ACB/MCCB/SF unit, contactors, starters, meters, relay indicators, interlocking doors, padlocking facility, labeled terminal block, engraved plastic labels indicating feeder details.
- 4.7 Each panel shall be adequately ventilated with louvers & shall be protected with wire mesh from inside.
- 4.8 The maximum height of the operating handle/push button shall not be more than 1990 mm in the case of main panel and 1750 mm for other panels and MCC's unless specially approved by Consultants.
- 4.9 Each chamber shall be provided with concealed hinged door of not less than 14/16 G thick, machine cut opening for mounting relays, meters, PB's and indicators. The doors shall be provided with neoprene gasket of good quality. Door shall be earthed to the body of the panel.
- 4.10 Earthing of non current carrying metal parts shall be connected to the earth busbars.
- 4.11 Feeder components shall be mounted on 2.5 mm thick M.S. top & bottom plates of the cable chambers shall be removable sectionalized to mount cable glands.
- 4.12 Base frame work of minimum ISMC 75 shall be provided for all floor mounted panels and angle iron brackets for wall mounted type.

5.0 BUSBARS

- 5.1 The busbars shall be of air insulated electrolytic grade Aluminium/ copper as indicated in the drawing or schedule of material and shall comply with the following.
- A) Uniform cross section with 35 C rise above ambient and with Colour coded PVC heat shrinkable sleeves.
 - B) Branch busbars rated for 75% of aggregated capacities of the feeders connected.
 - C) Neutral busbar of size 50% of phase bars.
 - D) Earthing busbar of size similar to neutral busbar subject to a maximum of 150 sq.mm copper or 250 sq.mm Aluminium
 - E) Non hydrosopic moulded (SMC/DMC) supports to withstand thermal and dynamic short circuit loads, equivalent to 35 m VA at 415 V.

6.0 AIR CIRCUIT BREAKER

- 6.1 The air circuit breakers shall be double break, quick make, quick break, trip free horizontal draw out type and shall comply the following features .
- A) Ultimate breaking capacity (ICU) of 50-65 KA.
 - B) Rated breaking capacity (ICS) of 50 - 65 KA
 - C) Making capacity of (ICM)100-150 KA.
 - D) Anti welding, anti arc traveling silver alloy main and arcing contacts with arc chute.
 - E) Triple pole direct acting and temperature compensated over current releases suitable for discrimination with up and down stream feeders.
 - F) Serve, test isolation and maintenance position setting with locking

facility in any position.

- G) Isolation plugs, safety shutters and interlocking facility.
- H) CT operated overload and short circuit relays for all breakers with microprocessor controlled
- I) Under voltage and earth fault relays for incoming breakers, preferably microprocessor based in built.

Meters and indicators shall be provided as shown in the drawing along with BMS connectivity port, if required.

7.0 MOULDED CASE CIRCUIT BREAKERS

7.1 The MCCB's shall be of double break, quick make, quick break trip free operation shall comply the following features.

- 1) Interrupting capacities for different rating in KA at 415V, 50 Hz, 0.2 PF.
 - a) Upto 100 A. - 35 KA
 - b) Above 100 & upto 800 A - 50 KA
- 2) Non welding silver alloy main contacts and arcing contacts with arc chutes.
- 3) Inverse time instantaneous O/C, temperature, compensated adjustable and integral tripping mechanism.
- 4) Moulded, heat resistance resin bonded fiber glass or phenoltic material housing.
- 5) Under voltage and current operated earth fault releases for incoming MCCB's and earth fault releases to operate on 1 to 2A for MCCB's used at power outlets shall be provided wherever shown on the drawing.
- 6) Extended handles for MCCBs of 200A & above.
- 7) All MCCBs 250 Amps above shall have microprocessor based releases capable of sensing true RMS
- 8) All breaking capacity specified are ICS and ICS = ICU

8.0 SWITCHES AND SWITCH FUSE UNITS

8.1 The switches and SF units shall be of AC 23 duty and shall comply the following features.

- A) Quick make, quick break, double break silver alloy contacts with arcing horns of chutes.
- B) Common operating handle.
- C) Switch fuse units of combination fuse switch type with fuses on phase circuit and copper solid links for neutral circuit for TPN and DP units.
- D) Fuses shall be of min. 30 KA short circuit rates.

