



**ELECTRICAL & AIR-CONDITION WORKS FOR  
CHANDA NAGAR BRANCH (PHYGITAL), HYDERABAD.**

**TENDER DOCUMENT**

Tender Start date: 13.03.2024

Last date and time for submission of Tender: on or before 02.04.2024 at 3.00 PM.

Opening of Tender: on 02.04.2024 at 4.00PM.

Sealed tenders duly filled in should be addressed to:

**THE GENERAL MANAGER,  
BANK OF BARODA,  
ZONAL OFFICE (HYDERABAD),  
D NO.: 3-6-289, 1ST FLOOR,  
KAREEMMANZIL, OLD MLA QUARTERS,  
HYDERGUDA, HYDERABAD- 500029**

**CONSULTANTS :**



**ARCHITECTS  
FIROZ AHMED  
ARCHITECT**

**H.no:13-6-436/A/33, Lakshmi Apartment,  
2<sup>nd</sup> Floor, 301, Lakshmi nagar,**

**Pillar no.68, Mehidipatnam,  
Hyderabad – 500 028.**

TENDER SCHEDULE FOR ELECTRICAL & A.C WORKS FOR  
BANK OF BORODA **CHANDA NAGAR (PHYGITAL) BRANCH, HYDERABAD.**

Name of the Contractor to whom issued: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

**Consultants:**

**FIROZ AHMED**

ARCHITECT

H.no:13-6-436/A/33, Lakshmi Apartment,  
2<sup>nd</sup> Floor, 301, Lakshmi nagar,  
Pillar no.68, Mehidipatnam,  
Hyderabad – 500 028.

Cell: 98481 49737

Off: 9949553386

**Client:**

**The Zonal Manager,  
Bank of Baroda  
Zonal office,  
Hyderabad.**

## **TENDER NOTICE**

1. Sealed Tender on item rate basis are invited from competent INTERIOR WORKS contractors having sound technical and financial capacity for ELECTRICAL & A.C works for Bank of Baroda CHANDA NAGAR (PHYGITAL) BRANCH, HYDERABAD.
2. Issue of tender shall commence from 13.03.2024 **between 10.00 – 17.00** hours. The tender shall be submitted not later than **3.00 PM on 02.04.2024.**
3. Sealed tenders duly filled in should be addressed to:

**The General Manager,  
BANK OF BARODA, Zonal Office,  
3-6-289, 1st Floor, Kareem Manzil,  
Old MLA Quarters Road, Hyderguda,  
HYDERABAD – 500 029.**

- |  |  |
|--|--|
| 1. Estimated cost of work                | : Rs <b>24,61,234.38 Lakhs.(EXCLUDING GST)</b> |
| 2. Time of Completion                    | : <b>21 days.</b>                              |
| 3. Time and date of submission of Tender | : <b>Before 02.04.2024 (3:00pm)</b>            |
| 4. Time and date of opening of Tender    | : <b>at 02.04.2024 (4:00pm)</b>                |

The consultants / clients will not be bound to accept the lowest tender and reserves right to accept or reject any or all the tenders without assigning any reason whatsoever.

For

**FIROZ AHMED  
ARCHITECT**

H.no:13-6-436/A/33, Lakshmi Apartment,  
2<sup>nd</sup> Floor, 301, Lakshmi nagar,  
Pillar no.68, Mehidipatnam,  
Hyderabad – 500 028.  
Cell: 98481 49737  
Off: 9949553386  
E-Mail: a\_firoz@yahoo.com.

Date:

**Eligibility Criteria:**

- The tenders received after the due date and time specified or unsealed or incomplete or unsigned or by facsimile or email will be summarily rejected. The bank reserves the right to accept / reject the bids without assigning any reasons whatsoever."
- The tenderer should have done Similar works in the Public Undertaking banks and Experience of having successfully completed similar jobs i.e last -7- years(as on tender date) should be either of the following:
  1. One similar completed work each costing not less than 80% i.e. 19,68,987.50
  2. Two similar completed works each costing not less than 50% i.e. 12,30,617.19
  3. Three similar completed works each costing not less than 40% i.e. 9,84,493.75
- The tendered shall have an average annual turnover of Rs 23.7 lacs in the last three years.

" Similar work (in single completed project) shall means: Execution of interior works like false ceiling, paneling works, partitions works, electrical works and fixtures, AC works etc.

- Completion certificate should contain above words.
- Participating in the Tender deemed agreed by the contractor that he/she visited the site before quoting the rates and fully aware of the site conditions
  - Tender will have to be submit in two parts PART: '1' and PART:'2'. PART:1 is Technical bid PART:2 is Financial bid, separately super scribed, sealed and both contained in another sealed envelope, super scribed with the name & address. The tenders should be submitted to  

The General Manager,  
BANK OF BARODA, Zonal Office,  
3-6-289, 1st Floor, Kareem Manzil,  
Old MLA Quarters Road, Hyderguda,  
HYDERABAD – 500 029.
- The work is inclusive of all taxes. GST will be paid extra on the cost of completion of the work. Necessary certificates to be produced.
- The DD's shall be dated between the opening & closing dates & the amount should match as mentioned in the tender schedule.
- Tenderer office (Registered) should be located in state of A.P/ Hyderabad.(GST certificate to be submitted.

### **DETAILS OF THE CONTRACTOR**

Name of the firm/company	:	
Postal address with pin code	:	
Email Address	:	
Telephone no. office 1	:	
Telephone No. office 2	:	
Fax no.	:	
Mobile number	:	
Contact person	:	
Year of establishment	:	
Status of the firm	:	Proprietorship/ Partnership/ Pvt.Ltd/ Ltd company
Registration No	:	
Name of Proprietor/ Partners/ Directors	:	
PAN NO	:	
CST NO.	:	
GST NO.	:	
Name of Bankers	:	
Copy of Balance Sheet for last three years	:	Enclosed/Not enclosed
Date and amount of Current Solvency Certificate	:	

Issued by: Bank's name Amount	:	
EMD amount DD NO. And date and bank's name	:	
Tender fee	:	
DD No. And date and bank's name	:	
<b><u>Qualifying criteria</u></b> <u>Works done in last five years</u>	:	<div>No. of works</div> <div>Amount in lacs</div>
<b><u>Annual turnover</u></b>  <u>2019-21</u> <u>2021-22</u> <u>2022-23</u>		
Name and address of contact person for verification of work done in the past with telephone number	:	
List of Technical and other staff working for the organization	:	
Any other relevant details	:	

SIGNATURE OF AUTHORISED PERSON

NAME

DATE

**IMPORTANT INSTRUCTIONS TO THE TENDERERS:**

1. Please read all pages of the tender carefully.
2. The documents supplied to you comprises of Notice inviting Tender, Conditions of Tender, Form of Tender, Draft Articles of Agreement, General conditions of the contract, Technical Specifications, Bill of Quantities and Drawings etc.
3. Please sign in full on all pages of this document including drawings/layout etc.
4. Please submit the complete set duly filled in with signature, EMD drawings etc in two separate covers keeping Tender schedule & drawings in one cover and EMD along with your conditions, deviations, etc in another cover, both sealed separately.
5. You must quote the rates both in words and in figures.
6. Submit the Labour License
7. Submit the Labour Insurance.



## **THE CONDITIONS OF TENDER**

1. The tender form must be filled in English and all entries must be made by hand and written in ink.
2. Each and every page of the tender document must be signed by the owner of the firm or the power of attorney holder.
3. The tenders must be submitted in the prescribed format only. The tenders must quote the rates in the Schedule of Quantities, rates and amount. The rates should be written both in words and figures without any erasures and alterations. However if errors are made, the wrong figures or words must be neatly scored out under full signature of the tenderer and the correct figures and words neatly rewritten. Over writing is not permitted.
4. Errors in the schedule of quantities rates and amount shall be dealt with the following manner:
  - a) In the event of discrepancy between the rates quoted in words and the rates in figures, the Co-efficient of the total amount by the quantity shall be taken into consideration, provided the tender is not rejected.
  - b) In the event of an error occurring in the amount column as a result of wrong multiplication and extension of unit rate and quantities, the unit rate shall be regarded as firm and the amount shall be amended accordingly.
  - c) All the errors in totaling in the amount column and in carrying forward, the totals shall be corrected.
5. The quantities indicated in the schedule of quantities are only probable quantities and are liable to alteration by omission, reduction or addition. Payment shall be made on the basis of actual quantities of work done at the accepted rates.
6. No alterations which are made by the tenderer in the drawings, specifications or in probable quantities accompanying the tender will be recognized and, if such alterations are made the tender is likely to be invalidated. Remarks and explanations should be given in a separate cover along with EMD and will become binding only if specially accepted in writing by Bank at the time of acceptance of the tender.
7. The tenderer must obtain for himself on his own responsibility and at his own expenses all the information necessary for the purpose of filling this tender and to enter into a contract with Bank, he must examine the drawings, specifications conditions et., and must inspect the site of work and must acquaint himself with all local conditions and matters pertaining thereto.
8. The tenderer shall also bear all expenses in connection with the preparation and submission of this tender.

9. **EARNEST MONEY DEPOSIT (EMD):**

The tender shall deposit and amount of **Rs.24,700 /-** (Rupees Twenty four thousand seven hundred only) in the form of a DD drawn on a scheduled Bank in favor of Bank of Baroda Zonal Office at Hyderabad the time of submission of the tender as Earnest Money. Bank is not liable to pay any interest on Earnest Money.

The EMD for unsuccessful tenderers shall be refunded to them without any interest after the decision to award the work is taken. The EMD of the successful tenders shall be retained as part of Security Deposit and for the due fulfillment of the contract

10. **SECURITY DEPOSIT (SD):**

Apart from Earnest Money Deposit made as above, Security Deposit shall be deducted from running/progressive bill/s of the Contractor @ 8% of the gross value of the each bill until the total Security Deposit including EMD equals to 10% of the accepted value of the tender. Security Deposit shall not bear any interest.

11. **COMPLETION PERIOD:**

The time is the essence of Contract. The entire work shall be completed by the Contractor within 45days after the day the tender is accepted by Bank. The work is of urgent nature and the completion time schedule should be strictly adhered to by the Contractor.

12. The tenders submitted shall remain valid for acceptance for a period of 120 days (4months) from the date of their opening. Should any tenderer withdraw his tender before the expiry of the said period or makes any modification to his tender, his EMD will be forfeited and the tender declared invalid.
13. Bank does not bind itself to accept the lowest tender and reserves to himself the right to reject any or all of the tenders received without assigning of reasons thereof.
14. The tenderer whose tender is accepted shall execute a formal agreement with Bank in accordance with this draft agreement which will include the notice inviting tender, these conditions, other papers herein, special conditions, drawings and specifications etc., but his liability, under the contract shall commence from the date of the written acceptance of his tender whether the formal agreement is drawn or not.

The Contractor shall bear all expenses in connection with the execution of the said agreement including fees for stamps and registration of documents as required.

15. The compensation or other sums of money payable by the contractor to the Bank under the terms of contract maybe deducted from his EMD/SD if the amount permits and the contractor shall, unless such deposit has become otherwise payable, within ten days after such deduction make good in cash the amount so deducted.