9.0 STARTERS

9.1 The starters for rotating machines shall be as follows unless indicated otherwise.

- A) Upto 10.0 HP Direct on line
- B) 12.5 to 40.0 HP Star Delta
- C) Above 50 HP As specified

9.2 The starters shall comply the following features.

- A) Main and auxillary contacts of required capacity with 240 V coils and 2 numbers NC and NO spare contacts each.
- B) Automatic change over for star delta with adjustable static timer.
- C) Bi-metallic over load relays and single phase prevention relays with manual reset etc.

- D) Start stop push button/auto-off-manual switch as indicated in the schedule of material.
- E) Internal wiring and accessories including CT's wherever required
- F) Indicating lamps with 2A control fuses.

10.0 AUXILLARY EQUIPMENTS

10.1 The auxillary equipments such as instrument transformers, meters, relays, indicating lamps etc. shall be as specified.

11.0 BUSDUCTS

11.1 The busducts shall be 1000 V grade totally enclosed with sheet steel having thickness of minimum 16 SWG. It shall be ventilated adequately with louver and louvers shall be covered with wire mesh from inside.

11.2 The busbars, busbar supports and sheet steel treatment shall be same as specified for the panels.

11.3 The busducts shall be provided with right angle bends wherever necessary and flexible connections at both ends.

12.0 INSTALLATION

12.1 The switchgears shall be mounted 100 mm above the floor with necessary steel frame or masonry footings.

12.2 The panels shall be thoroughly cleaned before commissioning and shall be made dust and moisture free using hot air blowers.

12.3 The panel shall be provided with two earth connection of sufficient capacity.

12.4 The busducts shall be mounted at the location shown on drawings with adequate supports. The spacing between the supports shall not be more than 1.0 meter.

12.5 The busduct shall be provided with 2 nos. earth connection terminals of sufficient capacity.

13.0 TESTING AND COMMISSIONING

13.1 The MV switchgear shall be subject to factory inspection before finishing and dispatch, unless inspection is waived.

13.2 The following test are to be carried out and necessary certificates submitted.

- A) Routine test certificates for ACB's and MCB's.
- B) Insulation resistance test with 1000V megger with all switchgear in closed position.
 - 1) Phase to phase 2.5 MEG. OHMS
 - 2) Phase to neutral 1.5 MEG. OHMS
- C) Secondary wiring and apparatus should withstand 2000 V for one minute.
- D) Meters and relay calibrated and tested through secondary injection tests. Test certificates shall be submitted.
- E) Capacitors
 - Insulation resistance of 50 M ohms. after 1 minute charge with 500 V DC.
 - To withstand 2500 V AC for 1 minute
 - Functional test for APFC relay.

105 EARTHING

1.0 SCOPE

1.1 The scope of this section shall cover the following :

- A) Earthing station
- B) Earthing conductors
- C) Earthing of equipments and installation

2.0 STANDARDS

2.1 The following standards shall be applicable :

- A) IS : 3043 COP for earthing
- B) IS : 5216 Safety procedures & practice in electrical work
- C) IS : 2309 COP for the protection of buildings and allied structures against lightning

3.0 MATERIAL

3.1 The material for earthing system shall be one of the following as indicated in the drawing and schedule of material.

Copper-Aluminium-GI

4.0 EARTHING STATION/TERMINATIONS

4.1 The earthing station shall be generally as indicated in IS : 3043 shall include :

- 600 x 600 x 3 mm copper or 600 x 600 x 12 mm GI plate for plate earthing
- 50/75 mm dia 2500 mm long perforated GI pipe for pipe earthing
- Soil treatment with alternate layers of salt and charcoal
- Masonry chamber with hinged cast iron cover, watering pipe and funnel.
- Test link

The resistance of each station should not exceed 5 ohms. The no. of earthing station shall be as shown on the drawing.

5.0 EARTHING CONDUCTORS

5.1 Earthing conductors shall be of copper, Aluminium or GI as shown in the drawing and schedule of material. Copper conductors shall be with a phosphorous content of less than 0.2% GI and Aluminium conductors buried in ground shall be provided with protective coatings and wrappings.

There shall be minimum of one earth connection to single phase loads and two numbers for three phase.

The sizes of earth conductors for equipments, switchgears etc. shall be as shown on the drawings.

6.0 CABLES

- A) Armoured Earthing of armouring at both ends
- B) Unarmored Continues bare conductor or insulated conductor along with cable.

7.0 CONDUIT WIRING

- A) Metallic & Non metallic Insulated conductor run inside the conduit

NOTE

- 1) The earth conductors for cables and conduits shall be of 50% of the phase conductor subject to a maximum of 120 sq.mm and a minimum 2.5 sq.mm copper.
- 2) The equivalent size of Aluminium and GI conductors shall be 1.4 and 3 times the copper size respectively.

8.0 INSTALLATION

- 8.1 The earth station shall be made by excavating the ground to a depth of not less than 2.5 m and the excess earth after back filling shall be removed from site. Ground with rocky strata, the depth of excavation shall be less. However, additional earthing stations or earth matting to be provided to achieve the system earthing less than one ohm.

The earth conductors shall be fixed to the wall/columns etc. at every 500 mm centers with 10 mm spacers. The total earthing system shall be mechanically and electrically connected to provide independent path to earth.

9.0 TESTING

- 9.1 The following earth resistance values shall be measured with earth megger and readings recorded.

- A) Each earthing station
- B) Earthing system as a whole
- C) Earth continuity conductors

106 DISTRIBUTION BOARDS

1.0 SCOPE

- 1.1 The scope under this section cover the sub-distribution boards and feeder pillars for lighting and power distribution.

2.0 STANDARDS

- 2.1 The following standards shall be applicable :

- | | | |
|-------|---------|--|
| A) IS | : 2607 | Air break isolators for voltages not exceeding 1000 V. |
| B) IS | : 13032 | Enclosed distribution fuse boards and cutouts for voltages not exceeding 1000 V. |
| C) IS | : 2086 | Carrier and base used in rewirable type electric fuses upto 650V. |
| D) IS | : 3106 | COP for selection, installation and maintenance of fuses- voltage not exceeding 650 V. |
| E) IS | : 5039 | Distribution pillars for voltage not exceeding 1000 V. |
| F) IS | : 8828} | Miniature circuit breaker. |
| IEC | : 898} | |

3.0 GENERAL REQUIREMENTS

- 3.1 The distribution boards shall be complete with :

- Sheet steel enclosure of 16 SWG suitable for recessed semi-recessed or surface mounting or of thermoplastic/ABS body.
- Electrolytic grade copper, busbars, incoming and outgoing feeders
- Earthing terminals
- Circuit diagram indicating load distribution on the inside cover
- Weather proof enclosure and canopy for outdoor DB's and feeder pillar.
- Double door vertical or horizontal.

4.0 ENCLOSURE & FABRICATION

4.1 The fabrication of the enclosure shall comply the following.

- 16 SWG sheet enclosure with circular knock-outs
 - Wire race for individual phases.
 - Phase barriers of insulating material for three phase DB's
 - 2 nos. earthing terminals with lug type connection
- 4.2 Wherever wiring is with 3C -flexible wires, minimum space of 150 mm shall be provided between MCB & enclosure all around as well as between MCBs of different phase.

5.0 CORROSION TREATMENT

5.1 Sheet steel work shall be provided with 7 tank anticorrosive treatment. The panel shall be finished with 2 coats of approved synthetic enamel paint over two coats of red-oxide primer, oven dried.

6.0 BUSBARS

6.1 The busbars shall be as follows :

- The electrolytic grade copper bar suitable for incoming feeder with current carrying capacity of min. 800A/sq. inch.
- Individual phase and neutral bars located in respective phase cubicle for three phase DB's.

7.0 MINIATURE CIRCUIT BREAKERS

7.1 The MCB's shall comply the following feature :

- Short circuit capacity of minimum 9 KA
- Quick make, quick break, non welding silver alloy contacts suitable for manual and automatic operation
- Inverse time over load and instantaneous short circuit tripping mechanism with trip free operation.
- Common operating handle and integral tripping for multipole MCB
- Pressure clamp terminals for users upto 4 mm sq. and bolted lugs for higher rating.
- Phenol formaldehyde moulded enclosure.
- B curve for lighting d curve for UPS supply & c curve for motor duty (AC etc.).

8.0 FUSES

8.1 The fuses shall comply the following features :

- HRC link type with carriers
- Short circuit rating of minimum 25 KA
- Pressure clamp terminals for wires upto 4 mm sq. and bolted lugs for higher rating.