16. The work shall be carried out under the directions and supervision of and subject to the approval in all respects by the **Consultants/Bank**.
17. On acceptance of tender the contractor shall, in writing, and at once inform Bank and the Consultants the names of his accredited representatives who will be responsible to take instructions from the Consultants/Bank.
18. The work or any part of it shall but be transferred assigned or subcontracted without the consent of Bank.
19. The contractor shall be required to co-operate and work in accordance with and afford reasonable facilities for such other agencies / Specialists as may be employed by the Consultants / Bank on other works / sub-works in connection with the work.
20. The contractor shall insure the work and keep it insured until one month after the date of taking over the works by Bank or otherwise as per the terms of the contract, against loss or damage by fire and other usual risks other than the risks accepted in the terms of the contract with an approved insurance company such as GIC.
21. The contractor is required to comply with all Acts of Govt. relating to Labor and the rules and regulation made there under from time to time and submit at the proper times all particulars and statements required to be furnished to the labor or any other statutory authorities.
22. For all the items of work executed by him, the contractor shall supply, at his own expenses, to the Consultants, copies of post card size photographs in triplicate each of the work, taken from two approved portions of each item of work at intervals of not more than one month during the progress of the work and also at every important stage of the work or as directed by the Consultants/Bank.
23. In carrying out the work the contractor shall comply with the provisions of the safety code, annexed to these papers.

## **FORM OF TENDER FOR WORKS**

To:  
The Zonal Manager,  
Bank of Baroda  
Zonal office,  
Hyderguda,  
Hyderabad – 500 001.

Dear Sir,

Having duly examined the tender documents including the drawings, specifications, designs, schedule of quantities relating to the works specified in the underwritten memorandum and having visited the site of the said work having acquired all the requisite information relating there to as affecting this tender, I/We hereby offer to execute the works specified in the underwritten memorandum within the time specified therein at the rates specified in the schedule of quantities and in accordance, in all respects with the specifications, designs, drawings and instructions in writing referred to in the conditions of the tender, the Articles of Agreement, special conditions, the schedule of quantities, and conditions of the contract and with such conditions of the contract and with such materials as are specified, by and in all other respects in accordance with such conditions in the schedule of quantities and conditions of contract so far as applicable.

Should this tender be accepted, in whole or in part, I/We hereby agree (i) to abide by and fulfill all the terms and provisions of the said conditions of the contract annexed hereto and the conditions to tender so far as applicable or in default thereof to forfeit and pay to Vijaya Bank, Hyderabad the sums of money mentioned in the said conditions.

A sum of **Rs.25,300 /-** (Rupees Twety five thousand three hundred only) is hereby forwarded as Earnest Money Deposit in the form of Demand Draft drawn in favor of Bank of Baroda Zonal Office at Hyderabad.

I/We agree (i) that should I/We fail deliver or commence the installation work specified in the above mentioned memorandum Bank shall without prejudice to any other right or remedy be at the liberty Bank towards security deposit mentioned in the above memorandum, (ii) to execute all the works referred to in the tender document upon the terms and conditions contained or referred to therein and to carry out authorized variations as directed by the Consultants/Bank and as per said conditions of the contract.

Our Bankers are:

- 1.
- 2.

The names of the proprietor/Partners/Directors of our firm are:

- 1.
- 2.
- 3.
- 4.

Signature of the tenderer with seal

Date the ..... Day of ..... 2024

## **ARTICLE OF AGREEMENT**

Articles of agreement made this the ..... day of ..... 2024 between ..... Bank of Baroda ..... Having its Zonal Office, at Hyderguda Hyderabad – 500 001, herein after called “The Employer” of the one part;

### **AND**

M/s. ....having its registered office at .....  
(Herein after “The Contractor” of the other part.)

Whereas the employer is desirous of getting the **Electrical & Air Condition Works for CHANDA NAGAR (PHYGITAL) BRANCH**, executed as schedule – I to this agreement and has annexed drawings, bills of quantities and specifications describing the work to be done as prepared by **FIROZ AHMED**, ARCHITECT, H.no:13-6 436/A/33, Lakshmi Apartment, 2nd Floor, 301, Lakshmi nagar, Pillar no.68, Mehidipatnam, Hyderabad – 500 028, Cell: 98481 49737, Off: 9949553386. between 10.0 am to 6.00 pm.

(herein after called **THE CONSULTANTS** and whereas the said drawing as per Schedule-2 inclusive, the bills of quantities marked “**BOQ**” and the specifications etc., have been signed by or on behalf of the parties hereto; and whereas the contractor has agreed to execute the work subject to the conditions set forth is Schedule-3 hereto attached (herein after to as “The Condition”), the work shown upon the said drawings and described in the said specifications and included in the said bills of quantities for the sum of Rupees.....  
.....

### **NOW IT IS HEREBY AGREED AS FOLLOWS:**

1. In consideration of the sum of Rs. .... To be paid at the time and in the manner set forth in the said conditions, the contractor will, upon and subject to the said conditions execute and complete the works shown upon the said drawings and described in the said specifications and bills of quantities.
2. The employer will pay to the contractor the said sum of Rs..... or such other sum as shall become payable hereunder at the times and in the manner specified in the said conditions.
3. The terms “The Consultants” in the said conditions shall mean **FIROZ AHMED**, ARCHITECT, or in the event of their ceasing to be the Consultants for the purposes of this contract, such other persons as shall be nominated for that purpose by the employer, not being a person to whom the contractor shall object for reasons considered to be sufficient by the Arbitrator mentioned in the said conditions. Provided always that no person subsequently appointed to be the Consultants under the contract shall be entitled to disregard or overrule any decision or approval or direction given or expressed by the Consultants for the time being.
4. The said conditions, specifications and priced bills of quantities shall be read and construed as forming part of this agreement, and the parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their parts respectively in such conditions, specifications and priced bills of quantities contained.

As witness our hand the day and year first above written signed by the said  
**EMPLOYER.**

In the presence of witnesses:

Name:	Name:
Occupation:	Occupation:
Address:	Address:
Signed by the said Contractor(s):	

In the presence of Witnesses:

Name:	Name:
Occupation:	Occupation:
Address:	Address:

### **CONDITIONS OF CONTRACT**

#### 1. Interpretation Clauses :

- i. In constructing the conditions, the specifications, schedule of quantities and contract agreement, the following words shall have the meanings herein assigned to them except where the subject to context other requires.
- ii. Headings and marginal notes to the conditions of contract shall not be deemed to form part thereof or to be taken into considerations in the interpretation or construction thereof or of the contract.
- iii. Where the context so requires (I) words importing persons include firms and corporations and (II) words importing the singular only also include the plural and vice versa.

Employer shall mean **BANK OF BARODA, ZONAL OFFICE, HYDERABAD.**

- a. Consultant shall mean **Firoz Ahmed** or in the event of their ceasing to be Consultant for the purposes of this contract such other person or persons as shall be nominated for that purpose by the employer subject to such qualifying provisions as may agreed upon.
- b. Contract shall mean ..... and include his /their legal representatives, permitted assigns, or successors.
- c. Site shall mean the site where the works are to be executed as shown within boundary in red border on the site plan including any building and erections thereof allotted by the Employer for the contractor's use.
- d. **The Composition of this contract** shall mean the tender documents comprising the notice inviting tender, form of the tender, the tender conditions, the drawings, and priced bills of quantities with their preambles, the acceptance thereof, and the articles of agreement, together with the taken together are deemed to form one contract and shall be complementary to one another.
- e. **Bills of quantities** variously also termed priced bills quantities, schedule of rates, shall means the schedule of quantities originally furnished with the notice inviting tender, duly priced in by the tenderer and accepted by the Employer for inclusion as a part of the contract for determining the consideration payable to the contractor agreement it is also referred to as the contract scheduled.
- f. **Notice of writing** or written notice shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by the registered post to the last known private or business address or to the registered office of the addresses and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
- g. **Act of Insolvency** shall mean any Act of Insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any amending such original.
- h. **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 a tender as the price of that item a similar percentage or proportionate sum provided always that in determining the percentage or proportion of the sum so added or deducted by the contractor, the total amount of any price cost items and provisional sums of money shall be deducted from the total amount of the tender. The

expression "net prices" when used with reference to the contract or accounts shall be held to mean rates or prices so arrived at.

- i. **The works** (or the work ) shall unless thereby something either in the subject or context repugnant to such construction, be considered and taken to mean the works by or virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or addition. Whether the word "works" is used it shall cover "installation" also under the same definition.
- j. **Excluded risks** are risks due to riots (otherwise than among contractor's employees) and civil commotion (in so far as both these are uninsurable), war (whether declared or not) invasion, act of foreign enemies, civil war, rebellion, revolution, insurrection, military or unsurpassed power, any acts of Government, damage from air craft, acts of God such as earthquake, lightning and unprecedented floods and other causes over which the contractor has no control and accepted as such by the Employer or causes solely due to use of occupation in manner for which the work /installation in respect of which a certificate of completion has been issued or a course solely due to faculty designs of work.
- k. **Provisional items** shall mean items for which only very approximate quantities have been included in the tender documents.
1. **Virtual Completion** of works / installations shall mean the substantial completion of the work / installations in accordance with the contract enabling the Employer to take over the same.
2. **Consultants / Bank Instructions:** the Contractor shall execute the whole and every part of the work in the most substantial and workman like manner and both as regard materials and otherwise in every respect in strict accordance with the specifications, conforming exactly, fully and faithfully, to the designs drawings and instructions in respect of the work given by the Consultants/Bank and under the directions of and under the supervision of and subject to the approved in all respects by the Consultants/Bank who may in their discretion and from time to time issue further drawings, and/or written instructions, directions and/or written instructions, details and explanation which are hereafter collectively referred to as "Consultants/Bank" in regard to :
  - a. Variation or modification of the design quality or quantity of works of the addition or omission or substitution of any work.
  - b. Any discrepancy in the drawings or between the schedule of quantities and/or drawings and/or specifications.
  - c. The removal from the site of any materials brought thereon by the Contractor and substitution of any other materials thereof.
  - d. The dismissal from the works of any persons employed there upon.
  - e. The opening up for inspection of any work covered up.
  - f. The amending and making good of any defects under clause 19.
  - g. The removal and/or re-execution of any work executed by the contractors. On account of defects, under clause 18.

The contractors shall forth with comply with and duly execute any work comprised in such Consultants/Bank instructions provided always that verbal instructions, directions and explanation given to the contractor or his representative upon the works by the Consultants/Bank shall if involving a variation, be confirmed in writing by the contractor within seven days and if not dissented from in writing within a further seven days by the Consultants/Bank, such shall be deemed to the Consultants/Bank instructions within the scope of the contract.

**Manner of execution of work:** The Consultants/Bank shall be entitled to direct at what point or points and in what manner the works are to be commenced, and from time to time carried on.

**Variation to be approved by Employer:** Notwithstanding anything herein contained, the Consultants/Bank or his representative shall not, without the prior concurrence in writing which will result in the Employer having to pay the contractor an additional sum great than Rs. 25000.00 and all such instructions issued to the contractor should forthwith be brought to the notice to the employer. The Contractor shall submit through the Consultants/Bank a statement of analysis of rates, vouchers, etc. The rates on scrutiny and final acceptance of the Employer under the terms and Clauses 16 hereof shall form a supplementary schedule of quantities.

3. **Agreement copies to be supplied:** The contract Document shall remain in the custody of the Consultants/Employer and shall be produced by in at his office and as when required by the Employer/Consultant or the contractor. The Contractor on the signing hereof shall be furnished by the Consultants/Employer free of cost with a certified copy of the agreement and one copy of each of the said drawings issued during the progress of works. Any further copies of such drawings required by the contractor shall be paid for by him. The contractor shall keep one copy each of all drawings on the works and the Consultants/Bank or his representative shall at all reasonable times have access to the same. Before the issuing the final certificate to the contractor he shall, if so required, forth with return to the Consultant/Employer all drawings and specifications.
4. **The contractor to provide everything necessary:** 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

amounts staged in the schedule of quantities and/or the schedule of the rates and amounts which rates and amounts shall except as otherwise provided over cover all his obligations under the contract, and all matters and things necessary for the proper completion of the works.

The contractor shall provide at his own cost all materials (except such, materials if any, as many in accordance with the contract by supplied by the Employer) machinery, plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding, in fact everything necessary or proper execution of the work, whether original, altered or substituted according to the true intent and meaning of the or substituted taken together whether the same may or may not be particularly shown or described therein provided that the same maybe reasonably inferred therefrom, and if the contractor finds any discrepancy in the drawings, or between the drawings, schedule of quantities and specifications, he shall immediately and in writing refer to the Consultant/Employer who shall decide which is to be followed, subject to :

- i. Anything shown or contained in any one or other of (a) the drawings, (b) specifications and (c) the contract schedule, and not shown in the others shall be equally binding as if were contained in each of them.
- ii. Figured dimensions are to be followed in preference to the scale, and large scale details in preference to small-scale drawings.
- iii. The following order of preference shall apply:
  - a) The drawings, (b) specifications, covered by bills of quantities, (c) technical Specifications.

5. **Contractor to conform to legal regulations:** The contractor shall conform to provisions any Act of the Legislature relating to the works and to the Regulations and Bye-laws of any Authority and of any water, lighting and other Companies and/or authorities with whose system the structure is proposed to be connected, and shall, before making any variations from the drawings or specifications the may be necessitated by so conforming, give to the Consultants/Employer written notice, specifying the variation proposed to made and the days receive such instructions he shall proceed with the work, conforming to the provisions, regulations, or Bye-laws in question and any variation so necessitated shall be dealt with under clauses Nos.12 & 16.

The contractor shall bring to the attention of the Consultant/Bank all notices required by the said Acts, regulations or Bye-laws to be given to any authority and pay to such Authority, or to any Public Office all fees that maybe properly chargeable in respect of the works and ledge the receipts with the Consultant/Bank.

The contractor shall indemnify the Employer against all claims in respect of patent rights and shall defend all actions arising from such claims and shall he pay all royalties, license fee, damage, cost and charges of all every sort that may legitimately be incurred in respect thereof.

The Employer is entitled to deduct all taxes and rates as per existing laws and rules, from any moneys due or that may become due to the Contractor.

- 5.b The contractor shall indemnify the Employer from and against all claims, demands, proceedings damages cost and expenses which may brought or made against the Employer or to which it be put by reason of the contractor not conforming to or complying with any of the provisions or requirements of any Act or section, Central or State, Rules, Regulations, Bye-laws of local authorities Panchayat, Collector or any other companies relating to or in water, light or other amenities at the site.

6. **Contractor responsible for setting out work:** The contractor shall on the basic of dimensioned drawings and information necessary for the purpose, furnished by the Consultants/Employer set out the works on site at his own expense and he responsible for the correctness of the positions, levels, dimensions and alignment of all parts thereof. The checking of any setting out by the representative of the Consultant or of the Employer shall not in any way relieve the contractor of the responsibility for the correctness thereof and he shall amend his own cost and to the satisfaction of the Consultant/Bank any error in the setting out or consequential to wrong setting out, found at any stage during the progress of the work or during the effects liability period after completion of work.

7. a) The contractor shall maintain at the site comprehensive registers, posted up-to-date, showing the nature of the materials/articles/goods their identification marks, dates and the results of the tests. Such registers shall be got countersigned by the representatives of the Consultant/Employer at site and extracts from the registers shall regularly be posted to the Consultant and the Employer. The form of the registers shall be mutual settled.
- b) The costs of the tests and of the materials and labor and equipment if any way, involved in the testing operations shall be borne by the contractor in all cases except as otherwise provided for in the contract.

8. **Supervision by Contractor:** The contractor shall give all necessary personal superintendence during the execution of works, any as long thereafter as the Consultant/Bank may consider necessary until the expiration of the defects "Defects Liability Period" satisfied in Clause 19 herein. The contractor shall also during all the time the works are in progress, employ a competent and qualified representative whose name shall be approved by the Consultant/Bank and who shall be constantly in attendance at the works while the men are at work. Any directions, explanations, instructions, or notices given by the Consultant/Employer to such representative shall be held to have been given to the contractor.

If the contractor fails to appoint and keep on the works a competent and qualified representatives as aforesaid the Consultant/Employer shall have powers to suspend the works till such time a competent qualified representative as aforesaid is posted and the contractor shall not be entitled to claim extension of time on the plea of such suspension of the works.

9. **Dismissal of workmen:** The contractor shall on the request of the Consultant/Employer immediately dismiss from the works any person employed thereof by him who may, in the opinion of the Consultant/Employer be incompetent or mal-conduct himself, and such persons shall not be again employed on the works without the permission of the Consultant/Employer.
10. **Access to works:** The contractor, the Consultant and his respective representative shall at all reasonable times have free access to the works and/or to the workshops, factories or other places where materials are laying or from which they are being obtained and the contractor shall give the Employer, the Consultant and his respective representative, all reasonable facilities necessary for inspection and examination and tests of the materials and workmanship. No person unauthorized by the Employer or the consultant except the representatives of Public Authorities shall be allowed on the works at any time.
11. **Work not be sublet:** The whole of the works included in the contract shall all be executed by the contractor who shall not directly or indirectly transfer, assign or undulate the contract or any part share thereof or interest therein without the written consent of the Employer, 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.
- 12.1 **variation not to vitiate the contract :** No alternation, omission or variation shall vitiate this contract but in case the Consultant/Employer thinks proper at any time during the progress of the works to make any alteration in or additions to or omissions from or substitutions for the original drawings, specifications, designs and instruction or any alterations in the kind of quantity of the materials to used in the work shall give notice thereof to the contractor, in writing the contractor shall alter, and to or omit from or substitute for as the case may require, in accordance with such notice and carry out the amended work on the same conditions in all respects on which he agreed to do the main work, but the from or substitutions in the works or any deviation from any of the provisions of the contract stipulations, specifications or contract drawings without the previous consent in writing of the Consultant/Employer and the value of such extra, alterations, additions or omissions or substitutions shall in all cases be set mined by the Consultant/Employer with the prior approval in writing of the Employer in accordance with the provisions of Clause 16 hereof, and shall be added to or deducted from the contract amount accordingly.
- 12.2 : The supply and execution of any part of the carrying out of any works incidental to the execution of any item or class of work shown in the schedule of quantities shall not constitute a variation entitling the contractor to extra paying provision that the said item or class of work cannot be executed satisfactorily according to the intent and meaning of the drawings and specifications without the said part thereof or the said work incidental thereto whether the same may or may not be particularly shown or described in the drawings and specifications and schedule of quantities and provided the same may be reasonably inferred thereof.
- 12.2.1: The time for completion of work shall, in the event authorized variations result in an addition to the contract sum in excess of 10% be extended, on payment by the contractor as follows:
- i) In the proportion which the total executed contract value including authorized variations bears to the original contract value, the certificate of the Consultant/Bank being conclusive as to such proportion; plus
  - ii) 25% of the additional time calculated way of (i) above or such further time as may be considered to be reasonable by the Consultant/Employer.
- 12.3: Similarly the changing of the position of the work from one to another or to a more difficult position than that shown in the drawings or described in the specifications or the contract schedule, or the carrying out



of the work under the contract schedule or carrying out of the work under circumstances not contemplated in the specifications to the contract schedule shall not constitute a variation entitling the contractor to extra payment.

- 13.a **No compensation for alteration in or restriction of work:** If any time after the commencement of the work the Employer for any reason whatsoever does not require the whole or part of parts thereof as specified in the tender to be carried out, the Consultant/Bank shall give notice in writing of the fact to the contractor who shall not claim for any compensation whatsoever in account of any profit which he might have derived from the executing of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out. Nor shall he have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall involve curtailment of the work originally contemplated.

13. b **Schedule of quantities on standard of measurement:**

The schedule of quantities unless otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard Method of Measurement.

14. **Errors in bills of quantities:** No error in description of in quantity or by way of omission of items from the schedule of quantities shall vitiate this contract but shall be rectified and the value thereof as pertained under clause 16 herein shall be added to or deducted (as the case may be) from the contract amount provided that there shall no rectification of errors in the contractor's schedule of rates.

15. **Measurement of works:** The Consultant/Employer may from time to time intimate to the contractor and the Employer that he required the works to be measured, the contractor shall forth with attend or send a qualified agent to assist the Consultant/Employer or the Consultant/Employer representative in taking such measurements and calculations and to furnish all particulars or to give all assistance required by either of them.

Provided that the contractor shall give notice of not less than ten clear days to the Consultant/Employer or his representative in charge of the work before covering up or placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered or placed beyond reach of measurement any work without the consent of the Consultant/Employer or his representative in charge of the work who shall within the aforesaid period of ten days inspect the work and cause the measurements to be made if, any work be so covered up without the consent of the Consultant/Employer or his representative in charge of the work, 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 materials with which the same was executed.

Should the contractor not attend or neglect or omit to send such agent then the measurements taken by the Consultant/Employer or a person approved by him shall be taken to correct measurement of the works. Such measurements shall be taken in accordance with the Indian Standard Method of Measurement, unless otherwise provided for else where in this contract.

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

All authorized extra works, omissions and all variations made without the consultant/Employer knowledge, if subsequently sanctioned by him in writing (with the prior approval in writing of the Employer) shall be included in such measurement.

16. **Price Variation:** The rates of additional, altered substituted work shall be arrived at in accordance with the following rules:

- i. The net or prices in the contract schedule shall determine the valuation of (the rates for) the extra work (items) where such extra work is of similar character and is executed under similar conditions as the work priced therein.
- ii. If the rates for extra, altered or substituted (deviated) work are not provided for (available) in the contract schedule, they shall to the extent possible be derived out of the rates given in that schedule for similar or near similar items. For the purpose of such derivation, where necessary and when so directed, the contractor shall furnish detailed analysis for the said similar or near similar items in the contract schedule. For such portions of the analysis for the extra, altered or substituted (deviated) work for which prices cannot be abstracted from the corresponding analysis of rates for the said similar or near similar items substantiated by purchase bills/vouchers shall be adopted. Using factors and constants for quantum of material labor T & P and sundries from NBO/CPWD, Standard PWD data/analysis, in the order thus written adding 15% over towards profits and overheads. When called upon to do so the contractor shall submit the required purchase bills/vouchers.
- iii. In respect of contract which incorporates more than one schedule the rate applicable in case (i) above if not provided for the schedule pertaining to the work in which the addition, alteration or

substitution(deviation) occurs, shall taken as the lowest applicable rate in the other schedule similarly, in case (ii)above , if similar or near similar items cannot be found in the schedule pertaining to the work which the addition, alteration or substitution(deviation)occurs, similar or near similar items from the other schedules shall be adopted.