9.0 INSTALLATION & TESTING

9.1 The distribution boards shall be mounted on necessary angle crow frame work.

9.2 Insulation resistance shall be tested with 1000V megger and the values should be as shown below :

- Between phases : 2.5 megohms
- Between phases & neutral : 1.5 megohms

107 WIRING INSTALLATION

1.0 SCOPE

1.1 The scope under this section covers wiring installation consisting of :

- A) Lighting circuit
- B) Power circuit
- C) Equipment & machinery
- D) Low voltage installation

2.0 STANDARDS

- A) IS : 732 COP for electrical wiring installation (system voltage not exceeding 650 V)
- B) IS : 1646 COP for fire safety for buildings (General) electrical installation
- C) IS : 5216 Guide for safety procedures & practice in electric work.
- D) IS : 4648 Guide for electrical layouts on residential buildings
- E) IS : 302 General & safety requirements for light electrical appliances
- F) IS : 9537 Specification of conduits for electrical installation
- G) IS : 1653 Rigid steel conduits for electrical wiring.
- H) IS : 2509 Rigid non metallic conduits for electrical installation
- I) IS : 3480 Flexible steel conduits for electrical wiring
- J) IS : 3667 Fittings for rigid steel conduits for electrical wiring
- K) IS : 3837 Accessories for rigid steel conduits for electrical (wiring)
- L) IS : 6946 Flexible (pliable) non-metallic conduits for electrical installation.
- M) IS : 3419 Fittings for rigid steel conduits for electrical wiring
- N) IS : 694 PVC insulated wires
- O) IS : 8130 Conductors for insulated electric cables & flexible cords
- P) IS : 5133 Boxes for enclosures of electrical accessories
- Q) IS : 2148 Flame proof enclosure for electrical apparatus
- R) IS : 1293 3 pin plugs and sockets
- S) IS : 4705 Switch socket outlet (non-inter locking type)
- T) IS : 5561 Electrical power connectors
- U) IS : 2004 PVC insulated wires

3.0 CONDUIT WIRES

3.1 Conduit wiring shall be from LDB, PDB, panels, MCC or isolators as indicated and shall be complete with :

- Conduit & accessories
- Wires & interconnections
- Control switches & sockets
- Outlet boxes with terminal connectors & earthing

4.0 NON-METALLIC CONDUITS

4.1 Non-metallic conduits shall be heavy/medium gauge PVC as specified in schedule of work as per IS : 9537 with following dimensions subject to tolerances. All accessories shall also be of the same material.

	NOM. DIA	ID	OD
1)	20 dia	15.8	20
2)	25 dia	20.6	25
3)	32 dia	26.6	32
4)	40 dia	34.4	40

5.0 METALLIC CONDUITS

5.1 All conduits & accessories shall comply the following features :

- Solid welded pipes with black enameling
- Wall thickness of
16 SWG upto 40 mm dia
14 SWG above 40 mm dia
- Conduit accessories of similar wall thickness & include bends, elbows, junction boxes, reducers, nipple, splitter coupling plugs, etc.
- Junction boxes shall be with the required number of outlets & cover 50/75 mm deep as per site conditions.
- Flexible conduits made out of continuous length of spirally wound, inter-linked strip steel with fired zinc coating on both sides.
- Flexible HDPE pipes short length of upto 500 mm may be used as adaptor for drop to the fixtures wherever false ceiling is there.

6.0 WIRES

6.1 Wires shall comply the following features :

- PVC insulated bright annealed copper stranded conductors.
- 600 V grade wires for single phase circuits and 1000 V grade for 3 phase circuits.
- Colour coded as below :

Phase - R	-	Red
Phase - Y	-	Yellow
Phase - B	-	Blue
Neutral	-	Black
Earth	-	Green or yellow/green

7.0 CONTROL SWITCHES AND SOCKETS

7.1 The control switches and sockets shall be of rated capacity and shall comply the following features :

A) CONTROL SWITCHES

- Silver contacts with shrouded current carrying terminals
- Moulded urea formaldehyde casing and cover plates

B) SOCKET OUTLETS

- Brass or copper female outlets enclosed in urea formaldehyde or porcelain casing
- Control switches & fuses
- Urea formaldehyde cover plates

C) INDUSTRIAL OUTLETS

- Brass or copper female outlet enclosed urea formaldehyde or porcelain casing.
- Aluminium alloy enclosure with cover
- Scraping in earthing terminals
- DP/TP MCB

D) OUTLET BOXES

The outlet boxes shall be factory fabricated out of machine pressed sheet steel passivated as per the switch manufacturer.