- iv. In the case of additional, altered or substituted (deviated) work for which rates cannot reasonably be derived as at (ii) above, the rates shall be worked out adopting market prices, substantiated by purchase bills/vouchers, using factors and constants for quantum of material, labor, T & P and sundries from NBO/CPWD/Standard materials, labor T & P and sundries from NBO/CPWD/Standard PWD/DATA analysis in the order thus written, adding 15% towards profits and overheads. When called upon to do so the contractor shall submit his purchase bills/vouchers, to the Consultant/Employer.
- v. The question as to particular items, being similar or near similar to the additional, altered or substituted (deviated)work in the contract schedule are to be adopted for derivation of rates for the addition, altered or substituted (deviated)work and whether the said rates cannot be derived from similar or near similar items in the contract schedule will be decided by the Consultant/Employer.
- vi. In case (ii) and (iv) the contractor is required to submit his analysis of rates adopting the principles enunciated and the Consultant/Employer after scrutinizing the analysis and other papers furnished, will allow such rates as he considers reasonable.
- vii. Where extra work is of such a nature that it cannot be properly measured or valued the contractor shall be allowed day work prices at the net rates stated in the tender or the priced schedule of quantities or, if not so stated, then in accordance with the minimum local day work rates and wages for the district, notified by the concerned authority, provided that in either case if required by the Consultant/Employer vouchers, muster rolls and other documents required for the proper verification of the labour employer and the materials deployed or his representative at or before the end of the week following that in which the work has been executed. The question as to whether extra work is of such nature that it cannot be properly measured or valued will be decided by the Consultant/Employer. The margin to be allowed on actual costs to the contractor towards profits and overheads shall be 15%.
- viii. **Deviation Limit:** It is the value of which the total executed contract value including authorized variation in excess of the original contract value, expressed as percentage and shall be adjudged on the sum total of all additions, omissions, reductions, alterations or substitutions (deviations) covered by the authorized variations under Clause 2 and 3 of the Conditions of Contract.  
The value of prime cost sums shall not be included in calculating the above percentage.
17. **Unfixed Material:** Wherein any certificate (of which the contractor has received payment) the Consultant/Bank has included the value of any unfixed materials intended for and/or placed on or adjacent to the works such materials shall become the property of the Employer and then shall not be removed except for use upon the works, without the written authority of the Consultant/Employer. The contractor shall be liable for any loss or damage to such materials.
18. **Removal of improper work, material, etc.,:** The Consultant/Employer shall, during the progress of the work, have full powers to orders in writing from time to time, removal from the works within such reasonable time or times as may be specified in the order, of any materials which in the opinion specified in the order, of any materials which in the opinion of the Consultant/Employer are not in accordance with the specifications of the instructions of the Consultant/Employer or do not conform to approved samples, the substitution of the rejected materials by the proper other materials and the removal and proper re-execution of any work executed with unsound, imperfect or unskilled workmanship or with materials not in accordance with the contract, notwithstanding that the same may have been passed or certified or, and paid for and the contractor shall forthwith carryout such orders at his own cost.

In case of default on the part of the contractor to carry out such order, the Employer shall have the power to being answerable or accountable for any loss or damage that may happen or arise to such materials removed and all expenses consequent on or incidental thereto as certified by the Consultant/Bank shall be borne by the Contractor, or may be deducted by the Employer from any money due or that may become due to the contractor.

In lieu of re-execution of any work not in accordance with the contract of Consultant/Employer may in their option allow it to remain but will allow for such work reduced rates. The decision of the Consultant/Employer to exercise his option in this regard and the quantum of reduction to be made in the rate for the item in question shall be final and binding on the contractor.

19. **Defects Liability Period:** Any defect, shrinkage, settlement or other faults which any appear within the 'Defects Liability Period' staged in the appendix hereto, or if none so staged, then within 6 months after the

virtual completion of the works arising in the opinion of the Consultant/Employer from materials or workmanship not in accordance with the contract, shall on demand which shall be made within the defects liability period, in writing by the Consultant/Employer and within such reasonable time as shall be stated there in specifying the work, materials or article complained of not withstanding that the same may have been passed or/and certified, paid for, be amended and made good by the contractor, at his own proper charges and cost in the case of default. The Employer may employ and pay other person or persons to aimed and make good such defects, shrinkage, settlements or other faults and all damages, loss and expenses consequent there of or incidental thereto shall made good borne by the contractor and such damages loss and expenses shall upon the Consultant/Employer certificate in writing, be recoverable from the contractor by the Employer or maybe deducted by the Employer from any money due or that may become due to the contractor or the Employer may in lieu of such amending and making and by the contractor deduct from any money due or that may become due to the contractor a sum to be determined by the Consultant/Employer equivalent to the cost of amending and making good such works and in the event of the amount retained under Clause 27 being insufficient, recover the balance from the contractor, together with any expenses the employer may have incurred in connection there with, should any defective have been done or material supplied by any sub-contractor employed on the works who has been nominated or approved by the Consultant/Bank as provide in Clause 11 the contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the contractor himself and been subject to the provisions of clause 2 thereof. The contractor shall remain liable under the provisions of this clause not withstanding the signing by the Consultant/Employer of any certificate including the final certificate, or the passing of any accounts.

20. **Completion Certificate:** The works shall not be considered as completed until the Consultant/Employer has certified in writing that they have been virtually completed and the defects liability period shall commence from such certified date of virtual completion of work.

Within ten days of the completion of work, the contractor shall give notice of such completion to the Consultant/Employer shall inspect the work and if there is no defect in the work shall furnish the contractor with certificate of completion otherwise a provisional certificate of completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued but no certificate shall the work considered to the complete until the work as executed, all scaffolding, surplus materials, floors, or other parts of any building, in upon or about which the work was executed or which he may have had possession for the purpose of the execution thereof and not until the work shall have been measured by the Consultant/Employer. If the contractor shall fail to comply with requirements of this clauses to removal of scaffolding, surplus materials and rubbish aforesaid and cleaning of dirt on or before the date fixed for the completion of the work, original or extended in terms of clause 24 herein, the employer after issuing due notice, may at the expense of the contractor remove such scaffolding, surplus materials and rubbish, etc. and dispose of the same as he thinks fit and clean off such dirt as aforesaid except for any sum actually realized by the sale thereof and the expense, if any, so incurred maybe recovered from any money due or that may become due to the contractor by the Employer.

21. **Contractor Liable of Damage done:**

- 21.1 The contractor shall be responsible for all injury to persons, animals, or things, and for all structural and decorative damage to property which any arise from the operation or neglect of himself or if any nominated subcontractors employee whether such injury or damage arises from carelessness, accident or any other cause whatever in any way connected with the carrying out of the contract. This clause shall be held to include, inter-alia, any damage or building, whether immediately adjacent or otherwise, and any damage to roads, streets, footpaths, bridges, or ways as all damages caused to the building and works for ing the subject of this contract by frost or other inclemency of weather. The contractor shall indemnify the employer and hold him harmless in respect of all any of Governments otherwise and also in respect of any awards of compensation of damages consequent upon such claims.
- 21.2 The contractor shall reinstate all damages of every sort mentioned in this 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 or damage to the property of third party.
- 21.3 The contractor shall indemnify the employer against all claims which maybe made against the employer by any member of the public or other third party in respect of 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, which an approved insurer a policy of insurance in the joint names of the employer and contractor against such risks and deposit such policy or policies with the Employer from time to time during the currency of this contract. The contractor shall also similarly indemnify the employer against all claims which may be made upon the employer whether under the workman'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 sub-contractor and shall at his own expenses effect and maintain, until the virtual completion of the contract, which an approved insurer a policy of insurance in the joint names of the Employer and contractor against such risks and deposit such policy and policies with the Employer from time to time during the currency of the contract.

The contractor shall be responsible for anything, which may be excluded from the insurance policies above referred to and also for all other damages to any property arising out of and incidental to the negligent or defective carrying out this contract. He shall also indemnify the employer in respect any costs, charges or expenses arising out of claim or proceedings and also in respect of award of compensation for damage arising therefore.

The Employer with the concurrence of the Consultant/Employer shall be at liberty and is hereby empowered of deduct the amount of any damage, compensation, costs, charges and expenses arising or accruing from or in respect of any such claims or damage from any or all sums due or to become due to the contractor.

**22. Responsibility for safety or building:**

The contractor shall be responsible for the safety of the works (including the materials, temporary building and plant) until they are taken over by the Employer and they shall stand at there risks, and be in sole charge of the contractor, who shall be responsible for and must with all possible speed make good all damage or loss from whatever cause.

**22. a Insurance of the works:**

The contractor shall within 7 days form the date of commencement of the work insure the works at his cost and keep them insured until one month after the works are take over by the Employer or three months after the date of completion whichever is earlier, against loss or damage by fire and usual risks other than fire against which insurers generally provide cover in a **CONTRACTOR'S ALL RISK POLICY**, with the names of the employer and Contractor (the name of the former being placed first in the policy), for the full amount of the contractor. Such policy shall cover the property of the Employer only an Consultant and surveyor's fee of assessing and claim and in connection with his services generally in reinstatement subcontractor or employee. The contractor shall deposit the policy and receipts for the premium paid with the Consultant within a week of the date commencement of the work unless otherwise instructed by the Consultant/Employer. In default of the contractor insuring as provided above, the employer of the Consultant/Employer on his behalf may be due or that may become due to the contractor.

The contractor shall as soon as the claim under the policy is settled, or the work rein stated by the insurers should they elect to do so, proceed with all due diligence with the completion of the works in the same manner as though the fine other such risks had not occurred and in all respects under the same conditions of contract.

The contractor in case of rebuilding or Reinstatement State the fire or other such usual risk shall be entitled to such extension of time for completion as the Consultant/Employer.

**23. Liquidated damages:**

If the contractor fails to complete the works by the date stated in Appendix or within any extended time under clause 24 herein below the contractor shall pay or allow the Employer the sum named in Appendix as "Liquidated Damages" for the period during which said words shall so remain incomplete by the date of completion of the works as defined in the contract, and employer maybe deduct such damages from any meets due or that maybe become due to the contractor.

**24. Extension of time:**

If the contractor shall desire an extension of time for completion of the work on the grounds of his having been unavoidably hindered by such causes as (a) force major or (b) any exceptional inclement weather or (c) proceedings taken or threatened by or dispute with adjoining or neighboring owners or public authorities arising otherwise than through the contractor's won defaults or (d) the work or delays of other contractors or tradesmen engaged or nominated by the Employer or the Consultant/Employer and not referred to in the schedule of quantities and or specifications or (e) strike or lockout affecting any of the building trades or directly the work or (f) delay in the supply of materials stipulated to be supplied by the Employer of any other valid ground, he shall apply in writing to the Consultant/Employer within 15days of

such hindrance on account of which he desires such extension as aforesaid and the Consultant/Employer, in his opinion reasonable grounds have been shown therefore, may with the previous approval in writing of the Employer make a fair and reasonable extension of time for completion of the contract works, but the contractor shall nevertheless constantly use his endeavors to prevent delay and shall do all that may reason able be required of him to proceed with the work expeditiously provided.