8.0 LAYING OF CONDUITS

8.1 The size of conduit shall be selected on the following basis :

Wire sq. mm	Conduit size mm dia					63
	20	25	32	40	50	
Maximum number of wires						
1.0	4	8	10	x	x	x
1.5	4	8	10	x	x	x
2.5	4	6	8	x	x	x
4	2	4	6	x	x	x
6	x	2	4	x	x	x
10	x	x	2	4	x	x
16	x	x	x	x	4	x
25	x	x	x	x	4	x
35	x	x	x	x	x	4
50	x	x	x	x	x	4

Note : x indicates not applicable

8.2 The conduit laying shall be as follows :

- On the routes indicated on the drawing or to be marked on the drawing and at site and got approved before laying.
- Conduit junction boxes/pull through boxes to be installed at spaces not more than 12 m or two 90 deg. bends, the junction boxes shall be flush with ceiling.
- Conduits to be kept 100 mm minimum from pipes and non electrical services
- Separate and colour coded conduits/runways to be used for
 - 1) Lighting circuits
 - 2) Emergency lighting circuit
 - 3) Power circuit
 - 4) Low voltage circuit
- Fixing screws to be rust proof or cheese head screws
- Conduit buried in concrete to be fastened to the reinforcement and get approved before casting the slab.
- Conduits embedded in wall to be fixed by staples at 500 mm intervals.
- Conduits embedded in floor screen to be of PVC or galvanized and painted with emulsified bitumen
- Conduits to be free from sharp edges and burrs and necessary

- PVC bushing to be provided wherever necessary.
- Outlet boxes to have minimum size of 50 x 50 x 32 mm or as per switch manufacturer's specification.
- Flexible conduits are acceptable only at machine end and for short extension to outlets (not exceeding 500 mm in false ceiling)
- Chasing the brick wall shall be done by cutters/circular discs.
- All metallic conduits and accessories shall be threaded type and given one coat of black enamel paint over a coat of red oxide paint.
- Non-metallic conduit shall be jointed using solvent specified by

exposed threads and bends shall be the conduit manufacturers.

9.0 EARTHING

9.1 Insulated earth conductors of specified size shall be taken through the conduits.

9.2 The size of earth wire shall be of size 50% of phase conductor subject to a maximum and minimum shown below :

	Copper	Aluminium	GI
Minimum (sq.mm)	1.5	2.5	4
Maximum (sq.mm)	150	175	350

9.3 All outlet boxes, switch & socket boxes, and light fitting to be earthed properly.

9.4 The switch/socket outlet shall be factory built suitable for the particular make of switch/outlet.

10.0 WIRING

10.1 The wiring in conduit shall comply the following :

- Single core PVC insulated copper Aluminium wires as specified below or as shown on drawings and schedule of material
- Wire sizes

	Copper	Aluminium
Light circuit point	1.5 sq.mm	2.5 sq.mm
Light secondary point	1.5 sq.mm	2.5 sq.mm
Power points	2.5/4.0 sq.mm	4.0 sq.mm
Machineries	According to the load current	

10.2 A maximum 3 circuits of same phase can be taken per conduit and each circuit shall have independent neutral and earth wire from DB. Jointing of wires are not permissible, however looping may be done points.

from the circuit point/secondary

10.3 Metallic/non-metallic trunking may be used if number of conduits are many. The metallic trunking shall be earthed securely at DB end and through out the length.

10.4 Single trunking with metallic partition may be used for different voltage services.

10.5 TRUNKING

Sr. No.	Cross-section (cm x cm)	No. of Compartments	Weight(kg)	Corresponding junction box dimension
1	300 x 40	3	11.61	350 x 50
2	250 x 40	3	10.20	300 x 50
3	100 x 40	1	4.50	150 x 50
4	100 x 25	1	4.20	150 x 35
5	200 x 40	1	8.80	250 x 50

Material used: Powder coated Mild Steel

11.0 TESTING

11.1 The entire installation to be tested for :

- 1) Insulation resistance
- 2) Earth continuity
- 3) Polarity of single pole switches

11.2 3 copies of test certificates shall be submitted for the approval.

108 LIGHT FITTINGS AND FANS

1.0 SCOPE

1.1 The scope of this section covers light fittings, lamps, ceiling fans and exhaust fans.

2.0 STANDARDS

2.1 The following standards shall be applicable :

- | | | | |
|-------|---|------|---|
| A) IS | : | 3646 | COP for Electrical illumination |
| B) IS | : | 1913 | General and safety requirements for electric lighting fittings. |
| C) IS | : | 7027 | Transistorized ballasts for fluorescent tubes |
| D) IS | : | 1534 | Ballasts for fluorescent lamps |
| E) IS | : | 6616 | Ballasts for HPMV lamps |
| F) IS | : | 2215 | Starters for fluorescent lamps |
| G) IS | : | 3324 | Holders for starters for tubular fluorescent lamps |
| H) IS | : | 3323 | Bipin lamp holders for tubular fluorescent lamps |
| I) IS | : | 1569 | Capacitors for electrical discharge lamps |
| J) IS | : | 2418 | Tubular fluorescent lamp for general lighting services |
| K) IS | : | 5081 | Glass tubes for fluorescent lamps |
| L) IS | : | 481 | Tungsten filament miscellaneous electric lamps |
| M) IS | : | 6701 | Tungsten filament miscellaneous electric lamps |
| N) IS | : | 2183 | Schedule of or HPSV lamps |

O) IS	: 7023	Methods for tests for HPMV lamps
P) IS	: 2147	Degree of protection provided by enclosure for low voltage switch gear and control gear
Q) IS	: 4327	General requirement for switchgear and control gear for voltages not exceeding 1000 V.
R) IS	: 374	Electrical ceiling type fan & regulators
S) IS	: 1169	Electrical pedestal type fans & regulators
T) IS	: 2997	Air circulator type electrical fan and regulators
U) IS	: 6272	Industrial cooling fans (man coolers)
V) IS	: 1709	Fixed capacitors for fans.

3.0 GENERAL REQUIREMENTS-FITTINGS

3.1 The general requirements for the light fittings shall be as follows :

- Sheet metal mounting frame and enclosure with fixing accessories
- Sheet metal white stove enameled reflector.
- Control gear such as ballast, starter and capacitor
- Lamp holder
- Diffuser and other attachments to reduce glare

3.2 The enclosure for the light fittings and other accessories shall conform to the IS : 2147 and IS : 2148 depending on the location mounting of the fittings.

3.3 The type of fittings and lamps shall be as indicated in the drawing and schedule of material.

3.4 The ballasts shall be of copper wound, open type vacuum impregnated with minimum loss, silent operation and without radio interference or electronic ballasts as indicated in the schedule of material.

3.5 The light fittings and the lamps shall be suitable for long life and shall withstand voltage variation of minimum $\pm 10\%$.

3.6 The aircraft obstruction lights shall be of neon cold cathode helix with longer life, or LED type housed inside thick glass dome.

3.7 The fittings shall be prewired with PVC insulated copper wires of adequate capacity but not less than 1.5 sq.mm copper. The light fittings shall be provided with earthing terminals.

4.0 FANS

4.1 The fans shall be driven by copper wound electrical motors housed inside cast Aluminium enclosure.

4.2 The fans shall be with double ball bearing to achieve smooth and silent operation.

4.3 The fan assembly and blades in the case of fans other than centrifugal fans shall be of cast Aluminium with properly balanced blades.

4.4 The fan shall be provided with capacitors for starting up single phase fans and to achieve better power factors for 3 phase fans.

5.0 INSTALLATION

5.1 Fans shall be mounted on pre-embedded hook. The drawing of the junction box which shall be got approved. Wherever, pre-embedded hooks are not available anchor fasteners shall be used.

5.2 The light fixtures suspended shall include two nos. down rods with ball and socket joints. For the recessed fittings, the mounting supports shall be taken from the ceiling.

6.0 TESTING AND COMMISSIONING

6.1 Fans and light fittings shall be checked for visible damages before installation and proper performance.

109 LOW VOLTAGE INSTALLATION

1.0 SCOPE

1.1 The scope under this section covers the low voltage installation consisting of :

- a) Voice/Data wiring
- b) Music wiring
- c) Television wiring
- d) Fire alarm wiring
- e) Access control system

1.2 The equipments such as EPABX, telephone instruments, Nurses call control unit etc. are excluded from the scope of this work.