- a. That the contractor shall have no claim other than the extension of time for the delay in completion of the work due to such hindrance and
- b. That the contractor shall suspend the works whenever called upon to do so in writing by the Consultant/Bank and shall allowed reasonable extension of time for completion of work due to such suspension of work and nothing else.

**25. Termination of Contract by Employer:**

If the contractor, after receipt of written notice from the Consultant/Employer requiring compliance within in a week fails to comply with such further drawings and/or Consultant/Employer instructions, the Employer may employ and pay other persons to execute may such work whatsoever that may be necessary to give effect thereto, and all costs incurred in connection there with shall be recoverable from the contractor by the Employer on the certificate of the Consultant/Employer as a debt or may deducted by him from any moneys due or to become due to the contractor.

**26. Termination of Contract by Employer:**

If the contractor being an individual or a firm commits any "act of Insolvency", or shall be adjudged an insolvent or being an Incorporated Company shall be an order for compulsory, voluntarily or be subject to the supervision of the court and of official assignee of the Liquidator in such acts of insolvency or winding up, as the case may be, and shall be unable within 7 days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Consultant/Employer that he is able to carry out and fulfill and contract and give security therefore, if so required by the Consultant/Employer,  
OR if the contractor (whether an individual, firm of incorporated company) shall suffer execution to be issued.

OR shall suffer any payment under this contract to be attached by or behalf of any of the creditors of the contractor.

OR shall assign or sublet this contract without the consent in writing of the Employer first obtained.

OR shall charge or encumber this contract any payments due or which may become due to the contractors thereunder,

OR if the Consultant/Employer shall certify in writing to the Employer than the contractor.

- i. Has abandoned the contract, or
- ii. 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
- iii. Has failed to commence the works, or has without any lawful excuse under these conditions suspend the progress of the works for 14days after receiving the Consultant/Employer notice to proceed, or
- iv. Has failed to remove the materials from the site or to pull down and replace work for seven after receiving from the Consultant/Employer written notice that the said materials or work were condemned and rejected by the Consultant/Bank under these conditions, or
- v. Has neglected or failed persistently to observe the 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 haven **given to the contractor requiring the contractor to observe or perform the same, or**
- vi. Has to the detriment of good workmanship or without the consent if writing of the employer sublet any part of the contract,

Then and in any of the said cases the employer may not withstanding any previous waiver, after giving seven day's in writing to the contractor, determine the contract but without thereby affecting the powers of the Consultant/Employer or the obligations and liabilities of the contractor the whole of which shall continue in force as fully as if the contract had not been so determined as if the works subsequently executed had been executed by or on behalf of the contractor. And further the employer by his agents or servants may enter upon and take possession of the works and all plant, tools, scaffolding, sheds, machinery, steam or 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 deploy the same by means of his own servants and workmen in carrying on and completing the works or by employing other contractor or person or persons to complete the work and the contractor shall nor in any way interrupt or do not act, matter or thing to

prevent or hinder such other contractor's or other person or persons employer for completing and furnishing or using the material and plant for the works. When the work shall be completed or as soon thereafter as convenient the Consultant/Bank shall give notice in writing to the contractor to remove his surplus materials and plant, and should be contractor fail to do so within a period of 14 days after receipt thereof by him the Employer shall be entitled to sell the same by public auction and give credit from the contractor for the amount realized.

The Contractor's account shall also be credited with the amount that would have been payable to him, for the uncompleted work (completed by the employer through other contractor/s or persons as aforesaid) in terms of his agreement as if the contract had not been determined and he (the contractor) had continued to execute the work to its completion. The actual gross expense to the Employer including incidental charges in completing the uncompleted work through other contractor/s or person or persons shall be debited to the contractor's account if it be not less than the credit for the uncompleted work as above referred; if, however, the said debit to be made be less than the said credit, then the amount to be debited shall be equal to the value of the credit given as above referred.

The consultant/Employer shall thereafter ascertain and certify in writing what (if any thing) in the final accounting is due to or payable to the contractor for the sale of the surplus materials and plant and loss the employer shall have been put any owing, to the contractor and which shall be so certified shall there upon be paid by the employee to the contractor and vice versa; and the certificate of the Consultant/Employer in this regard shall be final and conclusive between the parties.

**27. Certificate of Payment:**

A bill in triplicate shall be submitted by the contractor along with detailed measurements of the work completed at site provided that atleast 50% of the work of the accepted value of the tender has been completed at site by the Contractor. The consultant shall check/take the measurements or cause the measurements to be checked/taken for the purpose of having the same to be verified and to the extend work has been executed in accordance with the contract, issue interim certificates within the period specified for honoring interim certificates (in the appendix to the conditions of the contract) subject to retention of SD at the percentage marked in the said appendix till the whole SD is collected.

During the venture of this contract, only two bills shall be accepted. The first bill shall be as per interim certificate as above and the second bill shall be the 'Final' bill as detailed under.

And when the works have been virtually completed and the Consultant/Employer shall have certified in writing that they have been so completed, the contractor shall submit the final bill in respect of the contract work within one month thereafter and in accordance with the certificate to be issued by the Consultant/Employer payment shall be made by the Employer within the time named in the Appendix as "Installment after virtual completion". And the contractor shall be entitled to the payment of the final balance in accordance with the final certificate to be issued in writing by the Consultant/Employer after the expiration of the period referred to as "the defects liability period" in the Appendix hereto from the date of virtual completion or as soon after the expiration of such period as the works shall have been intent and meaning thereof whichever shall last happen. Provided always that the issue by the Consultant/Employer of any certificate during the progress relieve the contractor of his liability in case of fraud, dishonesty, or fraudulent concealment relating to the works or; material or any matter dealt and insufficiencies in the works or materials which is reasonable examination would not have disclosed. No certificate of the Consultant/Employer shall of itself be conclusive that any work or materials to which it relates are in accordance with the contract neither will be contractors have a claim for any amounts which the Consultant/Employer might have subsequently be discovered as not payable and in this respect the Employer's decision shall be final and binding.

The Consultant/Employer shall have power to withhold any certificate if the works or any parts thereof are not being carried out of his satisfaction.

The Consultant/Employer may be any certificate may any correction in any previous certificate which shall have been issued by him. No certificate of payment will be issued by the Consultant/Employer if the contractor fails to insure the works and keep them insured the issue of the virtual completion certificate. Also certificate of payment may be refused if the contractor fails to execute the formal agreement within two weeks of his being called upon to do so.

**28. Security Deposit/Retention moneys bear no interest:**

Retention money/security Deposit, or the balance of it available with Employer, shall be refunded to the contractor in the manner specified in the Appendix to the conditions of contract and shall bear no interest whatsoever until the date of its return, notwithstanding any provision to the contrary elsewhere in this contract.

**29. Matters excepted from Arbitration:**

The decision, opinion, direction certificates (except for payment) with respect all or any of the matters under clauses 2,4,7,9,12,16,18,19,24,26 hereof (which matters are herein referred to as the excepted matters) shall be final and conclusive and binding on the parties hereto and shall be without appeal. Any other decision, opinion, direction, certificate or valuation of the Consultant/Employer 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 provisions as to opening the reference) as if it were a decision the Consultant/Employer under the following clause.

**30. Arbitration:**

- i. All disputes or differences of any kind whatsoever which shall at any time arise between the parties hereto touching or concerning the works or the execution or maintenance thereof the this contract or the rights touching or concerning the works or the execution or maintenance operation or effect thereof or to the rights or liabilities of the parties or arising out of or in relation thereto whether during (other than those in respect of which the decision of any person is by the contract expressed to final binding) shall after written notice by either party to the contract or after determination, foreclosure or breach of the contract to the other of them and to the appointing authority who shall be appointed for this purpose by the Employer (Bank) be referred for adjudication to a sole arbitrator to be appointed as herein after provided.
- ii. For the purpose of appointing the sole arbitrator referred to above, the appointment authority will send within thirty days of receipt by him of the written notice aforesaid to the contractor panel of three names of persons who shall presently unconnected with the organization for which the work is executed.
- iii. The contractor shall on receipt by him of the names as aforesaid, select any one of the person named to be appointed as a sole arbitrator and communicate his name to the appointing authority within thirty days of receipt of him of the names. The appointing authority shall thereupon without any delay appoint the said person and the sole arbitrator. If the contractor fails to communicate such selection as provided above within the period specified, the appointing authority shall make the selection and appoint the selected person as the sole arbitrator.
- iv. If the appointing authority fails to send to the contractor the panel of three names as aforesaid within the period specified, the contractor shall send to the appointing authority a panel of three names of persons who shall all unconnected with either party. The appointing authority shall on receipt by him of the names as aforesaid select any one of the persons named and point him as the sole person and appoint him as the sole arbitrator within 30days of receipt by him of the panel as the sole arbitrator and communicate his name to the appointing authority.
- v. If the arbitrator as appointed is unable or unable or unwilling to act or resigns his appointing or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed as aforesaid.
- vi. The work under the contract shall however, continue during the arbitration proceedings and no payments due or payable to the contractor shall be withheld on account of such proceeding.
- vii. The arbitrator shall be deemed to have entered on the reference on the date he issues notice to both parties fixing the date of the first hearing.
- viii. The Arbitrator shall give a separate award in respect of each dispute or difference referred to him. The arbitrator shall decide each dispute in accordance with the terms of the contract and vie a reasoned award. The venue of arbitration shall be such place as may be fixed by the Arbitrator in sole discretion.
- ix. The Arbitrator may from time to time, with the consent of the parties, enlarge the time for making and publish in the award.
- x. The fees, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half by each of the parties. The cost of the reference and of the award including the fees, if any of the Arbitrator who may direct to and by whom and in what manner, such costs or any part thereof shall be paid and may fix or settle the amount of costs to be so paid.
- xi. The award of the arbitrator shall be final and binding on both the parties.  
Subject to aforesaid the provisions of the Arbitration Act 1940 or any statutory modification or reenactment thereof and the rules made there under, and for the time being in force, shall apply to the arbitration proceeding under this clause.

**31. Right of Technical Scrutiny of final bill:**

The employer shall have a right to cause a technical examination of the works and the final bill of the contractor including all supporting vouchers, abstract, etc., to be made at the time of payment of the final bill. If as a result of this examination or otherwise any sum is round to have been over paid or over certified if shall be lawful for the employer to recover the sum.

**32. Employer entitled to recover compensation paid to workmen:**

If, FOR ANY REASON THE Employer is obliged, by virtue of the provisions of sub-section (1) of Section 12 of the workmen compensation Act 1923, to pay compensation to a workmen employed by the

contractor, in the execution of the works, the Employer will recover from the contractor the amount of compensation so paid, and without prejudice, to the right of the Employer under sub-section(2) of Section 12 of the said Act, the Employer will be at liberty to recover such amount or any part thereof by deduction it from the Security deposit or from any sum due by the Employer shall not be bound to contest any claim made against him under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to the employer full security for all cost for which the employer might become liable in consequence of contesting such claim.

**33. Labour Laws /Regulations:**

The contractor shall employ labour in sufficient numbers directly through sub-contractors to maintain throughout the period of the contract the rate of progress required according to the approved program of work and of quality to ensure proper workmanship in accordance with the specifications and drawings and Consultant/Bank instructions.

The contractor will comply with the provisions of all Act of Government relating to labour and the rules and regulations made there under from time to time. He shall also submit at the proper time all particulars statements required to be furnished to the labour authorities on being directed to do so by the Consultant/Employer.

The contractor shall register and obtain necessary licenses, maintain all registers, records, notices and documents and submit returns as prescribed by various enactment's required under various statutes including the contract labour (Regulations and Abolition) act, 1970 and rules made there under as applicable to the contractor and ensure compliance of all the statutory regulations that are in time in all matters concerning this contract.

The Contractor will also comply with all the rules and regulations stated in the minimum wages Act 1948 and the subsequent amendments. The contractor shall indemnify the employer against any liability that may arise due to the non-compliance of any provisions under minimum wages Act 1948 or any enactment affecting the work contemplated under this contract.

**34. Apprentice Act:**

The contractor will also comply with the provisions of the Apprentice act 1961 and the Rules and Orders issued thereunder from time to time. Failure to do so will amount to a breach of contract and the employer may in his discretion terminate the contract. The contractor shall also be liable for any or other liability arising on account of any violation by him of the provisions of the act.

**35. When Contractor Dies:**

Without prejudice to any rights or remedies under the contract, if the contractor dies, the employer shall have the option of terminating the contract without compensation to the contractor.

**36. General Indemnify:**

The contractor shall indemnify the employer from and against all claims, demands, proceedings, damages, costs and expenses which may be brought or made against employer or to which it may be put by reason of the contractor not conforming to or complying with any of the provisions or requirements of any act or status, Central or State Rules, Regulations, Bye-laws of Local Authorities, Panchayat, Collector or any companies relating to or in connection with the works or to labour or for supply of water, light or other amenities at the site.

1. I) No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.
- ii) Suitable face masks should be supplied for use by the workers when the paint is applied in the form of spray or a surface having lead paint if dry rubbed and scraped.
2. Overalls shall be supplied by the contractor to the painter and adequate facilities shall be provided to enable the working painters to wash themselves during the period of cessation of work.
3. Hoisting machines and tackle used in the works including their attachments, anchorage and supports shall be maintained in perfect conditions.
4. Ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and of adequate strength and free from defects.

1. The workmanship is to the best available and of a high standard, use must be made of 'specialist' tradesmen in all aspects of the work and allowances must be made in the rates for doing so.
2. The materials and items to be provided by the contractor shall be the best of their respective kind and as approved by the Consultant/Employer in accordance with samples, which may be submitted for approval and generally in accordance with the specifications.



## **MEMORADUM**

Name of work	: Electrical & Air Condition Work for ambience & Counters at CHANDA NAGAR (PHYGITAL) BRANCH
Estimated value of work	: Rs. <b>24,61,234.38 lakhs (EXCLUDING GST)</b>
Earnest Money Deposit	: Rs.24,700.00
Date of Commencement	: From the date of acceptance Of the Tender
Period of Completion	: <b>21 days from Commencement.</b>
Value of work to taken for issue of "Interim Certificate" for payment	: No running bill will be paid
Retention percentage to be deducted From RA Bills	: 8% of the gross value of the Bill.
Liquidated damages	: One percent per week of the Contract value subject to a Max of 5% of the contract Value.
Period of Final Measurement	: 15 days
Period of honoring Interim Certificate For payment	: 15 days
Period of honoring Final Certificate for Payment	: 30 days
Total Security Deposit	: As per Clause No. 10
Refund of Security Deposit	: 100% after expiry of defect Liability period.
Defect liability Period	: 12 months for entire work.

**GENERAL SPECIFICATION FOR**  
**SELECTION OF ELECTRICAL EQUIPMENT, INSTALLATION**  
**TESTING AND COMMISSIONING**

1. SCOPE OF WORK: - This specification covers Design, Fabrication of the panels and testing, insuring, loading, transporting, unloading, installing, testing & commissioning the total Electrification work.
2. WORK EXCLUDED: - Civil work like foundation for the equipment / panels are not included in the scope of this specification. However the successful tender shall furnish dimensional drawings and relevant data required for planning the equipment foundations, cable trenches, exhaust pipes etc. However all base channels required are to be grouted across the cable trenches and panels shall be provided by the successful tenderer.
3. CODES & STANDARDS: - All the supplied materials / panels / cables etc & installation shall be in accordance with the International & Indian standards, Indian Electricity rules conforming to the latest edition of the following as applicable.

B: -	159	---	Bus Bar and Bus Bar connection.
IS: -	375 – 1964	---	Switchgear bus bar, Main connection and auxiliary Wiring marking and arrangement for (revised)
IS: -	1248	---	Electrical Instruments
IS: -	2147	---	Degree of protection provided by enclosures for low Voltages Switchgear and control gear.
IS: -	2208	---	HRC Cartridge link fuse up to 600 Volts.
IS: -	2705	---	Current transformers.
IS: -	3043	---	Code of practice for Earthing.
IS: -	4237	---	General requirements for switchgear and control gear For voltage not exceeding 1000 Volts.
IS: -	5082	---	Material data for Aluminum Bus Bar and push Button.
IS: -	3072	---	Code of practice for installation and maintenance of Switchgear.
IS: -	732	---	Code of practice for electrical wiring installation (System voltage not exceeding 650 V).

5. SITE CONDITIONS:-

All the supplied materials / panels / switchgears / fittings / wiring cabling for installation shall be operating in tropical climate with ambient temperature of 40 degree C maximum, and with maximum 10 degree C variation, average 30 degree centigrade for 24 hours.

Extreme care shall be taken to make the enclosed totally panels vermin proof against entry of rats, lizards and other vermin. All ventilation and other openings provided in the equipment shall have suitable screen protection.

Continuity of power supply is the first consideration and the panel design shall be such as to provide facilities to simplify maintenance, inspection, testing and general repairs at site.

6. **GENERAL SPECIFICATION FOR MEDIUM VOLTAGE POWER AND LIGHTING DISTRIBUTION BOARDS AND MISCELLANEOUS ELECTRICAL EQUIPMENT.**

This Specification generally described medium voltage power and lighting distribution boards and other miscellaneous electrical equipment such as Isolators, Switches, Socket outlets etc to be used for power wiring and lighting installations.

The equipment covered by this specification is as follows:

415/240 V Power distribution boards  
415/240 V Switch fuse lighting distribution board.  
415/240 V miniature circuit breakers (MCB) lighting distribution boards  
415/240 V metal clad Isolating switches  
240 V Switch socket outlet

7. **SYSTEM VOLTAGES**

- a) For power wiring and lighting installation, electrical power will be available at 415/240 V 3phase 4 wire 50HZ maximum voltage variation may be expected as +/-3%.

8. **POWER DISTRIBUTION BOARDS**

The power distribution boards are generally intended for distribution of power to various consumers in the office and shall be suitable for 415V 3 phase or 3phase and neutral 50HZ system. The distribution boards shall be either cubicle type or pedestal mounting type as specified.

a) Cubicle type boards

i) Cubicle type power distribution boards shall be factory assembled and wired conforming to IS: 4237 & IS: 8623. The boards shall be of Industrial, Floor mounted, totally enclosed cubicle type with multi-tier compartmental arrangement housing open execution type incoming isolating switches and requisite number of outgoing switch fuse/fuse switch units. Alternatively moulded case circuit breaker (MCCB) unit may be provided in incoming and outgoing circuits as specified. The degree of protection provided by the enclosure shall be in accordance with IS 2147 and conforming to IP50 or IP54 as called for in the Technical specification. The unit shall be of pressed sheet steel having minimum thickness of 2mm with rubber gasket at all joints and openings including doors. All bolted joints shall be provided with toothed/spring washers to ensure good earth continuity. It shall have a series of cubicles of uniform height placed side by side with front access for operation as well as cabling. The maximum operating height of the switches on the panel shall not exceed 1900mm and minimum operating height shall not be less than 400mm. The board shall be supplied along with base frame made of minimum 50mmx25mm Ms Channels.

- ii) The incoming and outgoing switches are MCCBs shall be arranged in tier formation to accommodate each unit in a separate compartment with gasketed hinged door. The door of individual compartment shall be interlocked in such a way that it can't be opened when the MCCB in the ON position. The "ON" and "OFF" positions of the switch handle shall be distinctly indicated. Modular construction shall be adopted to cater for different sizes of MCCBs. The switch board shall be of easily extensible type. Each PDB shall be provided with one 100 A and one 63 A TPN spare switch fuse/fuse switch unit or two numbers 100A TP MCCB.

- In case of switch fuse distribution boards, the switches shall be of load break AC 23 category conforming to IS: 4064 (part-1) having fully shrouded contacts. The isolator for the switch fuse units shall be on the busbar side and fuse on the load side. Rotary type switches may be used for rating upto 63A. The switch fuse units shall be provided with non-deteriorating type HRC fuse links having rupturing capacity not less than 46 KA conforming to IS: 2208.
- iv) In case of MCCB distribution boards, the MCCBs shall have all live parts totally enclosed in heat resistant moulded insulated housing have terminals accessible for external connections, but well shrouded against accident contacts. The units shall be generally designed, manufactured and tested according to IEC: 157-7 and shall be of manually operated type with quick make, quick break trip – free mechanism. The MCCBs shall be provided with direct acting adjustable thermal overload and magnetic short-circuit releases having breaking capacity not less than the short-circuit fault level at the bus bars of the distribution boards or as specified. The MCCB shall be selected from four frame sizes viz., 100,250,400 and 600A.
  - v) Separate bus bar compartment provided on the top and/or sides bolted cover. The bus bars shall be so arranged that they are easily accessible from the front of the cubicle. The main bus bars shall have continuous current rating as specified but in no case less than the current rating of incoming isolator. However, neutral bus bars shall have half the full load rating of the phase bus bars. The bus bars shall be of electrical purity aluminum or aluminum alloy conforming to IS: 5082. The bus bar sizes shall be so selected that the temperature rise over 45oC ambient does not exceed 45oC as measured by thermometer. The bus bars shall be properly supported with high quality non- hygroscopes insulating material having good ELECTRICAL & mechanical properties suitable for the applicable voltage grade and of adequate mechanical strength so as to withstand without damage effects of maximum available short-circuit current. Moulded bus bar supports made of glass reinforced thermo-setting plastic materials will be preferred. Bus bar supports shall have adequate creepage distance and anti tracking provision. The PDBs shall be selected from three categories having bus bar suitably designed to withstand a through-fault current of 10KA,25KA and 40KA. The selection shall be based on the available short circuit current at point where PDB is proposed to be used in the system. The bus bars shall be properly spaced to facilitate taking vertical connections to individual units. Tapping to the individual units from the bus bar shall be by mean of taped bus bars. Arrangement and marking of the bus bars and main connections shall be as per IS: 375. The Connection between bus bar and other connection made of different metal as well as their connections with the terminals of the equipment shall be made in such a way, as to prevent corrosion and local heating.
  - vi) Generally incoming and larger outgoing units will be located at the bottom-most tier and cables shall be directly terminated to the equipment terminals. For terminating multiple cable directly to the equipment terminals, extension pieces as required shall be provided. Outgoing power cables from the upper compartments shall be brought out to the terminal blocks located in the vertical cable compartments. Liberal space shall be provided in the cable compartments as well as in the bottom most tiers to facilitate termination of cables. Cable compartment shall be provided with bolted cover plates. Detachable cable gland plates shall be provided both at the top and bottom of cable compartments as well as the bottom most compartments. Provision shall be made in all cable compartments for clamping cables so as to facilitate cable termination to individual units.
  - vii) Wherever specified, AC magnetic contractor shall be incorporated in the incoming and outgoing feeders of the board for remote switching. The contractor shall be housed in

the same compartment of incoming/outgoing switches on MCCBs. The contractor shall be of study construction with double break silver tipped contacts conforming to IS: 2956 and shall be of AC3 utilization category.

- viii) For termination of power cable in equipment terminals/terminal blocks, compression type cable lugs suitable for aluminum conductor cables shall be provided. Die-cast aluminum alloy or brass cable glands suitable for PVC insulated, PVC sheathed armoured/unarmoured cables shall be provided in the cable compartments.
- ix) The PDB having two incoming switches/MCCBs shall have bus-section isolating switch/MCCB key interlocked with the incoming switches/MCCBs in such a manner that bus section switch/MCCB can be closed only when one of the incoming switches is open. Incoming and bus-section switches/MCCBs shall be housed in separate compartment.

The PDB shall have an indicating voltmeter selector switch connected to incoming feeder with easily accessible voltmeter fuses. Ammeters with selector switches shall be provided in each incoming feeder. These instruments shall be flush type located on the front door of the compartments.

Suitably engraved identification labels and inscription plates shall be provided for each circuit as well as for the boards.

One continuous earth bus shall be provided in the bottom part of PDB along the full length of the board with two bolted type earthing terminals to comply with the requirements of Indian Electricity Rules. Proper danger plates shall also be provided on each board.

b. Pedestal mounting type switch-fuse distribution board.

- 8.2.1 The pedestal mounting type distribution board shall be supported on pedestals made of steel sections and shall be of industrial metal clad dust-proof, totally enclosed design having specified number and sizes of fuse-switch or switch fuse units arranged on top and bottom of bus bar chamber.

The height of the stands shall be such as to permit proper termination of cables for the switches mounted above the bus-chamber and the same time keep the switches operating handles, both below and above the bus-chamber at convenient heights.

- 8.2.2 The supporting arrangement and other constructional and design features of the bus bars shall be similar to that described in item 8.1.5.

Switch fuse units shall be of load-break type as specified under item 8.1.3 above and shall be mounted on the bus bar chambers by means of flanged throat arrangement. Wherever called for, suitably key interlocking shall be provided between two incoming or two incoming and bus-section switches. All switches mounted on the top of the bus bar chamber shall be provided with detachable type reverse entry adapter boxes. Wherever required switch mounted at the bottom of the bus bar chamber shall also is provided with suitable adapter box to facilitate termination of cables.

Cable lugs and cable glands shall be as specified under item 8.1.8.

Identification labels and inscription plates etc shall as specified under item 8.1.11.

Earthing arrangement and danger plates shall be as specified under item 8.1.12 above.

For terminating multiple cables directly to the equipment terminal extension pieces as required shall be provided to permit connection and disconnection of each individual cable without disturbing other cables.

9.0 **Switch fuse lighting distribution boards:**

The Switch fuse lighting distribution boards shall be either enclosed cubicle or pedestal mounting type as specified suitable for 415/240V, 3-phase and neutral system.

9.1 **Cubicle type boards**

The constructional and design feature of the distribution boards shall be similar to that described in item 8.1 above for cubicle type power distribution boards except that the switches shall be of AC 22 or above category conforming to IS:4064(part).

9.2 **Pedestal mounting type switches Lighting distribution boards.**

The constructional and design features of the distribution boards shall be similar to that described in item 8.2 above for pedestal mounting type Switch fuse power distribution board except that the switches shall be of AC 22 or above category conforming to IS:4064(part).

10. **Miniature circuit-breaker lighting distribution boards.**

The lighting distribution boards with miniature circuit breakers (MCB) shall be suitable for 415/250V, 3-Phase and neutral or 240V single – phase and neutral system.

The lighting distribution board shall generally comprise incoming isolating switch or MCB isolator, requisite number of outgoing miniature circuit – breakers and adequately rated bus bars.

The boards shall be of industrial, totally enclosed dust-proof, wall mounted, sheet cubicle design. The boards shall have welded back and sides gasketed hinged door at the front with door handle having suitable locking device. Detachable cover plates shall be provided at the top and bottom with suitable gaskets for cables entry. For boards with incoming isolating switch, the access to the Operating handle shall be from the front of the cubicle without opening the front door. Operating knobs of both incoming MCB isolators and outgoing MCB shall be accessible only after opening the front door of the cubicle. Protective insulated cover plate with shall be provided inside the cubicle to shroud all the live parts with only the operating knobs of the MCBs protruding outside the cover plate. As far as possible the board shall also be dust-proof in door-open position, adequate space shall be provided within the board to facilitate termination of incoming and outgoing cables. The board shall be factory wired and assembled. Where specifically called for, the boards shall be of special weatherproof design suitable for outdoor installation.

The incoming isolating switch shall be similar to that specified in item 10.1.3 above except that the switches shall be of AC 22 or above category conforming to IS:4064 (part-1).

The miniature circuit-breaking shall be heat resistant plastic moulded type generally designed manufactured and tested as per IS: 8828 – 1978. Unless specified otherwise all MCBs shall be provided with quick break trip free mechanism and direct acting thermal overload and short-circuit trip elements. The short-circuit breaking capacity of the MCBs shall not be less than 9,000 A at 0.8 power factor. The MCBs shall be suitable for operation in an ambient of 45oC without excessive derating. Single – phase MCBs, which are not provided with built – in phase barriers, and mounted adjacent to each other and connected to different phases, shall be provided with adequate insulated phase barriers.

The type, arrangement and other design and constructional in item 10.1.5 above.

For direct entry of cables, cable gland suitable for PVC insulated, PVC sheathed armoured / unarmoured aluminum conductor cables shall be provided. For cable entry through conduits detachable top and bottom plates shall be provided. Cable terminals shall be suitable for aluminum conductor cables and so arranged to enable connecting and disconnecting of each circuit without disturbing any other circuits. Compression type aluminum cable lugs shall also be provided. To facilitate termination of cables in the incoming MCB isolators and above 30 A outgoing MCBs suitable terminal connectors shall be provided. Wherever called for terminal blocks of adequate capacity/sizes shall be incorporated for the incoming/outgoing cables.

Identification labels and inscription plates etc shall be as specified under item 8.1.11 above. Earthing arrangement and danger plates shall be as specified under item 8.1.12 above.

11. 240V SWITCH SOCKET OUTLET

Socket outlet for 240 V supply shall be of 3-pin (two-pole and one earth) non-reversible, metal-clad, dust-proof, industrial type suitable for horizontal insertion type. 240V socket outlet shall be controlled by rotary type switch / MCB mounted on the socket outlet box. Operating handle of the rotary switch shall be fixed in such a manner that it will not be possible either to insert or to withdraw the plug without switching off the supply. All socket outlets shall be supplied with heavy-duty type plug and cap with chain. The isolating switches shall be of category AC 22 or above conforming to IS: 4064 (part-1). Manually operated industrial type. The isolator shall be housed in dust and vermin-proof sheet steel enclosure suitable for terminating aluminum conductor cables either directly or through conduits and shall be provided with compression type lugs. The isolator handle shall be interlocked with the door.

Inscription plate shall be provided indicating the voltage rating for the switch socket outlet.

12. LIGHT FITTING AND ACCESSORIES

General

12.1.1 All light fittings and accessories shall be manufactured from best quality materials the light fittings and accessories shall be designed, manufactured and tested in accordance with the following Indian Standards in so far as they are applicable.

1. IS: 1913 (part –1)-1978-General and safety requirements for luminaires. Tubular fluorescent lamps.
2. IS: 2418 (part 1 & 2)-1977-specification for tubular fluorescent lamps for general lighting service.
3. IS: 418-1963- Tungsten filament general service electric lamps.
4. IS: 1534 (part 1) – 1960 – Ballast for fluorescent lamps for switch starts circuits.
5. IS: 1569 – 1976 – Capacitors for use in tubular fluorescent lamps, high pressure mercury and low pressure sodium vapour discharge lamp circuits.
6. IS: 2215 – 1968 – Starters for fluorescent lamps.
7. IS: 3323 – 1965 – Bi pin lamp holders for tubular fluorescent lamps.

12.2 Fluorescent fittings:

Fluorescent fitting shall be supplied complete with copper wound ballast, Starter, bi-pin spring loaded holder & power factor improvement capacitor suitable for switch start fluorescent tube lamp and shall be fully wired.

The fluorescent light fittings shall be specified below:

- i. Industrial trough type fluorescent fittings suitable for twin 40 W single 40 W fluorescent lamp, having vitreous enamelled heavy gauge sheet steel reflector, finished and grey stove enamelled channel similar to Philips type no. TKC --24, Crompton type No. IVE, Bajaj type no. BJIV, K-lite No.KL – B or equivalent.
- ii. Industrial trough type fluorescent fitting as specified against item 9.2 (a) above but with stove enamelled heavy gauge sheet steel reflector similar to Philips type No.TKC –

22, GEC type No.FH – 23, Crompton type No.ISE, Bajaj type No.BJIE, K-Lite type No.KL – IS or equivalent.

- iii. Decorative recess mounting type Mirror optic wide spread fitting suitable for false ceiling with electro chemically brightened and anodised aluminum reflector assembly suitable for 2Nos 36W or 1 Nos 36W fluorescent tube but without tube, duly wired with electronic ballast, rotor type bi pin holder similar to Philips type No.TBS 518, Crompton CRFG, K-Lite type No.KL – RMWST or equivalent.

### 12.3 LAMPS

All lamps shall be of high lumen output and with long life. The successful Tenderer will have to give guarantee for the lamp performance.

#### Incandescent Lamp

All general service incandescent lamps shall be gas filled, clear finish and where ever possible, should be of coiled coil type. Incandescent lamp cap shall be of BT.

#### Fluorescent Lamp

All fluorescent lamps shall be of day light type (unless otherwise specified) and shall be suitable for switch – start with bi – pin type cap.

### 12.4 Ballast

The ballast shall be well tried out design to give trouble free operations With long life having provisions for suitable tappings in steps. The ballast must be able to dissipate sufficiently the heat developed in the windings and therefore provisions for good heat conduction from the coil to the case of the ballast shall be made. The ballast shall be of polyester filled copper wound having minimum power loss and the temperature rise shall be within Permissible limits and in conformity with IS: 6616 – 1972.

### 12.5 Electronic Ballast

The Ballast shall be well tried out design to give trouble free operations with long Life conform to BIS specifications, tested at ERTL kolkata or CFRI, Bangalore. The Ballast loss should be less than 2 W and efficacy of more than 6.5 Lumen / Watt. Operating voltage range between 100 and 250 V A.C.

#### Capacitor

Capacitor shall consist of element wound from layers of high purity aluminum foils and loss capacitor paper contained in aluminum cylindrical can. The capacitor shall be vacuum dried under high vacuum and impregnated. The can shall be hermitically sealed and shoulder lug terminal provided over porcelain insulators. The capacitor shall conform to IS: 1569 – 1976.

#### Lamp holder

The lamp holders shall have well spring contacts engaging positively with the pins of the lamp and preventing the lamp from extinguished due to vibration. The holders shall be such that the lamps can be removed easily whenever required for cleaning or for replacement purposes.

For fluorescent lamp, bi-pin lamp holders shall be provided. The starter holders shall be well tried out design and robust construction with provisions for easy insertion and removal of the starter ensuring correct starter contacts by means of strong spring action for incandescent lamps.

### 13.0 CABLE LAYING

Cable shall be laid in cable trenches/trays already provided by the premises owner. Any trenches and trays required shall be brought to the notice and necessary routing approvals and shall be taken before the cables are laid.

Bending of cables shall be laid in accordance with the manufacture's recommendation of cable bends.

Extra length of cable shall be provided on both ends for future maintenance works.

The cables should be supported and clamped at regular intervals.

All cables shall comply with IS 1554 (part 1) 1976, for 650/1100V.



14.0 CABLE TERMINATION

All cable ends are terminated with single compression cable glands with suitable size lugs crimped. All lugs shall be of copper / Aluminum as required.

15.0 CONDUITS

All conduits used shall be rigid PVC with 1.5mm thickness PVC and shall be of reputed grade quality.

All conduits laid shall be clamped at regular intervals.

Separate conduits shall be laid for UPS lighting, UPS Sockets and general wiring.

Any joints in the wiring shall be jointed properly in the junction box with proper insulation type etc.

If rigid PVC conduit is not accessible for installation due to short bends etc, Flexible PVC conduit shall be used for that particular length.

16.0 WIRES

All conductors are drawn from electrolytic grade copper bunched and Insulated with PVC compound, which is resistant to moisture, oil, alkalis and grease, PVC insulation shall have high insulation resistance value.

The colour for PVC insulation for different phases, Red, Yellow, Blue and for Neutral, Black and for Earth, Green is mandatory.

17.0 SWITCHES & SOCKETS

All switches and sockets shall be of modular plate switches.

All UPS connected switches and sockets shall be of different coloured front plates and uniform in all the areas. General power connected switches and sockets front plates shall be of white colour only.

All sockets shall have shutters.

All plastics should be fire retardant and self-extinguishing

All conduits shall be of silver plated conduits.

**LIST OF APPROVED MANUFACTURERS / NATURAL SOURCES OF MATERIALS TO BE  
USED IN WHICH EVER APPLICABLE  
THE HVAC (AIR-CONDITIONING) WORKS SUBJECT TO THE APPROVAL OF SAMPLES  
BY THE CONSULTANT**

<b>S.No.</b>	<b>Material Name.</b>	<b>Brand / Manufacturer / Recommended Make.</b>
1.	Split Units.	Carrier / Voltas / Carrier / Mitsubishi electric
2.	GI Sheets	TATA / HSL / SAIL / NIPPON DENRO, JINDAL or approved equivalent.
3.	Fire Damper	Carraire / Air Breeze/SRIFABS or approved equivalent.
4.	Vibration Isolators/Flexible Connectors	Resistoflex / Dunlop or approved equivalent.
5.	INSULATION	
	Fibre glass	UP Twiga / Kimmco / Owens corning or approved equivalent.
6.	Power Cables	CCI / ICC / Gloster / UCL/FINOLEX or approved equivalent.
7.	Control Cables	Finolex / Delton or approved equivalent.
8.	Aluminum Grilles Diffusers/ Linear Grilles	Caryaire / Air Breeze/SRIFABS or approved equivalent.
9.	Filters	Klenzoids / Airtech / Aerosol / Anfilco or approved equivalent.
10.	Cooling Coils / Heating Coils	Blue star / Rohini / Ethos / Carrier / Jaypee / Coil Company / ZECO or approved equivalent.
11.	Nitrile rubber	Armaflex / vedoflex /AERO FLEX/ARMACELL or approved equivalent.

**NOTE :** The contractor shall use only above mentioned material or equivalent make to be approved by the Consultant. All other materials shall conform to the specifications laid down. The tenderer shall take this into account while tendering rates / prices. The Consultant/Owner has got every right to select any of the above Makes for the Project. However Owner/Consultant before Execution shall be approved the samples of every material including all fixing accessories.

**APPROVED MAKES**  
**LIST OF APPROVED MAKES FOR ELECTRICAL WORKS**

<b>S.Nos.</b>	<b>Name of the materials</b>	<b>Approved make.</b>
1.	Wires FRLS	Finolex /Polycab /RR
2.	Switches / Sockets RJ 11 6a Jacks	Anchor Roma /Wipro-north west-nowa
3.	MCB's & DB's	MDS /Legrand / Hager
4.	MCCB	Legrand /EE
5.	Light Fittings	Philips/ Chrompton / Panasonic
6.	Power Cables	Finolex/ Poly Cab
7.	Telephone Cables	Finolex/ Delton/National
8.	MS Conduit	Gupta/Bharat
9.	SFU	L&T / GE Seimens
10.	Change over switch	HPL / Standard
11.	PVC Conduit	Sudhakar / Precision / Eq .
12.	Ceiling Fans	Crompton / Havells /Usha
13.	Exhaust Fan	Crompton / GEC
14.	Casing & Capping	Modi
15.	Kitkats	Havells / Anchor
16.	Meters	AE / Rishaba / IMP
17.	Music System	Philips / Bose

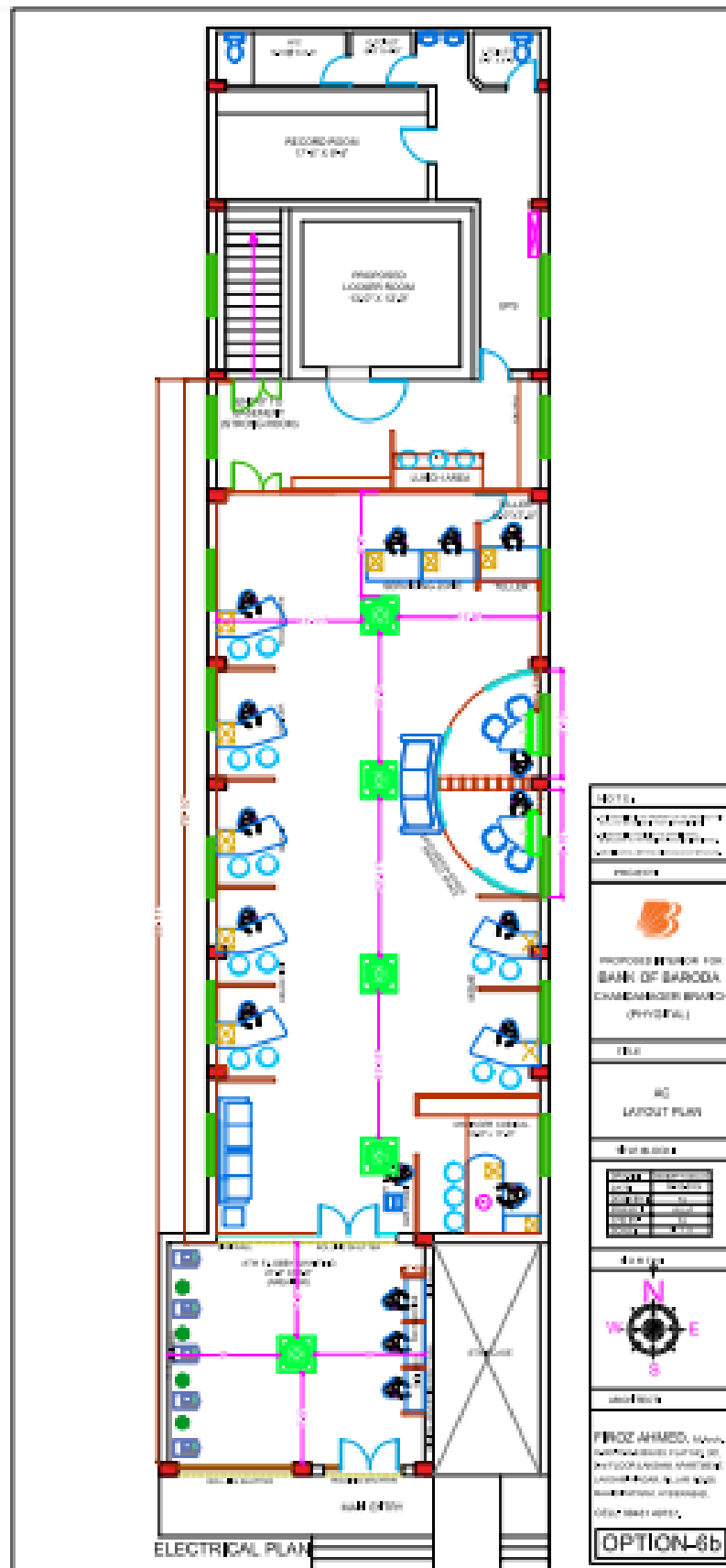
**Note:** The tendere shall ensure that only approved materials are used. Where necessary he may have to produce proof of using approved makes through original receipts, letter from the manufacturer or authorized dealer etc. Though choices are mentioned above, please note that the Consultant / Bank reserves the right to choose.

**APPROVED MAKES**  
**LIST OF APPROVED MAKES FOR LAN WORKS**

<b>S.Nos.</b>	<b>Name of the materials</b>	<b>Approved make.</b>
1.	Cat6 E UTP cable	D-Link / Legrand
2.	PVC casing/pipe/flexible pipe	Modi
3.	Cat6 24-Port jack Panel	D-Link / Legrand
4.	Cat6 Information out Let, Faceplate with SMD	D-Link / Legrand
5.	Cat6 Mounting Cord 3ft (1Mtr) Factory made	D-Link / Legrand
6.	Cat6 Mounting Cord 7ft (1Mtr) Factory made	D-Link / Legrand
7.	12U Communication 9U Rack with Cable Manager, Cantilever shelf, Power manager, mounting fasteners pack of 20, Front Glass Door and Lock	Wall rack

**Note:** The tendere shall ensure that only approved materials are used. Where necessary he may have to produce proof of using approved makes through original receipts, letter from the manufacturer or authorized dealer etc. Though choices are mentioned above, please note that the Consultant / Bank reserves the right to choose.





## DECLARATION

I/We have inspected the site of works and have made me / us fully acquainted with the local conditions in and around the sites of works. I/We hereby declare that I/We have gone through the conditions laid down in the Notice Inviting Tender, Conditions of Contract, Technical Specifications and understood the same and on the basis of the same I/We quoted our rates in the Schedule of Quantities attached with the tender documents.

I/We shall also uniformly maintain such progress as may be directed by the Employer / Architect to ensure completion of same within the target date as mentioned in the tender document.

**Witness:** \_\_\_\_\_

Signature of Tender

Address\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_