2.0 STANDARDS

- 2.1 A) IS : 732 COP for electrical wiring installation (upto 650V)
- B) IS : 9537 Specification of conduits for electrical installation
- C) IS : 1653 Rigid steel conduit for electrical installation
- D) IS : 3667 Fittings for rigid steel conduits for electrical wiring
- E) ----- National Electrical Code
- F) ----- Indian Electricity Rules and Regulations
- G) BS : 5839 Fire alarm panel
- H) IS : 14131 Coaxial cables for TV

3.0 WIRING

3.1 The conduiting work for low voltage wiring shall be similar to that for electrical wiring except that there shall be no earthing conductors.

3.2 The wires and cable for different LV services shall be as shown below

- a) Voice/Data - 4 pair CAT-5e/CAT-6 UTP cable
- b) Fire alarm - 1.0 sq.mm or 1.5 sq.mm PVC insulated copper wires of 650V grade with Colour coding of brown for positive, white for negative and blue for remote indication or 2C - 40/36 shielded as per the manufacturer's instruction
- c) Music - 2C-23/36 or 2C -40/36 multicore cables, colour coded twin twisted PVC insulated copper wires
- d) TV - Co-axial PVC insulated copper conductors of wideband type with operation upto 860 MHZ capability, with PE dielectric
- e) Access Control - 10C -1.5 sq.mm between reader & controller

3.3 The tag block shall be Krone type, modular construction using non soldering/screening connectivity. The tag block shall housed in MS painted enclosure with lockable door.

3.4 The cables shall meet or exceed the following specifications

RG R Foam Series RG 11 Foam Series

IS Standard IS : 14131	5 CA4	7 CA4
a) Centre Conductor Dia	1.02 mm	1.63 mm
b) Dielectric Dia	4.57 mm	7.11 mm

c)	Dielectric material	Cellular PE	Cellular PE	
d)	Outer Dia.	7.0 mm	10.03 mm	
e)	Bending Radius	>75 mm	>115 mm	
f)	Impedance	75 ohms	75 ohms	
g)	Return loss	>23 dB	>23 dB	
h)	Attenuation at 20°C	Max.dB/100	Max.dB/100	Mtr.
	5 MHz	1.9	1.25	
	45 MHz	5.25	3.5	
	300 MHz	11.65	7.38	
	450 MHz	14.45	9.02	
	550 MHz	16.1	9.97	
	860 MHz	20.1	12.52	

4.0 SPEAKERS

4.1 The speakers/sound columns shall be of specified rating. The speakers shall be recessed or surfaced mounted type with ABS grille of approved colour and shall have line matching transformer.

4.2 The sound columns shall be surface mounted with metallic/wooden enclosure and black nylon cloth front.

4.3 Volume controls shall be continuous type, of specified ratings with off Switch.

5.0 TV TAP - OFF

5.1. These shall be of ultra wide bandwidth and of hybrid type & bi-directional suitable for Interactive TV system.

5.2 These shall have a flat frequency response over the entire operating range.

5.3 These shall have a Aluminium cast housing for high frequency radiation resistance.

5.4 The tap offs shall be available in one way, two way and four way & eight way configurations.

5.5 The tap offs shall be available in different tap values ranging from 11 dB, 15 dB, 20 dB & 30 dB to enable uniform signal balancing.

5.6 The tap offs shall meet or exceed the following specifications.

		One way	Two way	Four way
a)	Tap Loss	15-20 dB	15-20 dB	15-20 dB
b)	Through Loss	2.0-0.5 dB	2.5-1.0 dB	3-1.5 dB
c)	Isolation	>22 dB	> 22 dB	>22 dB
d)	Screening Factor	> 75 dB	> 75 dB	> 75 dB

e) Impedance 75 Ohms 75 Ohms 75 Ohms

6.0 SPLITTERS

- 6.1 These shall be of ultra wide band width (minimum 5 to 1000 MHz) and of hybrid type.
- 6.2 These shall have a flat frequency response over the entire operating range.
- 6.3 These shall have a Aluminium cast housing for high frequency radiation resistance.
- 6.4 The splitters shall be available in 2 way, 3 way & 4 way configurations.
- 6.5 The splitters shall meet or exceed the following specifications.

		2 way	3 way	4 way
a)	Through Loss	3.5 dB	6 dB	7.5 dB
b)	Isolation	>20 dB	>20 dB	>20 dB
c)	Screening Factor	>75 dB	>75 dB	>75 dB

7.0 TESTING

7.1 The entire system shall be tested for :

- a) Continuity
- b) Performance

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

Date:

Place: