

# **BANK OF MAHARASHTRA**

**HYDERABAD ZONAL OFFICE, 2<sup>ND</sup> FLOOR,  
BANK STREET, KOTI  
HYDERABAD-500001**

## **TENDER SCHEDULE.**

**(TWO BID SYSTEM)**

### **Part 1. Technical Bid.**

**ELECTRICAL WORKS**

**OF**

**ZONAL OFFICE & SULTAN BAZAR BRANCH  
AT KOTI, HYDERABD**

**CONSULTANTS**

**ANCHURI DESIGN WORLD**

ARCHITECTS – ELECTRICAL DESIGNERS

1-11-248/3, BEGUMPET

HYDERABAD-500016, ANDHRA PRADESH.

TLFX.: - 040 – 27767197 CELL : 09246547272

E-MAIL – ravianchuri@yahoo.co.in

Last date for submission of Sealed Tender: 15.00 Hrs. (IST) on 05.04.2016

Opening of Sealed Tenders (tech Bid): 15.30 Hrs. (IST) on 05.04.2016

**Tender to be submitted to:**

**THE ZONAL MANAGER,  
BANK OF MAHARASHTRA,  
2<sup>nd</sup> FLOOR, BANK STREET, KOTI  
HYDERABAD- 500001. (TS)**

**Tel: 040- 040- 24755080 / 24757005/ 24761858.**

Contractor **must provide** below:

**E- MAIL id :**

**Contact No:**

Postal address : \_\_\_\_\_

\_\_\_\_\_

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**Note: Duly Signed Technical Bid, EMD, required Work Completion Certificates , Work orders and All other Documents required for Pre-Qualification must be the part of Technical Bid ( Envelope-1 )**

**PART : 2 PRICE BID ( ENVELOPE-2)**

**Envelope –2 ( Price Bid only ) : Duly Filled / Signed with NEAT & READABLE handwriting Price Bid should be submitted in Envelope –2, Overwriting, Calculation mistakes may lead to Disqualification.**

**NOTICE INVITING TENDER (NIT)**

**NAME OF WORK :ELECTRICAL WORKS OF ZONAL OFFICE & SULTAN BAZAR BRANCH AT KOTI, HYDERABAD (TS)**

**Sealed tenders are invited for the abovementioned work in TWO BID SYSTEM from eligible agencies/contractors/firms.**

THE TECHNICAL-BID AND PRICE-BID SHOULD BE IN TWO SEPARATE SEALED COVER WITH THE NAME OF THE WORK AND THE BRANCH AND TECHNICAL-BID / PRICE-BID (AS THE CASE MAY BE) CLEARLY WRITTEN ON EACH SEALED COVERS.

<b>1</b>	<b>Name of the work</b>	<b>ELECTRICAL WORKS OF ZONAL OFFICE &amp; SULTAN BAZAR BRANCH AT KOTI, HYDERABAD</b>
<b>2</b>	<b>Date and Time where tender forms are available for sale.</b>	<b>From 11.00 AM to 5.00pm on 28.03.2016 Upto 3.00p.m on 05.04.2016 from The ZONAL MANAGER, BANK OF MAHARASHTRA, ZONAL OFFICE, 2<sup>nd</sup> Floor, Bank Street, Hyderabad- 1</b>
<b>3</b>	<b>Time and last date of submission of Tender</b>	<b>Up to 3.00 PM on 05.04.2016</b>
<b>4</b>	<b>Place, Time &amp; Address for submission of tender/contact person /telephone no/email address.</b>	<b>Up to 3.00 p.m. on 05.04.2016 <u>Address:</u> The ZONAL Manager, BANK OF MAHARASHTRA, 2<sup>nd</sup> Floor, Bank Street, Hyderabad- 1 Tel : 040- 040- 24755080 / 24757005/ 24761858.</b>
<b>5</b>	<b>Date, Time and Place of opening of tenders.</b>	<b>Technical bid on 05.04.2016 at 3:30PM and Price bid after Tech. bid scrutiny. Place &amp; contact person: The ZONAL Manager, BANK OF MAHARASHTRA, 2<sup>nd</sup> Floor, Bank Street, Hyderabad- 1 Tel : 040- 040- 24755080 / 24757005/ 24761858.</b>
<b>6</b>	<b>Quantum of Earnest Money Deposit (EMD)</b>	<b>Rs 45,000/- DD-DRAWN IN FAVOUR OF THE ZONAL MANAGER, BANK OF MAHARASHTRA PAYABLE AT HYDERABAD</b>
<b>7</b>	<b>Quantum of Security Deposit</b>	<b>1. INITIAL SECURITY DEPOSIT – 2% of the Tender value including EMD 2. FSD/Retention Money- Deductable in running bills @ 10% of the value of work and Total deductable as per terms of the tender document.</b>
<b>8</b>	<b>Estimated cost</b>	<b>Rs 22.55 Lakhs</b>
<b>8</b>	<b>Terms of payment of Bills, if any</b>	<b>Minimum value of running bill is Rs 5 Lakhs ( maximum 3 running bills )</b>
<b>9</b>	<b>(Penalty clause) Liquidated Damages</b>	<b>In case of delay a penalty @ the rate of 1% of the value of the work per week subject to a maximum of 10% (as per the value of work) would be strictly imposed.</b>
<b>11</b>	<b>Stipulated time for completion of</b>	<b>SIX (06) WEEKS</b>

	<b>the work/supply.</b>	
<b>12</b>	<b>Validity period of the tender.</b>	Three (3) Months.
<b>13</b>	<b>Taxes</b>	Rates quoted should include all Taxes, Octroi, vat other charges like Transportation etc. However I.T, and WCT will be deducted at source.
<b>13 (a)</b>	<b>Income tax</b>	Income tax deduction at source would be by the bank before releasing any payment to the contractor.
<b>13 (b)</b>	<b>WAT &amp;WCT</b>	The VAT/ WCT as applicable in the State of TELANGANA should be included in the quoted rates no extra amount towards VAT / WCT would be paid by the bank. The necessary tax deduction at source, as applicable rate would be initiated by the bank before releasing any payment to the contractor. The agency should have VAT/WCT Registration. No bills will be paid without Registration.
<b>14</b>	<b>Electronic Payment</b>	Electronic payment shall be preferred. All the contractor must furnish details such as 1) Name of the their bank 2) Name of their branch 3) Account number 4) Name of the account holder as in the bank account 5) IFSC code of the branch 6) Sales Tax regn. number 7) PAN number.
<b>15</b>	<b>Any additional Information</b>	-----

Dully filled-in Tender Document (Technical Bid and Price Bid) shall bear the signature and seal of contractor on all pages (otherwise the tender shall be summarily rejected) and such tender document shall be submitted in two separate sealed cover addressed to The ZONAL MANAGER, BANK OF MAHARASHTRA, 2<sup>nd</sup> Floor, Bank Street, Hyderabad- 1

on or before the Date & Time stipulated above.

**The D.D./ B.C. of E.M.D. shall be submitted along with the Technical Bid in the sealed cover (otherwise the tender shall be summarily rejected).** The contractor has to must provide their E-mail id, contact nos. and postal address on both bid documents. Henceforth, all official communication form bank shall be through E-mail and SMS also.

The name of work as “TECHNICAL BID FOR ELECTRICAL WORK OF ZONAL OFFICE & SULTAN BAZAR BRANCH KOTI, HYDERABAD” & “PRICE BID FOR ELECTRICAL WORK OF ZONAL OFFICE & SULTAN BAZAR BRANCH KOTI, HYDERABAD” should be clearly super scribed on respective sealed cover of technical bid and price bid. Content/ paper/ sheet/ drawing should not be either altered or detached from the original tender document issued to or downloaded by the contractor.

The tender shall be summarily rejected, if any one of the above said requirements has not been complied with.

The bank reserves the right to cancel or postpone or modify the tenders at any stage without assigning any reason.

**ZONAL MANAGER  
HYDERABAD ZONE**

**NOTICE INVITING TENDER**

M/S \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Dear Sirs,

**TENDER FOR PROPOSED ELECTRICAL WORKS OF ZONAL OFFICE & SULTAN BAZAR BRANCH BRANCH , ,HYDERABAD..**

Sealed tenders are invited in two bid system i.e. Technical bid (Cover1) and Price bid (Cover2) for ELECTRICAL works at **PROPOSED ELECTRICAL WORKS OF ZONAL OFFICE & SULTAN BAZAR BRANCH BRANCH AT HYDERABAD.** are invited from reputed contractors who are eligible to tender as per pre-qualified criteria mentioned in the tender document

1. Contract documents consist of Pro-forma of detailed plans, technical specification, schedule of quantities of the various classes of work to be done, and the set of 'conditions of contract' to be compiled with by the person whose tender may be accepted.

Tenders which should always be placed in two envelopes, with the name of the project written on the envelopes will be received till 05.04.2016 up to 3 PM in the office of The Zonal Manager, BANK OF MAHARASHTRA, BANK STREET 2ND FLOOR, KOTI, HYDERABAD. Envelope-1 should contain, Earnest Money Deposit, conditions of contract and technical specifications. Envelope-2 should contain Price bid. The envelope-1 will be opened on 05.04.2016 at 3.30 PM. The price bid of the qualified contractors shall alone be opened on the same day.

2. The contractors should quote in figures as well as in the words the rates, and amount tenders by them. The amount for each item should be worked out and the requisite totals given. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates, figures and words. However, if a discrepancy is found the rates, which correspond with the amount worked out by the contractor shall be taken as correct. If the contractor does not work out the amount of an item or it does not correspond with the rate written either in figure or in words then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly the rates quoted by the contractor will be taken as correct and not the amount.
3. The tender document must be filled in English and all the entries must be made by the hand and Written in ink. If any of the documents are missing or un-signed, the tender shall be considered invalid.

4. Earnest money amounting to **RS:45000.00** is to be deposited with the tender in the form of Demand Draft / Banker's Cheque payable at Hyderabad and drawn in favor of The Zonal Manager, BANK OF MAHARASHTRA, otherwise the tender is liable for rejection.
5. The successful tenderer will have to pay an amount of initial security deposit, which shall be 2% of the accepted value of the tender including the EMD, by means of D.D. in favour of the The Zonal Manager, BANK OF MAHARASHTRA, payable at Hyderabad. The initial security deposit is to be paid by the Contractor to Bank within 10 days of intimation to him of the acceptance of the tender. The initial security deposit will be invested with the bank for the duration of the contract period and will be returned to the contractor without any interest, after issue of the virtual completion certificate. No interest is allowed on the retention money.
6. The acceptance of a tender will rest with the Competent Authority, who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all of the tenders received, without assigning any reasons. All tenders in which any of the prescribed conditions are not fulfilled, or are incomplete in any respect are liable to be rejected.
7. All compensation or other sums of money payable by the Contractor to Clients under the terms of this contract may be deducted from the security deposit, or from any sum that may be or may become due to the Contractor on any account whatsoever and in the event of the Security Deposit being reduced by reasons of any such deductions, the Contractor shall within 7 days of being asked to do make good in cash or by cheque any sum which have been deducted from his security deposit.
8. Tender containing any condition leading to unknown / indefinite liability, are liable to be summarily rejected.

If at all any rebate(s) is/are to be offered the tenderer shall first quote his rates strictly on the terms and conditions stipulated in tender document and then show separately rebate(s) offered specifying the conditions for such rebate(s). failure to follow this procedure will render the tender liable to summarily rejection.

9. Canvassing in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
10. The tenderer should quote their (own) rates for undertaking the work.
11. All taxes including Sales Tax or any other tax on material or on finished works like work's contract tax, turn over tax etc. in respect of this contract shall be payable by contractor and the Bank will not entertain any claim whatsoever in this respect.
12. Time is the essence of the contract. The work should be completed in 6 months from the date of the work order issued to the contractor to commence the work. The successful Contractor

will have to give CPM/PERT chart of various activities of works to be done so that the work gets completed within the stipulated time. The chart shall be submitted within 15 days from the date of acceptance of the tender.

13. Tenders for works shall remain open for acceptance for a period of 90 days from the date of opening of tenders. If the tenderer withdraws his tender before the expiry of the said period or makes any modifications in terms and condition of the tender which are not acceptable to the Bank, then the bank without prejudice to any other right or remedy be at liberty to forfeit the earnest money.
14. It will be obligatory on the part of the tenderer to tender and sign the tender documents for all the component parts and that, after the work is awarded, he will have to enter into an agreement for each component with the competent authority in the bank.
15. The tenderer, apart from being a competent contractor must co-ordinate himself with the agencies of appropriate class who are eligible to tender for (I) HVAC (II) ELECTRICALs.
16. The tenderer should visit the site to ascertain the working conditions and local authority regulations / restrictions if any and other information required for the proper execution of the work.
17. The quantities of various items given in the schedule of quantities are approximate. The quantities of work may vary at time of allotment / execution of work. Bank reserves the right to omit / delete any item(s) of work from the schedule at the time of allotment / before. Contractor will be paid for the actual work done at the site duly verified by the concerned official of the bank.
18. The unit price shall be deemed to be fixed price. In case of extra items, a record of labour charges paid shall be maintained and shall be presented regularly to the Employer's for checking. The settlement will be made based on figures arrived at jointly and taking unit price given in the contract assigned to the successful Tenderer. In case of extra items where similar or comparable items are quoted in the tender, extra rates shall be based on tender rates.
19. If the rate quoted by the contractor for any item / items are not workable or abnormally lower than the market rate, the bank may demand Bank guarantee from the contractor for satisfactory completion of these work. The bank guarantee amount will be not less than 50% of the estimated amount of the items for which the rates are not workable or abnormally low. This bank guarantee will be released after completion of these works (unworkable and abnormally low rated items) to the satisfaction of the bank.
20. No employee of the Bank is allowed to work as a contractor for a period of 2 years of his/her retirement from Bank Services without previous permission of the Bank. This contract is

ANCHURI DESIGN WORLD.

BANK OF MAHARASHTRA, ZONAL  
OFFICE , HYDERABAD.

liable to be cancelled, if either the contractor or any of his employee is any time to be such a person who had not obtained the permission of Bank as aforesaid before submission of the tender or engagement in the contractor's service.

**21.** Sealed tenders in prescribed form in two envelopes (Envelope-1 should contain cost of tender document,if downloaded from website, Earnest Money Deposit, conditions of contract and technical specification. Envelope-2 should contain price bid) are to be addressed and sent to Deputy General Manager, Premises Department, IV Floor, HeadOffice, Hybank Towers, Gunfoundry, Hyderabad – 500001.

**22.** Estimated Cost **22.55 Lakhs**

**The ZONAL MANAGER,  
BANK OF MAHARASHTRA,  
II FLOOR, BANK STREET,  
KOTI,  
HYDERABAD – 500001.**



**FORM OF SUBMISSION OF TENDER**

**(To be filled by the tenderer)**

ZONAL MANAGER  
BANK OF MAHARASHTRA,  
II Floor, BANK STREET,  
KOTI,  
Hyderabad – 500001.

Dear Sir/s,

**Ref: TENDER FOR PROPOSED ELECTRICAL WORKS OF ZONAL OFFICE & SULTAN BAZAR BRANCH R, HYDERABAD..**

I / We the undersigned have carefully gone through and clearly understood, after visiting the site, the tender drawings and tender documents comprising of the tender form, Notice of Contractors, Agreement and Conditions of building contract, Special Conditions, Specifications and Schedule of Probable Quantities prepared by your Architects M/s **ANCHURI DESIGN WORLD**, 1-11-248/3, BEGUMPET, HYDERABAD-500016, ANDHRA PRADESH. TLFX.: - 040 – 27767197 CELL : 09246547272

I / we do here by undertaken to execute and complete the whole or part of the work (as desired by you) at the respective rates quoted.

I / We are depositing as earnest of money sum of **Rs.45,000** by demand draft in favour of The ZONAL MANAGER, Premises Department, BANK OF MAHARASHTRA, along with this tender for due execution of the work at my / our tendered rates together with any variations which shall be adjusted at prices based by the Architects / Employer on our tendered rates.

In the event of this Tender being accepted I / we agree to enter into an agreement as and when required and executed the contract according to your form of Agreement, in default whereof, I / we do hereby bind my-self / ourselves to forfeit the aforesaid deposit.

I / we further agree to complete the work included in the said schedule of quantities within 42 days from the date of the work order issued to commence the same.

Date of commencement shall be either one-week, from the date, the acceptance letter is issued to the contractor or day on which the contractor is instructed to take possession of site whichever is latter.

I / we agree not to employ sub-contractors other than those that may be approved by Architects / Employer.

I / We agree to pay Government, General and Sales Tax (State and Central), Excise and Octroi duties, for insurance and all other taxes including works contract tax.

I / We agree to pay Government, General and Sales Tax (State and Central), Excise and Octroi duties, for insurance and all other taxes including works contract extra, turnover tax, VAT etc as prevailing foretime to time, on such items for whom same is to be levies, and the rates quoted by me / us are inclusive of the same.

Yours Faithfully,

Contractor's Signature \_\_\_\_\_

Designation \_\_\_\_\_

Address \_\_\_\_\_

1.

- 2.
- 3.

### CRITERIA FOR PRE-QUALIFICATION

The eligibility criteria for pre-qualification of contractors are as under:-

Average annual financial turnover during the last 3 years ending 31<sup>st</sup> march 2015 should be at least Rs.10 Lakhs.

And

Experience of having successfully completed similar works during the last 4 years ending 31-03-2015, should be either of the following

- i. Three similar completed works costing not less than Rs. 9 lakhs OR
- ii. Two similar completed works costing not less than Rs. 11.20 lakhs OR
- iii. One similar completed work costing not less than Rs. 18 lakhs

AND

1) The contractor shall submit authentic documentary proof in support of financial turnover of them/ their firm. The contractor shall submit dully certified copies of (1) Income Tax return filed (2) Annual Balance Sheet Report and (3) Annual Profit & Loss Account; all of them for last three (3) preceding years. The contractor shall be summarily disqualified in case of non-submission of any one of above.

2) Similar works is defined as the ELECTRICAL works involving providing and fixing of Electrical Panels/ Dbs/ Lighting / Wirings / AC wiring / UPS wiring / Networking / LAN etc , allied works etc. Similar works should have been carried out for BANKS / Offices of Central/ State Government Departments/ Public Sector Undertakings etc.

3) The contractor shall submit authentic documentary proof in support of satisfactory completion of similar works during the last 4 years. The contractor shall be summarily disqualified in case of non-submission of the bonafied experience certificates.

4) The contractor shall submit true copy of Work completion/ experience certificate issued by competent authority. Work Orders / Work award letters/ bills will NOT be accepted. Only those works shall be considered for evaluation for which original certificates issued by the client or it's copy dully certified by a Gazetted Officer is attached.

5) The Contractor should be having adequate manpower, equipment etc.

6) The contractor having any added certificate from any competent authority for the products quoted will have added advantage.

**7) THE CONTRACTOR MUST HAVE RELEVANT ELECTRICAL INSPECTORATE LICENCE (FROM TELANGANA GOVT.) TO UNDER TAKE THE ELECTRICAL WORK. (PROOF TO BE ENCLOSED) ( CHECK VALID PERIOD )**

PRE-QUALIFICATION -- PROFORMA-I

**PARTICULARS OF THE CONTRACTORS TO BE FURNISHED FOR THE PURPOSE OF  
PRE-QUALIFICATION**

1.	Name of Organization / firm / company	
2.	Address	
3.	Year of establishment	
4.	Status of the firm (Company / Firm / Proprietary)	
5.	Name of Directors / Partners / Proprietor	i)  ii)  iii)
6.	Whether registered with the registrar of companies / registrar of firms. If so, mention number and date.	
7.	a) Name of Directors / Partners / Proprietor b) Enclosed Solvency Certificate from the bankers	
8.	Whether registered for sales tax purposes. If so, mention number and date. Furnish also copies of sales tax clearance certificate.	
9.	Whether an assessee of income tax. If so, mention permanent account number. Furnish copies of income tax clearance certificate.	
10.	State Annual turnover of the company.  Furnish copies of audited balance sheet and profit & loss account (audited) for the last three years.	

11.	Specify the maximum value of single work executed in the year in the country.	
12.	Status and details of disputed / litigations / arbitration, if any.	i)  ii)  iii)

Note: Where copies are required to be furnished these are to be certified copies preferably by the concerned agencies or a Government Officer.

Place :

Date :

Signature of the Contractor

PRE-QUALIFICATION -- PROFORMA-II

**PARTICULARS IN RESPECT OF 3 MAJOR WORKS EXECUTED IN LAST 7 YEARS**

S.No	Nam of work and project with address	Short description of the work	Name and address of Owner	Value of work executed	Stipulated time of completion	Actual time of completion	Name of architect / consulting engineer

Place :

Date :

Signature of Contractor

**GENERAL NOTES****1. PROCEDURE OF FILLING AND SUBMISSION OF TENDER**

- i) The tenderers should quote their rates in figures and words where the quantities have been indicated in the relevant items of the schedule of quantities, failures to do so may invalidate the tender. Erasing or over writing shall not be allowed. Corrections in the tender should be avoided if this becomes unavoidable, the entire rate (and not a portion only) shall be scored out and signed (not simply initiated) by the tenderer as token of such cancellation. A fresh rate in specified manner shall then be correctly written.
- ii) In the event of the tender being submitted by a firm, it must be signed by a member or members of the firm having legal authority to do so, and if called for, the legal documents in support thereof must be produced for inspection and the same in the case of the firm carried out by one member of a joint family. It must disclose, that the firm is duly registered under the India Partnership Act. Any tender signed by a member not holding a power of attorney shall be treated as informal.
- iii) All corrections are to be initiated.
- iv) The tenderer is to quote this rate in ink both in words and figures in English. In case of any variation, the rates quoted in the words in the “Original” copy of the tender shall only be valid. The tender shall be clearly and legibly written and whole writing must be by the hand of the person signing the tender and with the same pen and ink. Failure to do so may invalidate the tender.

The employer reserves to itself the right to accept the lowest or any tender or split up and distribute any items of work to any specialist firm or firms without assigning any reason. The employer reserves the right to split up and distribute the work to more than one tenderer, if necessary. Person tendering shall submit and return together with his tender, this condition of contract, specifications and the priced schedule of quantities and all set of papers signed on all the pages in a sealed cover. Signature will be deemed to be the acceptance of the contents of these tender papers by the tenderer. All enclosures to the tender shall be in duplicate.

Tenderer shall note that their tenders shall remain open for acceptance for a minimum period of three months from the date of opening the tenders. The tender must be unconditional. Conditional tenders may be summarily rejected.

**Submission of tenders:**

The tenders are to be submitted along with the copy of “General Clause of Contract and Technical Specifications” duly signed by the tenderer in a sealed cover at the office as mentioned in the tender notice. The authorized representatives of tenderer are present during opening of the tender.

**2. RATES TO INCLUDE:**

While quoting their rates the tenderer should include the following if otherwise not stated herein before.

- a) Necessary cost of taking samples of materials supplied by them for construction including cement and steel, wood/tiles etc., testing of the same at Govt.’s / approved laboratory including transportation, cost of the samples, as and when required.
- b) Submission of test reports of other materials as may be specified by Architects or Bank’s Engineer.

3. **WORKING HOURS:**  
Since the site is a Working Department, the Contractor has to execute the work after working hours, nights & on holidays. No extra payments will be made for the work being done during odd hours.
4. **STORAGE OF MATERIALS:**  
The contractor shall not store their materials and debris within the premises other than the work site handed over to him.
5. **LABOUR HUTMENT:**  
Shelter or stay for the labourers has to be arranged by the contractor at his own expense and responsibility.
6. **IDLE LABOUR:**  
In case the construction work is held up for any site conditions not attributable to the contractors or for any decisions instructions / want of details from Employer / Architects or for any of the conditions as per Article 30, the contractor shall be allowed reasonable extension of time by the employer but any claim for idle labour shall lie under the above conditions. Contractor's quoted rates should include for all such contingencies.
7. The contractor shall engage one competent person at site who shall take the instructions from the Architects. The work should not suffer due to lack of supervision, manpower and materials.
8. The Contractor is required to co-ordinate his works along with other agencies working at site. He has to reimburse any of the damage made by him or any of his representatives for any have the other agency or owner at site.
9. Making of any cut-out / opening for electrical wiring / fitting in any of false ceiling, partition, Paneling, masonry work etc., and providing panels of the same finish in partitions, paneling shall not be paid extra.
10. The contractor is required to fabricate a sample where required, or any item so installed for approved. Any changes made by the Architect's / Employers, in the sample to the specifications as mentioned in the tender, shall not be deducted or paid extra. The bulk production of the furniture can only be taken up after the final approval of the sample of the item.
11. The partitions shall be so fixed that all joinery work is in plumb and true in line. The partition frame shall be firmly fixed to the floor and ceiling by using suitable wall plugs and screws.
12. The contractor shall check all dimensions before fabricating and fixing the partitions or ceiling in position at site.
13. All measurements given in the schedule hereunder are for the purpose of tender only. Payment will be made on actual measurement of the work done.
14. All measurements shall be as per relevant I.S.I. standards.

## GENERAL CONDITIONS OF CONTRACT

Except where provided for in the description of the individual items in the schedule of quantities and in the specifications and conditions laid down hereinafter and in the drawings, the work shall be carried out as per standard specifications and under the direction of Employer / Architect.

1. **INTERPRETATION**

In constructing these conditions, the specifications, the schedule of quantities, tender and agreement, the following words shall have the meaning herein assigned to them except where the subject or context otherwise requires.

- I. **Employer:** The term employer shall denote **BANK OF MAHARASHTRA** with their Zonal office at KOTI, Hyderabad and any of its employees representative authorized on their behalf.
- II. **Architects / Consultants:** The term Architects shall mean **M/s. ANCHURI DESIGN WORLD**, or in the event of his / their ceasing to be the Architects for the purpose of this contract such other persons as the employer shall nominate for the purpose.
- III. **Contractor:** The term contractor shall mean \_\_\_\_\_ (Name and address of the contractor) and his / their heirs, legal representatives, assigns & successors.
- IV. **Site:** The 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 erection thereon, allotted by the employer for the contractors use.
- V. **Site Engineer:** Any other Engineer appointed from time to time by the Employer and certified in writing to the Architects and the Contractor, to act as Engineer for the purpose of the Contract in The place of the said.
- VI. **Drawings:** The work is to be carried out in accordance with drawings, specifications, the schedule of quantities and any further drawings, which may be supplied, or any other instruction, which may be given by the Employer during the execution of the work.

All drawings relating to work given to the contractor together with a copy of schedule of quantities are to be kept at site and the Employer / Architects shall be given access to such drawings or schedule of quantities wherever necessary.

In case any detailed Drawings are necessary contractor shall prepare such detailed drawings and / or dimensional sketches therefore and have it confirmed by the Employer / Architects as case may be prior to taking up such work.

The contractor shall ask in writing for all clarifications on matters occurring anywhere in drawings, specifications and schedule of quantities or to additional instructions at least 10 days ahead from the time when it is required for implementation so that the Employer may be able to give decision thereon.

- VII. **“The Works”** shall mean the work or works to be executed or done under this contract.

- VIII. “Act Of Insolvency”** shall mean any act as such as defined by the Presidency Towns Insolvency Act or in Provincial Insolvency act or any amending status.
- IX. “The Schedule Of Quantities”** shall mean the schedule of quantities as specified and forming part of this contract.
- X. “Priced Schedule Of Quantities”** shall mean the schedule of quantities duly priced with the accepted quoted rates of the contractor.
- XI. “Contract”** shall mean the Articles of Agreement, the general conditions special conditions, the appendix, the schedule of quantities, specifications and drawings attached here to and duly signed.
- XII. ‘Contract Price’** shall mean the sum named in the Tender subject to such additions thereto or deductions their from as may be made under the provisions hereafter contained.
- XIII. ‘Notice in Writing’** or written notice shall mean a notice in writing, type or printed characters sent (unless delivered personally or otherwise provided to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
- XIV. ‘Net Prices’** any arriving at the Contract amount the Contractor shall have added to or deducted from the total of the items if the Tender any sum, either as a percentage or otherwise, then the net price of any item in the tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the tender as the price of that item a similar percentage or proportionate sum. Providing always that in determining the percentage or proportion of the sum so added or deducted by the contractor, the total amount of any Prime Cost items and provisional sums of money shall be deducted from the total amount of the Tender. The expression ‘net rates’ or ‘net prices’ when used with reference to the contract or account shall be hold to mean rates or prices so arrived at.
- XV. ‘Virtual Completion’** shall mean the building is in the opinion of the Architect and Employer fit for occupation.
- XVI.** Words importing persons include firms and corporations. Words importing the singular only, also include the plural and vice verse where the Context requires.

## 2. SCOPE OF CONTRACT

The Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Architect and Employer. The Architect with approval of Employer issue further drawings and / or written instructions, details directions and explanations which hereafter collectively referred to as ‘Architect’s Instructions’. In regard to:

- a) The variation or modification of the design quality or quantity of works or 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 specification.
- c) The removal from the site of any defective material brought thereon by the contractor and the substitution of any other material thereof.
- d) The demolition removal and / or re-execution of any work executed by the contractor/s.
- e) The dismissal from the work of any persons employed there upon.
- f) The opening up for inspection of any work covered up.
- g) The rectification and making good of any defects under clauses hereinafter mentioned and those arising during the maintenance period (Defect Liability Period).

The contractor shall forthwith comply with and duly execute any work comprised in such Employer's or his agent / Architect's instructions, provided always that verbal instructions, directions and explanations given to the contractor's or his representative upon the works by the Employer's or his agent / Architects shall, if involving a variation, be confirmed in writing to the contractor/s within seven days. No works for which rates are not specifically mentioned in the priced schedule of quantities, shall be taken up without written permission of the Employer or his agent / Architects. The employer in consultation with the Architects as provided in clause "variation" shall fix rates of items not mentioned in the priced schedule of quantities.

**Regarding all factory made products for which ISI marked products are available, only products bearing ISI marking shall be used in the work.**

### 3. TENDERS SHALL VISIT THE SITE

Intending tenderer shall visit the site and make himself thoroughly acquainted with the local site condition, nature and requirements of the works, facilities of transport conditions, effective labour and materials, access and storage for materials and removal of rubbish. The tenderer shall provide in their tender for cost of carriage, freight and other charges as also for any special difficulties and including police restriction for transport etc., for proper execution of work as indicated in the drawings. The successful tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the employer or his agent / Architect might be deemed to have reasonably been inferred to be so existing before commencement of work.

### 4. TENDERS

The entire set of tender paper issued to the tenderer should be submitted fully priced and also signed on the last page together with initials on every page. Initial / signature will indicate the acceptance of the tender papers by the tenderer.

(Also see general rules and instructions for the guidance of Tenderers)

The schedule of quantities shall be filled in as follows:

- I. The "Rate" column to be legibly filled in ink in both English figures and English words.

- II. Amount column to be filled in for each item and the amount for each sub head as detailed in the “Schedule Of Quantities”.
- III. All corrections are to be initialed.
- IV. In case of any errors / omissions in the quoted rates, the rates given in the tender marked “original’ shall be taken as correct rates.

No modifications, writings or corrections can be made in the tender papers by the tenderer, but may at his option offer his comments or modifications in a separate sheet of paper attached to the original tender paper.

**The Employer reserves the right to reject the lowest or any tender and also to discharge any or all of the tenders of each section or to split up and distribute any item of work to any specialist firm or firms, without assigning reasons.**

The tenderers should note that the tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct, workable and self-supporting. If called upon by the Employer / Architects detailed analysis of any or all the rates shall be submitted. The Employer / Architects shall not be bound to recognize the contractor’s analysis. All corrections are to be initialed.

The works will be paid for as “measured work” on the basis of actual work done and not as “lumpsum” contract, unless otherwise specified.

All items of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly related to and reasonably detectable from the drawings, specifications and schedule of quantities and no further extra charges will be allowed in this connection. In the case of lump-sum charges in the tender in respect of any items of work will be made for the actual work done on the basis of lumpsum charges as will be assessed to be payable by the Employer / Architects.

The employer has power to add to, omit from any work as shown in drawings or described in specifications or include in schedule of quantities and intimate the same in writing but no addition, omission or variation shall be made by the contractor without authorization from the Employer. No variation shall vitiate the contract.

The tenderer shall note that his tender shall remain open for consideration for a period of three months from the date of opening of the tender.

## 5. AGREEMENT

The successful contractor will be required to sign agreement in accordance with the draft agreement from enclosed and the schedule conditions. The contractor shall pay for all stamps and legal expenses, incidental thereto. However the written acceptance by the employer of a tender will constitute a binding contract between the employer and the person so tendering whether such formal agreement is or is not subsequently executed.

**6. AUTHORITIES, NOTICES, PATENT RIGHTS AND ROYALTIES:**

The Contractor shall confirm to the provisions of the statutes relating to the works, and so to the regulation and bylaws of an local authority, and of any water, lighting and other companies on authorities with whose systems the structures are proposed to be connected and shall before making any variation from the drawings or specifications, that may be necessitated by so conforming given to the Architect's written notice, specifying the variations proposed to be made and the reason for making it apply for instruction thereon. In case, the Contractor shall not within the 10 days receive such instruction, he shall proceed with the work conforming to the provisions, regulations or bylaws in questions.

The Contractor shall bring to the attention of the Architect all notices required by the said acts, regulations or bylaws to be given to any Authority, and pay to such authority or to any Public Officer all fees that may be properly chargeable in respect of the works, and lodge the receipts with the Architect /Employer.

The Contractor shall identify the Employer against all claims in respect of patent rights, designs, trade marks or name or the protected rights in respect of any constructional plant, machine, work or material used for or in connection with the works or temporary works and from and against all claims, demands, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall defend all actions arising from such claims, unless he has informed the Architects, before any such infringement and received their permission to proceed and shall himself pay all royalties, license fees, damages, coat and charges of all and every sort that may be legally incurred in respect thereof.

**7. TAXES AND DUTIES**

The tenderers must include in their tender prices quoted for all duties royalties, cess and sales tax, works contract tax or any other taxes or local charges if applicable. No extra claim on this account will in any case be entertained.

**8. NOTICES AND STATUTORY REGULATIONS:**

The contractor shall give all notices and pay all fees and shall comply all Acts and Regulations for the successful completion of the contract works. The whole of the work is to be complied with as per the requirements and bylaws of the relevant statutory authorities including contract labour (Regulation and Abolition) Act 1970.

**9. QUANTITY OF WORK TO BE EXECUTED**

The Schedule of Quantities unless otherwise stated shall be deemed to have been prepared in accordance with the Standard Procedure of the Architects shall be considered to be approximate and no liability shall attach to the Architect for any error may be discovered therein. The Employer reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore.

The Contractor shall be deemed to have satisfied himself before tendering to the correctness and sufficiency of his tender for the works and of the prices stated in the Schedule of Quantities and / or the Schedule of Rates and Prices, which rates and prices shall cover all things necessary for the completion of the works.

**10. OTHER PERSONS ENGAGED BY THE EMPLOYER**

The Employer reserves the right to execute any part of the work included in this contract or any work, which is not included in this contract by the other Agency, or persons and contractor shall allow all reasonable facilities and use of his scaffoldings for the execution of such work. The main contractor shall extend all cooperation in his regard.

**11. EARNEST MONEY AND SECURITY DEPOSITS**

The tenderer will have to deposit an amount of **RS.45,000/-** in the form of **Bank draft drawn in favour of The Zonal Manager, BANK OF MAHARASHTRA ZONAL OFFICE PAYABLE AT HYDERBAD** at the time of submission of tender as an Earnest money. The employer is not liable to pay any interest on the earnest money. The Earnest money of the unsuccessful tenderers will be refunded without any interest soon after the decision to award the work is taken after the expiry of the validity period of the tender. The successful tenderer to whom the contract is awarded will have to deposit as initial security deposit a further sum to make up 2% of the value of the accepted tender including the Earnest Money. The initial security deposit will have to be made within 14 days from the date of acceptance of tender, failing which the employer at his discretion may revoke the letter of acceptance and forfeit the earnest money deposit furnished along with the tender. It shall be refunded to the contractor within 14 days on completion is issued by the architect.

Apart from the initial security deposit made as above, retention money shall be deducted from progressive running bills @ 8% of the gross value of each running bill until the total security deposit, i.e., the initial security deposit plus the retention money equals:

- a) 10.00% on the first Rs. 1,00,000 of the cost of work.
- b) 7.5% on the next Rs.1,00,000 of the cost of work.
- c) 5.0% on the next amount i.e. Balance amount.
- d) Total Security Deposit EMD (2%) + FSD (8%)

EMD will be refunded after completion of work and on Issue of virtual completion certificate by the Architect / Bank.

**12. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY**

The Contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specifications taken together whether the same may or may not be particularly shown

or described therein provide that the same can reasonably be inferred there from and if the contractor finds any discrepancies therein he shall immediately and in writing , refer the same to the Employer / Architects whose decision shall be final and binding.

**13. TIME OF COMPLETION, EXTENSION OF TIME & PROGRESS CHART**

The Contractor shall be allowed admittance to the site on the 'Date of Commencement' stated in the Appendix, and he shall thereupon and forthwith begin the works and shall regularly proceed with to complete the same (except such painting or other decorative work as the Architect may desire to delay). On or before the 'Day of Completion' stated in the Appendix subject nevertheless the provision for the extension of time hereinafter contained.

If in the opinion of the Architect the works be delayed:

By force major or

By reason of any exceptionally inclement weather or

- c. By reason of proceedings taken or threatened by or dispute with adjoining or neighboring owners of public authorities arising, than through the Contractor's won default or
- d. By the works or delays of the contractors tradesmen engaged or nominated by the Employer / Architect and not referred in the Schedule of Quantities and / or specifications or
- e. By reason of civil, commotion, local combination of workmen or strike or lock-out effecting any of the buildings traders or
- f. By reason of the Architect's instructions as per clause 2, or
- g. In consequence of the Contractor not having in due time, necessary instructions from the Architect for which he shall have specifically applied in writing ahead of time, giving the Architect reasonable time to prepare such instructions, the Architects shall make a fair and reasonable extension of time for completion of the Contract works

In case of such strike or lock-out, the Contractor shall as soon as possible, give written notice thereof the Architect, but the Contractor shall nevertheless constantly use his endeavors to prevent delay and shall do all they may reasonably be required, to the satisfaction of the Architect to proceed with the work.

The Contractor on starting the works shall furnish to the Employer / Architect a PERT / CPM Programme for carrying out the work stage in the stipulated time fore the approval of Architect / Employer and follow strictly the approved time schedule incorporating charges if any, to ensure the completion of the work in stipulated time. A graph or chart on individual work shall be maintained showing the proportionate progress of work week by week by Architect a weekly progress report stating the number of skilled and un skilled laborers employed on the work, working hours done, place, type, and quantity of work done during the period.

The Contractor must inform the Architect within 10 days in advance of all drawings and detailed required by him from time to time. The Contractor shall

Adhere to the approved program and arrange for the materials and labour etc accordingly.

Despite repeated instructions, if the Contractor fails to show proportionate progress of the work, the Architect / Employer may take suitable action and deemed fit without prejudice to any terms and conditions of the contract

#### 14. **LIQUIDATED DAMAGES**

Should the work be not completed to the satisfaction of the Employer / Architects within the stipulated period, the contractor shall be bound to pay to the Employer a sum calculated as given below by way of liquidated damages and not as penalty during which the work remains uncommenced or unfinished after the expiry of the completion date.

If the contractor fails to complete the work by the Scheduled date of completion or within any sanctioned extended time, he will have to pay liquidated damages at 1% of contract amount for each week beyond the date that the work remains incomplete subject to maximum of 10%of the contract value (without extra items).

#### 15. **NOTICE AND PATENTS OF APPROPRIATE AUTHORITY AND OWNERS**

The contractor shall conform to the provisions of any Acts of the Legislature relating to the work, and to the Regulations and Bye-Laws of any authorities, and / or any water,

lighting and other companies, and / or authorities with whose systems the structures were proposed to have connection and shall before making any variations from the drawings or specifications that may be associated to so conform, give the Employer / Architects written notices specifying the variations proposed to be made and reasons for making them and apply for instruction thereon. The Employer / Architects written notices specifying the variations proposed to be made and reasons for making them and apply for instruction thereon. The Employer / Architects on receipt of such intimation, shall give a decision within a reasonable time.

The contractor/s shall arrange to give all notices required for by the said Acts, Regulations or Bye-laws to be given to any authority, and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the Employer.

The contractor shall indemnify the Employer against all claims in respect of patent rights, royalties, damages to buildings, roads or members of public in course of execution of work and shall defend all actions arising from such claims and shall keep the Employer saved harmless and indemnified in all respects from such actions, costs and expenses.

#### 16. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS.

All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workmanlike manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars, and instructions as may from time to time be given by the Employer / Architects during the execution of the work and to his entire satisfaction.

**All mandatory tests shall be carried out as per CPWD specifications. If required by the Employer / Architects, the contractor shall have to carry out tests on materials and workmanship in approved materials testing laboratories or as prescribed by the Employer / Architects at his own cost to prove that the materials etc., under test conform to the relevant I.S Standards or as specified in the specifications.** The necessary charges for preparation of mould (in case of concrete cube), transporting, testing etc., shall have to be borne by the contractor. No extra payment on this account should in any case be entertained.

All the materials (except where otherwise described) stores and equipment required for the full performance of the work under the contract must be provided through normal channels and must include charges for import duties, sales tax, octroi and other charges and must be the best of their kind available and the contractors must be entirely responsible for the proper and efficient carrying out of the work. The work must be done in the best workmanlike manner. **Samples of all materials to be used must be submitted to the Employer / Architects when so directed by the Engineer / Architects and written approval from Employer / Architects must be obtained prior to placement of order.**

Any damage (during constructions) to any part of the work for any reasons due to rain, storm or neglect of contractor shall be rectified by the contractor in an approved manner at no extra cost.

Should the work be suspended by reason of rain, strike, lockouts or any other cause, the contractor shall take all precautions necessary for the protection of work and at his own expenses shall make good any damage arising from any of these causes.

The contractor shall cover up and protect from damage, from any cause, all new work and supply all temporary doors, protection to windows, and any other requisite protection for the execution of the work whether by himself or special tradesmen or sub-contractor and any damage caused must be made good by the contractor at his own expenses.

#### 17. **REMOVAL OF IMPROPER WORK**

The Employer shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Employer / Architects are not in accordance with specification or instructions, the substitution or proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions. In case the contractor refuses to comply with the order the Employer shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as certified by the Employer / Architects shall be done by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate, which may be given by the Architects, shall relieve the contractor from his liability in respect of unsound work or bad materials.

#### 18. **SITE ENGINEER**

The Employer may appoint a Site Engineer or clerk of works who shall be representative of the Employer and also of the Architect. The duties of the Employer representative are to watch and supervise the works and to test any materials to be used of workmanship employed in connection with the works. He shall have no authority either to relieve the Contractor of any of his duties or obligations under the Contract, or except those expressly provided hereunder, to order any work involving delay or any extra payment by the Employer or any variation of or in the works.

The contractor shall afford the Employer's representative every facility and assistance for examining the works and materials and checking the measuring time and materials. Neither the Employer's representative nor any Deputy to the Architect shall have power to revoke, alter enlarge or relax the requirements of this Contract, or to Sanction any day-work, additions, alterations, deviations or omissions unless such an authority may be specially conferred by a written order of the Architect / Employer.

The Employer's Representative shall have to give notice to the Contractor or his foremen about the non-approval of any work or materials and such works shall be suspended or the use of such material should be discontinued until the decision of the Architect is obtained, the work will from time to time be examined by the Architect or the Employer's representative but such examinations shall not in any way exonerate the Contractor from the obligation to remedy defects which may be found to exist at any stage of the work of after the same is completed. Subject to the limitations of this cause, the Contractor shall take instruction from the Architect / Employer.

#### 19. **CONTRACTOR'S EMPLOYEES**

The Contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the working hours to receive and comply with instructions of the Employer / Architects. The contractor shall engage at least one experienced Engineer as site-in-charge for execution of the work. The contractor shall employ in connection with the work persons having the appropriate skill or ability to perform their job efficiently.

The contractor shall employ local labourers on the work as far as possible. No labourer below the age of sixteen years and who is not an Indian National shall be employed on the work.

Any labourer supplied by the contractor to be engaged on the work on day work basis either wholly or partly under the direct order or control of the Employer or his representative shall be deemed to be a person employed by the contractor.

The contractor shall comply with the provisions of all labour legislation including the requirements of

- a) The payment of Wages Act.
- b) Employer's Liability Act.
- c) Workmen's Compensation Act.
- d) Contract Labour (Regulation & Abolition) Act. 1970 and Central Rules 1971
- e) Apprentices Act 1961
- f) Minimum Wages Act
- g) Any other Act or enactment relating thereto and rules framed there under from time to time.

The contractor shall keep the Employer saved harmless and indemnified against claims if any of the workmen and all costs and expenses as may be incurred by the Employer in connection with any claim that may be made by any workmen.

The contractor shall comply at his own cost with the order for requirement of any Health Officer of the State or any local authority or of the Employer regarding the maintenance of proper environmental sanitation of the area where the contractor's labourers are housed or accommodated, for the prevention of small pox, cholera, plague, typhoid, malaria and other contagious diseases. The contractor shall provide, maintain and keep in good sanitary condition adequate sanitary accommodation and provide facilities for pure drinking water at all times for the use of men engaged on the works and shall remove and clear away the same on completion of the works. Adequate precautions shall be taken by the contractor to prevent nuisance of any kind on the works or the lands adjoining the same.

The contractor shall arrange to provide first aid treatment to the labourers engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works report such accident to the Employer and also to the competent Authority where such report is required by law.

## **20. DISMISSAL OF WORKMEN**

The contractor shall on the request of the Employer immediately dismiss from works any person employed thereon by him, who in the opinion of the Employer be unsuitable or incompetent or who may misconduct him. Such discharges shall not be the basis of any claim for compensation or damages against the Employer or any of their officer or employee.



**21. ASSIGNMENT**

The whole of the works included in the contract shall be executed by the contractor and the contractor shall not directly or indirectly transfer, assign or underlet the contract or any part, share or interest therein nor, shall take a new partner, without written consent of the Employer and no subletting shall relieve the contractor from the full and entire responsibility of the contract or from active superintendence of the work during their progress.

**22. DAMAGE TO PERSONS AND PROPERTY INSURANCE ETC**

The contractor shall be responsible for all injury to the work or workmen to persons, animals or things and for all damages to the structural and / or decorative part of property which may arise from the operations or neglect of himself or of any sub-contractor or of any of his or a sub-contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shall be held to include inter-alia, any damage to buildings whether immediately adjacent or otherwise, and any damage to roads, streets, foot paths or ways as well as damages caused to the buildings and the works forming the subject of this contract by rain, wind or other inclemency of the weather. The contractor shall indemnify the Employer and hold harmless in respect of all and any expenses arising from any such injury or damages to the person or property as aforesaid and also in respect of any claim made in respect of injury of damage under any acts on compensation or damage consequent upon such claim.

The contractor shall reinstate all damages of every sort mentioned in this clause so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property of third parties. The contractor shall affect the insurance necessary and indemnify the Employer entirely from all responsibility in this respect. The insurance must be placed with a company approved by the Employer and must be effected jointly in the name of the Employer and contractor and the policy lodged with the Employer. The scope of insurance is to include damage or loss to the contract itself till this is made over in a complete state. Insurance is compulsory and must be affected from the very initial stage. The contractor shall also be responsible for any thing, which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this contract.

The Employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or accruing from or in respect of any such claim or damages from any sums due to or to become due to the contractor.

**23. MEASUREMENTS**

Before taking any measurement of any work the Site Engineer or a subordinate deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend at the measurements after such notice or fails to countersign or to record the difference within a week from the date of measurement in the manner required by Site Engineer or by the subordinate deputed by him as the case may be is final and binding on the contractor and contractor shall have no right to dispute the same.

The Employer / Architect shall issue a certificate after due scrutiny of the contractor's bill stating the amount due to the contractor from the Employer and the contractor shall

be entitled to payment thereof, within the period of honouring certificates named in these documents.

#### **24. PAYMENTS**

All bills shall be prepared by the contractor in the form prescribed by the Employer's / Architects. Normally one interim bill shall be prepared each month subject to minimum value for interim certificate as stated in these documents. The bills in proper forms must be duly accompanied by detailed measurements in support of the qualities of work done and must show deductions for all previous payments, retention money, etc.

The Employer / Architect shall issue a certificate after due scrutiny of the contractor's bill stating the amount due to the contractor from the Employer and the contractor shall be entitled to payment thereof, within the period of honouring certificates named in these documents.

The Employer will deduct retention money as described in clause 11 of these conditions. The refund of retention money will be made as specified in the said clause.

**If** the Employer has supplied any materials or goods to the contractor, the cost of any such materials or goods will be progressively deducted from the amount due to the contractor in accordance with the quantities consumed in the work.

**All** the interim payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed, and shall not preclude the requiring of bad, unsound, and imperfect or unskilled work to be removal and taken away and reconstructed, or re-erected or be considered as and admission of the due performance of the contract, or any part thereof in any respect or the accruing of any claim, nor shall, it conclude, determine or affect in any way the power of the Employer under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract. The final bill shall be submitted by the contractor within one week of the date fixed for completion of the work or of the date of certificate of completion furnished by the Architect and payment shall be made within one week from the date of receipt of Architect's certificate.

#### **Final Payment**

The final bill shall be accompanied by a certificate of completion from the Employer / Architects. Payments of final bill shall be made after deduction of Retention Money as specified in clause 11 of these conditions, which shall be refunded after the completion of the Defects Liability Period after receiving the Employer's / Architect's certificate that the contractor has rectified all defects to the satisfaction of the Employer / Architects. The acceptance of the payment of the final bill by the contractor would indicate that he has no further claim in respect of the work executed.

#### **25. VARIATION / DEVIATION**

The tender rates shall be fixed and applicable for any increase or decrease in the tendered quantities. The Employer / Architect can increase or decrease any quantities to any extend or even delete particular item as per the site requirements and the contractor shall not be paid any thing extra on this account. Nothing extra will be paid by the Bank on account of omission / deletion of items or decrease in the quantity of items. The Bank shall not entertain any claim whatsoever from the contractor on this account.

The price of all additional items / non-tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing. If similar items are not available, the rates for such items will be derived as per standard method of rate

analysis based on prevalent fair price of labour, material and other components as required with 15% towards contractor's profit and overheads.

**26. SUBSTITUTION**

Should be contractor desire to substitute any materials and workmanship, he/they must obtain the approval of the Employer / Architects in writing for any such substitution well in advance. Materials designated in this specification indefinitely by such term as "Equal" or "Other approved" etc. specific approval of the Employer / Architect has to be obtained in writing.

**27. CLEARING SITE ON COMPLETION**

On completion of the works the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the Employer/Architects.

**28. DEFECTS AFTER COMPLETION**

The contractor shall make good at his own cost and to the satisfaction of the Employer all defects, shrinkage, settlements or other faults, which may appear within 12 months after completion of the work. In the default, the Employer may employ and pay other persons to amend and make good such damages, losses and expenses consequent thereon or incidental thereto shall be made good and borne by the contractor and such damages, loss and expenses shall be recoverable from him by the Employer or may be deducted by the employer, in lieu of such amending and making good by the contractor, deduct from any money due to the contractor a sum equivalent to the cost of amending such work and in the event of the amount retained being insufficient recover that balance from the contractor from the amount retained under clause no.11 together with any expenses the Employer may have incurred in connection therewith.

**29. CONCEALED WORK**

The contractor shall give due notice to the Employer/Architects whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the opinion of the Employer/ Architect be either opened up for measurement at the contractor's expenses or no payment may be made for such materials. Should any dispute or differences arise after the execution of any work as to measurements etc., or other matters which cannot be conveniently tested or checked, the notes of the Employer / Architects shall be accepted as correct and binding on the contractor.

**30. IDLE LABOUR**

Whatever the reasons may be, no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

**31. SUSPENSION OF WORKS**

If the contractor except on account of any legal restraint upon the Employer preventing the continuance of the work or in the opinion of the Employer shall neglect or fail to proceed with due diligence in the performance of his part of the contract or if he shall more than once make default, the Employer shall have the power to give notice in

writing to the contractor requiring the work to be proceeded within a reasonable manner and with reasonable dispatch, such notice purport to be a notice under this clause.

After such notice shall have been given, the contractor shall not be at liberty to remove from the site of the works or from any ground contiguous thereto any plant or materials to subsist from the date of such notice being given until the notice shall have been complied with. If the contractor fails to start the work within seven days after such notice has been given to proceed with the works as therein prescribed, the employer may proceed as provided in clause 43. (Termination of Contract by Employer)

### **32. TERMINATION OF CONTRACT BY EMPLOYER**

If the contractor being a company go into liquidation whether voluntary or compulsory or being a firm shall be dissolved or being an individual shall be adjudicated insolvent or shall make an assignment or a composition for the benefit of the greater part, in number of amount of his creditors or shall enter into a Deed or arrangement with his creditors, or if the Official Assignee in insolvency, or the Receiver of the contractor in insolvency, shall repudiate the contract, or if a receiver of the contractor's firm appointed by the court shall be unable within fourteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the employer that he is able to carry out and fulfill the contract, and if so required by the employer to give reasonable security therefore, or if the contractor shall suffer execution to be issued, or shall suffer any payment under this contract to be attached by or on behalf of and of the creditors of the contractor, or shall assign, charge or encumber this contract or any payments due or which may become due to contractor, there under, or shall neglect or fail to observe and perform all or any of the acts matters of things by this contract, to be observed and performed by the contractor within three clear days after the notice shall have been given to the contractor in manner hereinafter mentioned requiring the contractor to observe or perform the same or shall use improper materials of workmanship in carrying on the works, or shall in the opinion of the employer not exercise such due diligence and make such progress as would enable the work to be completed within due time agreed upon, and shall fail to proceed to the satisfaction of the employer after three clear das notice requiring the contractor so to do shall have been given to the contractor as hereinafter mentioned or shall abandon the contract, then and in any of the said cases, the Bank may notwithstanding previous waiver determine the contract by a notice in writing to the effect as hereinafter mentioned, but without thereby effecting the powers of the employer of 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 determine and as if the works subsequently executed by or on behalf of the contractor (without thereby creating any trust in favour of the contractor) further the employer or his agent, or servants, may enter upon and take possession of the work and all plants tools scaffolding sheds machinery, steam, and other power, utensils and materials lying upon premises or the adjoining lands or roads and sell the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other contractors or other persons or person to complete the works, and the contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other contractors or other persons or person employed from completing and finishing or using the materials and plants for the works when the works shall be completed, or as soon thereafter as conveniently may be the employer shall give notice in writing to the contractor to remove his surplus materials

and plants and should the contractor to remove his surplus materials after receipt by him the employer may sell the same by Public Auction and shall give credit to the contractor for the amount so realized. Any expenses or losses incurred by the contractor for the amount so realized. Any expenses or losses incurred by the employer in getting the amount payable to the contractor by way of selling his tools and plants or due on account of work carried out by the contractor prior to engaging other contractors or against the Security Deposit.

### 33. ARBITRATION

All disputed 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 this contract or effect thereof or to the rights or liabilities of the parties or arising out of or in relation thereto whether during or after determination foreclosure or breach of the contract (other than those in respect of which the decision of any person is by the contract expressed to be final and binding) shall after written notice by either party to the contract to the other of them and to the Employer hereinafter mentioned be referred for adjudication to a sole Arbitrator to be appointed as hereinafter provided.

For the purpose of appointing the sole Arbitrator referred to above, the Employer will send within thirty days of receipt of the notice, to the contractor a panel of three names of persons who shall be presently unconnected with the organization for which the work is executed from the following categories of Arbitrators”:-

- a. Retired High Court/Supreme Court judge who have experienced in handling Arbitration Cases.
- b. Member of Council of Arbitrators
- c. Fellow of the Institution of Engineers
- d. Eminent Retired Chief Engineer from State/Central PWD/Public sector undertaking of good reputation and integrity
- e. Fellow of Indian Institute of Architects

The contractor shall on receipt of the names as aforesaid, select any one of the persons name to be appointed as a sole Arbitrator and communicate his name to the Employer within thirty days of receipt of the names. The Employer shall thereupon without any delay appoint the said person as the Sole Arbitrator. If the contractor fails to communicate such selection as provided above within the period specified, the Competent Authority should make the selection and appoint the selected person as the Sole Arbitrator.

If the Employer fails to send to the contractor the panel of three names as aforesaid within the period specified, the contractor shall send to the Employer a panel of three names of persons who shall all be unconnected with either party. The Employer shall on receipt appoint him as the Sole Arbitrator. If the Employer fails to select the person and appoint him as the Sole Arbitrator within 30days of receipt of the panel and inform the contractor accordingly, the contractor shall be entitled to appoint one of the persons from panel as the Sole Arbitrator and communicate his name to the Employer.

If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another Sole Arbitrator shall be appointed as aforesaid.

The work under the Contract shall, however, continue during the arbitration proceedings and no payment due or payable to the contractor shall be withheld on account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issued notice to both the parties fixing date of the first hearing.

The Arbitrator may from time to time, with the consent of the parties, enlarge the time for making and publishing the award.

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 give a reasoned award. The venue of arbitration shall be such place as may be fixed by the Arbitrator in his Sole discretion.

The award of the Arbitrator shall be final and binding on the both the parties.

Subject to aforesaid the provisions to the Arbitration Act. 1992 or any statutory modification or re-enactment thereof and the rules made there under, and for the time being in force, shall apply to the arbitration proceeding under this clause.

The Employer and the contractor hereby also agree that arbitration under clause shall be condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

### **SPECIAL CONDITIONS OF CONTRACT**

#### **1. DRAWINGS AND SPECIFICATIONS**

The works shall be carried out to the entire satisfaction of the EMPLOYER and the Architect, in accordance with the signed drawings and specifications and such further drawings and details as may be provided by the Architect, and in accordance with such written instructions, directions and explanations as may from time to time be given by the Architect, whose decision as to the sufficiency and quality of the work and materials shall be final and binding upon all parties. If the work shown on any such further drawings or work that may be necessary to comply with any such instructions directions or explanations, be in the opinion of the contractor extraction that comprised in or reasonably to be inferred from the contract he shall before proceedings with such work, give notice in writing to this effect to Architect, and in the event of the Architects agree to the same in writing the contractor shall be entitled to an allowance in respect of such extra work as on authorized extra. If the Architect and the contractor fail to agree as to whether or to there is an extra, then, if the Architect decided that the contractor is to carry out the said work, the contractor shall do so, and the question whether or not there is any extra, and it so the amount thereof, shall failing agreement, be settled by Arbitration as hereinafter provided, but such references shall in no way delay the fulfillment of this contract.

No drawings shall be taken as in itself an order for variation unless, in addition to the Architect's signature, it bears express words stating that is intended to be such an order or bears a remark '**VALID FOR EXECUTION**'. No claim for payment for extra work shall be allowed unless the said work shall have been executed under the provisions of

clause 6 (Authorities notices, patent right and royalties) or by the Authorities of directions in drawing of the Architect as herein mentioned.

One complete set of the signed drawings and specification and scheduled of quantities shall be furnished by the Architect to the Contractor. The Architect shall furnish within such time, as he may consider reasonable, one copy of any additional drawing, which is his opinion, may be necessary for the execution of any part of work. Such copies shall be kept at the works, and the architect or his representatives shall, at all reasonable time have access to the same and shall be return to the Architect by the contractor before the issue of the Final certificate. The contract shall remain in the custody of the Architect, and shall be produced by him at his office as and when required by the Employer or by the contractor.

## 2. INSPECTION OF DRAWINGS

Before filling in the tender, the contractor will have to check up all drawings and schedule of quantities, and will have to get an immediate clarification from the Architect on any point that he feels is vague or uncertain. No claim of damages or compensation will be entertained on this account.

## 3. EXECUTION OF WORK (PRICES TO INCLUDE)

The whole of the work is described in the contract a (including the schedule of Quantities, the specifications and all drawing pertaining there to) and as advised by Employer / Architect from time to time is to be carried out and completed in all its parts to the entire satisfaction of the Employer /Architect. Any minor details of the work which may not have been definitely referred to in this contract, but which are usual in practice and essential to the work, are deemed to be include in this contract. Rates quoted in the Schedule shall be inclusive of all freights, taxes, such as octroi, sales tax, Royalties, duties, excise, turnover tax, sales tax on works contract, etc., as well as transportation, so as to execute the contractor as per the rules and regulations of Local Bodies, State Government and Government of India.

The rates quoted in the tender should include all charges for:

Labor, maintenance fixing, carrying, cleaning, making good, hauling, watering etc

- b. Plant, machinery, scaffolding, framework, English ladders, ropes, nails, spikes, tools, materials and workmanship protection from weather, shuttering, temporary supports, platform and maintenance of the same.
- c. Covering for the walling and other works during inclement weather or striking or whenever directed as necessary.
- d. **The Contractor will have to liaison with various concerned authorities to obtain various N.O.C.'s at beginning of work, during the work or at completion stage, N.O.C. obtaining permanent water connection (in our case it would be from Mumbai Municipal Corporation or any other authority), necessary drawings or assistance shall be given by the Architect if found necessary actual legal charge paid in behalf of Clients for which receipt is issued against it, will be reimbursed by the Owner.**

**4. SITE SUPERVISION**

The contractor shall appoint at his own cost competent and adequate number of qualified Engineers at site, for (1) joint measurements and preparations of bills, (2) for testing materials at site and outside laboratory, (3) for other general supervision. Their appointment shall be approved by the Employer / Architect. The site Engineers shall not be removed from the site without the written consent of the Employer / Architect.

**5. DIMENSIONS**

Figures, dimensions, are in all case to be accepted preferences to scaled sizes. Large-scale details take precedence over small-scale drawings. In case of discrepancy, the contractor is to ask for a clarification before proceeding with the work. Accordingly if any work is executed without prior clarification it is liable to be rejected and shall not be paid for.

**6. PROGRAMME OF WORKS**

Contractor shall have to prepare and submit the CPM/PERT charges for Architect's approval immediately after issue of the work order and display the approved charts in the site office. He shall also make bar charts indicating individual items and during the progress of work he shall update the bar charts showing the proportionate progress of work every week.

He shall strictly adhere to the programme of works as per CPM/PERT charts showing the proportionate progress of work.

**7. PROCUREMENT OF MATERIALS**

Contractor shall procure all the materials for the work from the open market. Time is the essence of the contract. Acceptance of the completion date by the contractor shall mean that he has taken into consideration the availability of all material of approved make and quality in sufficient quantities at site to enable him to complete the entire work in the stipulated period.

Contractor will get sample of all materials approved by the Employer / Architect before placing order / purchase / procurement. They shall conform to I.S. codes and or tender specification as applicable.

For all materials the contractor shall quote for the best quality of the materials of best make / source or supply and it will be got approved by Employer / Architect before procurement.

In case sufficient quantities of approved quality materials from approved source are not available in time, contractor may have to procure the same for neighboring area with longer leads as required and directed at no extra cost. The material will be, however as per relevant I.S code as and wherever applicable.

**8. UNFIXED MATERIALS**

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



**9. CUSTODY AND SECURITY OF MATERIALS**

The contractors shall be responsible for the custody and security of all materials and equipment at site and he will provide full time watchman / watchmen to lock after his materials, stores equipments etc.

**10. RATES**

Contractor shall quote all the rates both in figures and in words and any alterations shall have to be initiated by the contractor. Rates quoted by the contractor for the same item in different schedules will be same and in case different rates are quoted, the lowest will be taken as correct and the schedule corrected accordingly. In case of discrepancy between figures and the words the rate quoted in words shall be taken as correct one. All quoted rates should be inclusive of sales tax on works contract. Rates quoted by the contractor shall hold good for all the work carried out to any height and depth as shown in detailed drawings and as required and directed by the Architect.

Rates quoted by the contractor shall also hold good for any small work at any place at site.

**11. PRICES FOR EXTRAS ETC., ASCERTAINMENT OF**

Should it be found after the completion of the works from measurements taken (in accordance with the previous paragraph) that any of the quantities or amounts of the work thus ascertained are less or greater than the amounts specified for the works in the priced schedule of quantities and / or tender or that any variations, is made, the valuation of such quantities, amounts or variations, unless previously or otherwise agreed upon, shall be made accordance with the following rules

- a. The net rates or prices in the original tender shall determine the valuation of the extra work, where extra work is of a similar character and executed under similar conditions the work priced therein.
- b. The net prices the original tender shall determine the value of the item omitted, provided if omissions vary the conditions under which any remaining items of work are carried out, the prices for the same shall be valued under thereof
- c. Where extra works are not of similar character and / or executed under similar conditions as aforesaid or where the omissions vary, the conditions under which any remaining items of work are carried out of it the amount of any omission or additions relative to the amount of the whole of the contract works or to be any part thereof shall be such that in the opinion of the Architects the net rate or price contained in the priced schedule of quantities or tender or for any item of work involves loss or expenses beyond that reasonably contemplated by the contractor or is by reason of such omission or addition rendered unreasonable or inapplicable, the Architect shall fix in consultation with the Employer such other rate or prices as in the circumstances he shall think reasonable and proper, which shall be final and binding on the contractor.
- d. Where extra work cannot be properly measured or valued, the contractor shall be allowed any 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 local day work rates and wages for the district, provided that in either case vouchers specifying the daily time (and if required by the Architect, the workmen's name) and materials employed at or before the end of the week following that in which the work has been executed.

The measurements and valuations in respect of the extra items of contract shall be completed within the 'period of final measurement' or within three months of the completion of the contract works as defined under clause no 16 (Certificate of Virtual Completion)

**12. EXTRA ITEMS RATES**

The work or extra items shall be started only after the approval of extra items rates by client / Architect. Rates for additional or extra items of construction work, which can be derived from the contract item rates and are not covered in the contract, shall be calculated on the basis of actual cost plus 15 % for profit.

**13. ARCHITECT'S DRAWINGS AND INSTRUCTIONS**

A set of major drawings along with the contract documents shall be provided to the contractor. For any clarifications or further drawings are required by the contract, during or before the start of construction work, the Contractor shall inform the Architects in writing to provide the same. Working details will be given to the contractor from time to time during the progress of work as and when required. In case of other drawing is required by the contractor he will give a minimum ten days notice to the Employer / Architect.

**14. FAILURE BY CONTRACTOR COMPLY WITH ARCHITECT EMPLOYER'S INSTRUCTIONS**

If the contractor after receipt of written notice from the architect requiring compliance with such further drawings and / or Architects instruction, fails within seven days to comply with the same, the Employer / Architect may employ and pay other persons to execute any such work whatsoever as may be necessary to give effect thereto and all cost incurred in connection there with shall be recoverable from the contractors by the Employer on a Certificate by the Architect as a debit or may be deducted by him from any money due or which become due to the Contractors.

**15. INFORMATION TO BE SUPPLIED BY THE CONTRACTOR**

- a. The contractor shall furnish the Employer / Architect the following:
- b. Detailed industrial statistics regarding the labor employed by him etc
- c. The Power of Attorney, name and signature of his authorized representative who will be in charges for the execution of work
- d. The list of technically qualified persons employed by him for the execution of this work.
- e. The total quantity and quality of materials used for the works.
- f. The list of plant and machinery employed for this work.

**16. ARCHITECT'S DELAY IN PROGRESS**

The Architect may delay the progress of the works in case of rains or otherwise, without vitiating the contract and grant such extension of time with the approval of the employer for the completion of the contract as he may think proper and sufficient in consequences of such delay, and the contractor, shall not make any claim for compensation or damage in relation thereto.

**17. CERTIFICATE AND PAYMENTS**

The contractor shall be paid by the Employer from time to time, by installments under interim Certificates to be issued by the Architect to the contractor on account of the

works executed by the contractor when in the opinion of the Architect, work to the approximate value, named in the Appendix as 'Value of work for interim Certificates' (or less at the reasonable discretion of the Employer / Architect) has been executed in accordance with this contract, subject however, to a retention of the percentage of such value need in the Appendix hereto mentioned as 'retention percentage for interim Certificates' until the total amount retained shall reach the sum named in the appendix as Total Retention money after which time the installments shall be up to the full value of the work subsequently so executed in the interim Certificate, such amount as he may consider proper on account materials delivered upon the site by the Contractor for use in the work. And when the works have been virtually completed and the Architect shall have certified in writing that they have been completed, the contractor shall be paid in accordance with the Certificate issued by the Architect the sum of money named in the Appendix after satisfying themselves as 'Installment after Virtual Completion ' being a part of the said 'Total Retention Money'.

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 Architect at the expiration of the period refer to as ' The Defect Liability Period' in the Appendix hereto, from the date of Virtual Completion or as soon as after the expiration of such period as the work shall have been finally completed and all defect made good according to the true intent and meaning hereof, whichever shall happen, provided always that the issue by the Architect of any certificate during the progress of the works or after the completion shall not relieve the Contract from his liabilities in cases of fraud , dishonesty or fraudulent concealment relating to the works of materials or any matter dealt within the certificate, and in case of all defects and insufficiency in the works or materials which reasonable examination would have disclosed. No certificate of the Architect shall of itself be conclusive evidence that any works and materials to which it relates are in accordance with the contract.

The Architect shall have power to withhold any certificate if the works or any part thereof are not being carried out to his / employer satisfaction.

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

Payment upon the Architect's Certificates shall be made within a period named in the Appendix as 'Period of honoring of Certificates' after such Certificates have been delivered to Employer.

#### **18. DELAYED PAYMENTS**

Any amounts payable by the Employer to the contractor in pursuance of any Certificate given by the Architect hereunder shall, if not paid within the 'Period of honoring of Certificate' no interest paid by the Employer.

#### **19. FORCE MAJEURE**

Neither party shall be held responsible by the other for breach of any condition of this agreement attributable to any 'Act of God' Act of state, lockout of control or any other reason, beyond the control of the parties and any breach of clauses arising from much force majeure conditions as aforesaid shall not be regarded as a breach of the provision of this Agreement.

**20. INCOME-TAX AND WORKS CONTRACT TAX**

Income Tax and Works Contract Tax shall be deducted at source by the client from the contractor' interim and final bill payments as per Statutory Regulations.

**21. SITE MEETINGS**

A senior representative of the contractor shall attend weekly meetings at works site and in addition meetings as and when arranged by employer / Architect to discuss the progress of the work and sort out problems, if any and ensure that the work is completed in the stipulated time.

**22. ACTION WHERE THERE IS NO SPECIFICATION**

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

**23. REPORTING OF ACCIDENT TO**

The contractor shall be responsible for the safety of persons employed by him on the works and shall reports serious accidents to any of them whenever and wherever occurring on the works to employer who shall make every arrangement to render all possible assistance. This shall be without prejudice to the responsibility of the contractor under the Insurance Clause of the general conditions. Contractor shall take all precaution detailed in the safety code attached separately.

**24. TYPOGRAPHICAL CLERICAL ERRORS**

The Employer / Architect clarification regarding partially omitted particulars of typographical or Clericals errors shall be final and binding on the contractors.

**25. WORK PERFORMED AT CONTRACTOR'S RISK**

The contractor shall take all precautions necessary and shall be responsible for the safety of the work and shall maintain all lights, goods, signs, temporary passages or other protection necessary for the purpose. All works shall be done by the contractor's risk and if any loss or damage shall result from fire or from others cause, the contractor shall promptly repaid or replace such loss or damage free from all expenses to the employer.

The contractor shall be responsible for any loss or damage to materials, tools or other articles used held for use in connection with the work. The work shall be carried on to completion without interferences with the operations of existing machinery or equipment, if any.

**26. SPECIAL CONDITIONS OF CONTRACT**

In the event of any discrepancy with clauses mentioned anywhere else in the tender with the clauses mentioned within special conditions of contract, the clauses mentioned within the special conditions of contract shall supersede those mentioned elsewhere.

**FORM OF AGREEMENT**

ARTICLES of AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ year 2014 between the Zonal Manager, ZO, BANK OF MAHARASHTRA, 2<sup>ND</sup> Floor Bank Street, KOTI , Hyderabad – 500001(Hereinafter referred to as the “Employer /Owner” which expression shall, unless excluded by or repugnant to the context, includes its successors and assigns) of the ONE PART and \_\_\_\_\_ of \_\_\_\_\_(Hereinafter referred to as “Contractor” unless excluded by or repugnant to the context, includes its successors and assigns) of the OTHER PART.

**WHEREAS the Employer intends to carry out ELECTRICAL works of ZONAL OFFICE & SULTAN BAZAR BRANCH , AT HYDERABAD..**

(Herein referred to as “Project”).

AND WHEREAS the Employer in order to effectively carry out the said works has engaged M/s. ANCHURI DESIGN WORLD (Hereinafter referred to as “Architects”) to prepare plans, drawings and specifications describing the works to be executed by the contractors, namely, ELECTRICAL etc. for the project, to open tenders received at the office of the Employer, to scrutinise and recommend to the Employer the name(s) of the Contractor(s) from whom tenders were received and recommended to the Employer for the issue of work order to the contractor.

AND WHEREAS for the purpose of the said project, the Employer invited sealed tenders from experienced, resourceful and bonafide contractors vide his Notice Inviting Tender (NO. \_\_\_\_\_ dated. \_\_\_\_\_).

WHEREAS the contractor submitted his Tender Documents containing General Notes, General Conditions of the Contract, Technical Specifications and Schedule of Quantities etc. for the works, prepared with the assistance of Consultants (Hereinafter collectively referred to as the “said conditions”), duly signed on each page as a token of his acceptance of the same , along with requisite Earnest Money Deposit of Rs. \_\_\_\_\_ (Copy enclosed Vide Annexure-1).

AND WHEREAS out of the Tenders received, the Tender of the contractor was found to be most suitable for the project.

AND WHEREAS the Employer/Architect has accordingly issued the work order (NO. \_\_\_\_\_ dt. \_\_\_\_\_) to the contractor subject to his furnishing the requisite Security Deposit (Copy enclosed Vide Annexure-II).

AND WHEREAS the Contractor has accepted the aforesaid Work Order vide his letter of acceptance NO. \_\_\_\_\_ dt. \_\_\_\_\_ (Copy enclosed Vide Annexure III) and has also deposited with the Employer a sum of Rs. \_\_\_\_\_ which with the Earnest Money of RS. \_\_\_\_\_ forms the requisite Security Deposit @ 2 % of the accepted Tender Value of Rs. \_\_\_\_\_.

AND WHEREAS the Employer has caused the plans, drawings, specifications, schedule of quantities etc. relating to the project at the work site at to be issued to the Contractor.

NOW , therefore, it is hereby agreed to and between the parties as follows:

Contract documents

The following documents shall constitute the Contract Documents.

I. This Article of Agreement.

II. Tender submitted by the Contractor included the N.I.T and Tender Documents(Vide Annexure-I).

II. All correspondence between the Bank/Architects and the Contractor from the date of issue of N.I.T and the date of issue of work order.

IV. Work order No. \_\_\_\_\_ dt. \_\_\_\_\_ (Vide Annexure-II).

- 2) In consideration of the payments to be made to the Contractor as hereinafter provided the Contractor shall upon and subject to the said conditions, execute and complete the contracted works shown upon the said drawings etc. and such further detailed drawings as may be furnished to the contractor by the said Owner/Employer through the Architects and described in the said Specifications and the said Schedule of Quantities.
- 3) Notwithstanding what are stated in the N.I.T conditions of Tendering, Conditions of Contract of herein before stated by the Employer through the Architects, reserves itself the right of altering the drawings and the nature of the work and addition to or omitting any items of work or of having portions of same carried out departmentally or otherwise and such alterations or variations shall be carried out without prejudice to this contract.
- 4) As mentioned in Article 1 above, the said conditions shall be read and be treated as forming part of this agreement and parties hereto will respectively be bound thereby and to abide by and submit themselves to the conditions and stipulations and perform the same on their parts to be respectively observed and preferred.
- 5) Any dispute arising under this agreement shall be referred to the Arbitration in a manner specified in the General Conditions of the Contract and all legal disputes shall be limited within the territorial jurisdiction of the Hyderabad thereto. The decision of the arbitration shall be final and binding on both the parties.

IN WITNESS WHEREOF THE PARTIES to there presents have hereunder set and subscribed their hands, the    day, month and year first above written.

Signed and delivered for and on behalf of

BANK OF MAHARASHTRA

Shri. \_\_\_\_\_

\_\_\_\_\_  
Its duly authorized official

In the presence of –

1. (Name and Address)

2. (Name and Address)

Signed and delivered for and on behalf of The Contractor \_\_\_\_\_ by

Shri \_\_\_\_\_ his Duly authorized official In the presence of –

1. (Name and Address)

2. (Name and Address)

**SCHEDULE OF APPROXIMATE QUANTITIES AND RATE**

1. The quantities given herein are those upon which the lumpsum cost of the work is based. They are subjected to alterations omissions, deductions or additions as provided for in the conditions of this contract and do not necessarily show the actual quantities of the work to be done. The unit rate noted below are those governing payment of extras or deductions for omissions, according to the conditions of the contract as set forth in the preliminary specifications of the Andhra Pradesh detailed standard specifications and other conditions or specifications of this contract.
2. It is to be expressly understood that the measured work is to be taken net (notwithstanding) any custom or practice to the contrary according to the actual quantities when in place and finished according to the drawings or as may be directed from time to time by the Architects, and the cost calculated by measurements or weight, at the respective prices, without any additional charge for any necessary or contingent works connected there with. The rates quoted are for work in site and complete in every respects.
3. If any operation of work, which is specified in the respective items mentioned in the schedule of quantities, is not executed by the contractor then proportionately the rate quoted in the schedule shall be refixed.

**ELECTRICAL SPECIFICATIONS AND OTHER CONDITIONS:****CONTENTS:**

- A) SPECIAL CONDITIONS
- B) TECHNICAL SPECIFICATIONS
  - Chapter 1 INTERNAL ELECTRIFICATION*
  - Chapter 2 POWER CONTROL CENTERS*
  - Chapter 3 LAYING OF CABLES*
  - Chapter 4 EARTHING*
  - Chapter 5 STANDARD DRAWINGS*
  - GI PIPE EARTH STATION*

- C) RECOMMENDED MAKES OF MATERIAL
- D) SCHEDULE OF QUANTITIES

**SPECIAL CONDITIONS****1. General:**

1.1 These special conditions shall be read in conjunction with the description of the item of work in the Bill(s) of Quantities, the particular Specifications, Local Statutory Regulations, Indian Standards Specifications/Codes and the drawings. All the above quoted documents, shall be considered supplementary to each other. However, in the case of conflict amongst the various provisions the owner's and the consultants opinion will be final and shall be adopted.

1.2 The tenderer is advised to inspect the site to ascertain the nature of site, access thereto, local facilities for procurement of materials and working labour rates prevalent in the area, in fact all matters affecting his prices and execution of the work. The tenderer shall be deemed to have full knowledge of the site and drawings whether or not he actually inspects them.

**2. Rates**

2.1 The rates quoted shall be deemed to allow for all minor extras and constructional details which are not specifically shown on drawings or given on the specifications but are essential in the opinion of the Engineer-in-charge to the execution of works to conform to good workmanship and sound engineering practice. The Consultant/Employer reserves the right to make any minor changes during the execution without any extra payment.

2.2 The Consultants decision to clarify any item under minor changes, minor extras and constructional details shall be final, conclusive and binding on the Contractor.

2.3 The rates quoted by the Contractor shall be net so as to include all requirements described in the contract agreement and no claim whatsoever due to fluctuations in the price of material and labour will be entertained.

2.4 The rates quoted by the Contractor shall include for supplying materials and labour necessary for completing the work in the best and most workmanship like manner to the satisfaction of the Consultant/Employer and which in the opinion of the Consultant cannot be made better, and for maintaining the same. The rates shall be complete in all respects also including cost of materials, erection, fabrication, labour, supervision, tools and plant, transport, sales and other taxes royalties, duties and



materials, contingencies, breakage, wastage, sundries, scaffoldings, etc., on the basis of works contract. The rates quoted shall include all taxes, duties, transport, insurance, octroi, or any other levies applicable under the statute.

### **3.0 Materials:**

3.1 The Contractor shall ensure to the satisfaction of the Consultant/Employer that the materials are packed in original sealed containers/packing bearing manufacturer's markings and brands etc., except where the gross quantity required is a fraction of the smallest packings. Materials not complying with this requirement shall be rejected.

#### **3.2 Testing of Materials:**

a) When required by the Consultant, the Contractor shall provide all facilities at site or at manufacturer's works or in an approved laboratory for testing the materials and/or workmanship. All the expenditure in respect of this shall be borne by the Contractor unless specified otherwise in the Contract. The Contractor shall, when required to do so by the Consultant shall submit at his own cost, manufacturer's certificate of tests, proof sheets, mill sheets etc., showing that the materials have been tested in accordance with requirements of these specifications. The samples for Tests shall be selected by the Client/ Consultant.

### **4.0 Rectification of Defects:**

4.1 Any defect in the work done or materials used in the works pointed out by the Consultant shall be rectified within a week or such extended time as may be allowed in this failing which the said defect shall be got rectified by the Consultant at the risk and cost of the Contractors.

### **5.0 Conduit and Cables Layout :**

5.1 Prior to the pulling of wires, the Contractor shall verify the conduits laid at site by Civil Contractors and satisfy themselves about the adequacy of the same. The contractors shall prepare Wiring layout along with Conduit layout and submit for approval. Prior to laying of the cables, the Contractor shall submit to the Consultant detailed layout plans of the cable net work and get the same approved. The layout plans shall contain particulars regarding size and routes of the cables. The Cables shall be procured only after approval of Layout Drawings.

### **6.0 Regulations & Standards :**

6.1 The installation shall conform in all respects to Indian Standard Code of Practice for Electrical Wiring Installation IS:732 and IS:2274. It shall also be in conformity with the current Indian Electricity Rules and Regulations and requirements of the local Electric Supply Authority in so far as these become applicable to the installation. Wherever this specification calls for higher standard of material and/or workmanship than those required by any of the above regulations then this specification shall take precedence over the said regulations and standards.

### **7.0 Shop Drawings :**

7.1 The Contractor shall prepare and submit to the Consultant for the approval of detailed fabrication drawings for Main LT Panels/SwitchGears/Rising Mains special boxes and Distribution Board, switch board, special any other equipment to be fabricated by Contractor within 60 days of signing of the contract.

### **8.0 Completion Drawings :**

8.1 At the completion of the work and before issuance of certificate of virtual completion the contractor shall submit to the consultant/Employer layout drawings drawn at approved scale indicating the complete wiring system "As Installed". These drawings shall in particular, give the following information.

- (a) Run and size of conduits, inspection, junction and pull boxes.
- (b) Location and rating of sockets and switches, controlling the light and power outlets.
- (c) Number and size of conductors in each circuit.
- (d) Location and details of distribution boards, mains, switches, switchgear and other particulars.
- (e) A complete wiring diagram, as installed and schematic drawings showing all connections in the complete electrical system.
- (f) Location of telephone outlets, T.V. Music & Fire Alarm outlet boxes, junctions boxes, sizes of various conduits.
- (g) Locations of all earthing stations, routes and size of all earthing conductors, manholes etc.
- (h) Layout and particulars of all cables.

#### **9.0 Manufacturer's Instructions:**

9.1 Where manufacturers have furnished specific instructions, rating to the materials used in this job, covering points not specifically mentioned in the documents, these instructions shall be followed in all cases.

#### **10.0 Completion Certificate :**

10.1 On completion of the Electrical Installation a certificate shall be furnished by the Contractor counter signed by a licensed supervisor, under whose direct supervision the installation was carried out.

This certificate shall be in the prescribed form as required by the local supply authority. The Contractor shall be responsible for getting the drawings and Electrical Installation inspected and approved by the local Authority concerned.

#### **11.0 Qualified Competent Supervision :**

11.1 The Contractor shall employ competent fully licensed, qualified full time Engineer to direct the work of Electrical installation in accordance with drawings and specifications. The Engineer shall be available at all times on the site to receive instructions from Consultant in the day to day activities, through out the duration of the contract. The foremen shall co-relate the progress of the work in conjunction with all relevant requirements of the supply authorities.

#### **12. Approval from SEB/ Electrical Inspectorate :**

The Contractor shall prepare and submit all the relevant drawings as per the Requirement of AP TRANSCO/ Electrical Inspectorate and obtain the Approvals from CEIG,CEA, Hyderabad. No incidental expenses will be paid towards the same. Only statutory fees if any will be paid by BANK OF MAHARASHTRA

**TECHNICAL SPECIFICATIONS**  
**CHAPTER 1**  
**INTERNAL ELECTRIFICATION****1.0 Scope :**

This specification is intended to cover the requirements of supply, installation, testing and commissioning of electrical wiring installation and other accessories required for its satisfactory operation. This covers the essential requirements or precautions regarding wiring installations for ensuring satisfactory and reliable service.

**2.0 Standards :**

The Electrical wiring installations and other accessories shall comply with latest IS : 732 - 1989 and National Electrical code - 1985.

**3. Construction**

Wall mounted switch boards shall be installed such that the bottom is at a minimum height of 1.35 m above finished floor level wherever applicable, as indicated in the drawing.

**E**quipment which is on the front of a switch board shall be so arranged that inadvertent personnel contact with live parts is unlikely during the manipulation of switches, changing of fuses or similar operation.

In every case in which switches and fuses are fitted on the same pole, these fuses, shall be so arranged that the fuses are not live when their respective switches are in 'OFF' position.

**N**o fuses other than fuses in instrument circuit shall be fixed on the back or behind a switch board panel or frame.

**4. Capacity of circuit :**

Lighting Circuits shall not have more than a total of ten points of fans, 5A socket outlets and light points and its total load shall not exceed 800 watts. Lights, fans, and 5A socket outlets can be wired on a single common circuit. If fan circuit is drawn separately, circuit shall not be used more than eight points and load shall not exceed more than 800 watts. In the circuit, the neutral and earth wires can be looped up to 10points. From distribution boards Neutral & Earth wires shall be run for every circuit.

The power circuits shall not have more than two outlets per circuit if load to be fed by each outlet is less than 1KW, and if load is more than 2KW, each outlet shall be connected to a separate circuit.

**S**witches : All switches shall be placed in the live conductor of the circuit and no single pole switch or fuse shall be inserted in the earth or earthed neutral conductor of the circuits. Single pole switches (other than for multiple control) carrying not more than 15amperes may be of the piano flush type and the switch shall be 'ON' When the knob is down.

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

**L**amps : All incandescent lamps, unless otherwise specified shall be hung at a height of not less than 2.5 m above the finished floor level.

**C**eiling rose : a) A ceiling rose or any other similar attachment shall not be used on circuit, the voltage of which normally exceeds 250 volts.

**A** ceiling rose shall not embody fuse terminals as an integral part of it.

**E**very socket outlet shall be controlled by a switch. The switch controlling the socket shall be on the 'live' side

of side line. 5 Amps and 15 Amps socket-outlet shall normally be fixed at any convenient place 60 cm above the floor level or near such level as indicated in drawing. 15 Amps socket outlets in kitchen shall be fixed at convenient place 23cm above the working platform. In a room containing a fixed bath or shower, there shall be no socket outlet and there shall be no provision for connecting a portable appliance.

#### 5 Recessed MS conduit wiring system

a) Making of chase : The chase in the wall shall neatly be made and shall be of suitable dimension to permit the conduit to be fixed in the manner desired by the Engineer-in-charge. In the case of buildings under construction, chases shall be provided in the wall, ceiling, etc. at the time of their construction and shall be filled up neatly after erection of conduit and brought to the original finish of the wall.

b) Fixing of conduit in chase : The conduit shall be fixed by means of staples or by means of saddles not more than 600 mm apart. Fixing of standard bends or elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a long radius which will permit easy drawing-in of conductors. All the threaded joints of rigid steel conduits shall be treated with approved preservative compound to ensure protection against rust.

c) Inspection boxes : To permit periodical inspection and to facilitate replacement of wires, suitable inspection boxes shall be provided at convenient locations. They shall be mounted in flush with the wall. The minimum size of inspection boxes shall be 75 x 75 mm. Suitable ventilating holes shall be provided in the inspection box covers.

d) Types of accessories to be used : All outlets, such as switches and sockets, may be either of flush mounting type or of surface mounting type.

The switches and other outlets shall be mounted on such boxes. The metal box shall be efficiently earthed with the earth continuity wire run along the conduit.

When crossing through expansion joints in buildings, the conduit sections across the joint may be through flexible copper bellows of the same size as PVC conduit. The Number of wires that can be drawn through a conduit shall be strictly as per IS 732 and as mentioned in Drawings.

#### 6. MS Conduits :

MS conduit shall be black enameled and of thickness not less than 16SWG and of size minimum 19 mm dia. The Conduit shall conform to IS 9537/ Part II

**Bunching of cables :** Separate conduits shall be used for bunching of conductors of AC supply and DC supply for lighting and small power outlet circuits.

**All outlets of conduit systems shall be properly drained and ventilated, but in such a manner so as to prevent the entry of insects etc. as far as possible.**

**Bends in conduit :** Wherever necessary, bends or diversions may be achieved by bending the conduits or by employing normal bends, inspection bends, inspection boxes, elbows or similar fittings.

In case of plain conduit, heat may be used to soften the conduit for bending and forming joints. Positioning of conduit in close proximity to hot surfaces should be avoided.

#### 7. TESTING OF WIRING:

The following tests shall be carried out on all types of wiring on completion of the work & before energizing the installation :

i) Insulation resistance test,

- ii) Electrical continuity test,
- iii) Earth continuity test,
- iv) Earth electrode resistance test,
- v) Switch polarity test.
- i) Insulation Resistance test :

The insulation resistance shall be measured by using 500 v megger between the following points.

Phase and neutral conductor with all fuses in position and all switches in closed condition and main switch in OFF position with lamps and other devices removed.

Between earth and whole system of conductors with all fuses in place, all switches closed and all lamps in position.

Between all conductors connected to one phase of the supply of the above tests shall not be less than 50 divided by the number of points on the circuit. Where a whole installation is being tested, a lower value than that given by the above formula is acceptable subject to a minimum of one megaohm.

The insulation resistance in megaohm as obtained by each of the above tests shall not be less than 50 divided by the number of points on the circuit. Where a whole installation is being tested, a lower value than that given by the above formula is acceptable subject to a minimum of one megaohm.

(ii) Electrical continuity test :

Each and every circuit shall be tested for electrical continuity by using a multimeter.

(iii) Earth continuity test :

The earth continuity conductor including metal conduit shall be tested for electrical continuity and the resistance of the same along with the earthing lead measured from the connection with the earth electrode to any point in the earth continuity conductor in the complete installation shall not exceed one ohm.

iv) Earth electrode resistance test :

The earth electrode resistance shall be tested as specified in section

(v).Switch polarity test :

Test shall be made to verify that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be marked for connection to the phase conductor.

8 Distribution Boards :

All the distribution boards shall be with MCBs as described in the respective schedule.

The distribution boards shall be controlled by a switch fuse, miniature circuit breaker or an isolator as described in the respective schedule. Each outgoing circuit shall be provided either with MCB or a fuse on the phase. The neutral shall be connected to a common link and be capable of being disconnected individually for testing purposes.

The distribution boards shall be located as indicated in the respective electrical working drawings and as directed by Engineer - in - charge. The distribution boards shall be fixed on wall in the niche provided and marked with the details of circuits, source of supply, size of incoming wires Etc.,

All marking shall be clear and legible.

The total load of the consuming devices shall be evenly distributed between the number of ways of distribution board.

The consuming devices circuit shall be connected to distribution board in proper sequence, so as to avoid unnecessary crossing of wires.

Cables shall be connected to a terminal only by crimped lugs.

Cables shall be rigidly fixed in such a manner that a clearance of at least 2.5cm is maintained between conductors of opposite polarity or phase and between the conductors and any material other than insulating material.

The incoming and outgoing cables shall be neatly bunched.

## 9. MOUNTING HEIGHTS :

The Mounting heights of various fixtures shall be as specified in the Drawings.

## CHAPTER 2 POWER CONTROL CENTRES

### 1.0 Scope:

This specification is to cover the requirement of design, supply, installation, testing and commissioning of LT power control centres / main switch boards with all components, Instruments, fittings and accessories for efficient operation without any trouble.

### 2.0 Standards :

The PCC specified herein, unless otherwise stated shall conform to the relevant and latest revisions of Indian standards and Indian Electricity Rules.

### 3.0 Design and construction :

3.1 Design requirements : The power control centres shall be suitable for operation on 440volt, 3 phase,4wire 50HZ system to withstand a short circuit level of 50 KA RMS symmetrical.

The PCC shall be designed for operation in high ambient temperature upto 45 degrees centigrade and high humidity upto 95% and tropical atmospheric conditions. Means shall be provided to facilitate ease of inspection, Maintenance and Servicing.

### 3.2 Constructional requirements :

The power control centre shall be of

- i) Metal clad, cubicle, indoor, free standing type suitable for Mounting on Built up Trenches with U Channels of adequate size.
- ii) Made up of the requisite vertical sections, which when coupled together shall form continuous dead front switch board.
- iii) Dust and damp protected, the degree of protection shall be better than IP - 54 as specified in IS-2147.
- iv) Readily extendable on both sides by the addition of vertical sections after removal of the end covers.
- v) Single front construction with the circuit breaker feeder and switch fuse feeders suitable for operation from the front of the panel.

The PCC shall have the feeder ratings as per the schematic diagrams enclosed with the schedule and constructed only of materials capable of withstanding the mechanical, electrical and thermal stresses as well as the effects of humidity, which are likely to be encountered in normal service.

3.3 Vertical Sections :Each vertical section shall comprise a front framed structure rolled folded sheet steel channel section of minimum 2 mm thickness rigidly bolted together. This structure shall house the components contributing the major weight of the equipment such as circuit breaker, switch fuse units, main horizontal busbars, vertical risers and other front mounted accessories. The structure shall be mounted on a rigid base frame of folded sheet steel of minimum of 2.5 mm thickness and 100mm height. The design shall ensure Structural stability during Transit and also during Operation after Commissioning Suitable cable chamber housing the cable end connections and power / control cable terminations shall be provided. The design shall ensure generous availability of space for ease of installation and maintenance of cabling and adequate safety for working in one vertical section without coming into accidental contact with live parts in the adjacent section.

A cover plate at the top of the vertical section shall be provided with necessary ventilating arrangements. Any aperture for ventilation shall be covered with a perforated sheet having less than 1 mm diameter perforations to prevent entry of vermin.

#### 3.4 Sheet Steel Cubicle :

3.4.1 The sheet steel cubicle shall be designed in fully segregated multitier formation. Each cubicle shall have hinged front access door with easy operating fasteners. All the doors and covers shall be heavily gasketed to make the compartment dust tight. Each cubicle shall have a covering at the bottom to make a dust and vermin proof construction. Door hinges shall be of concealed type.

The cubicle shall be of minimum 2 mm thick sheet steel. Sheet steel shrouds and partitions shall be of minimum 1.6 mm thickness. All sheet steel work forming the exterior of switch boards shall be smoothly finished, leveled and free from flaws. The corners shall be rounded. The minimum Thickness of Gland plates shall be 3mm.

3.4.2 The apparatus and circuits in the power control centers shall be so arranged as to facilitate their operation and maintenance at the same time to ensure the necessary degree of safety. Apparatus forming part of the control centers shall have the following minimum clearance.

- i) between phases - 25 mm,
- ii) between phase and neutral - 25 mm,
- iii) between phases and earth - 25 mm,
- iv) Between neutral and earth - 19 mm,

When, for any reason, the above clearances are not available suitable insulation shall be provided. Clearance shall be maintained during normal service conditions. Creepage distances shall comply with those specified in relevant standards.

3.4.3 All insulating materials used in the construction of the equipment shall be non hygroscopic duly treated to withstand the effect of high humidity, high temperature and tropical ambient service conditions.

3.4.4 Functional units such as circuit breakers and fuse switches shall be arranged in multitier formation, except that not more than One air circuit breaker housed in a single vertical section.

3.4.5 Metallic/insulated barriers shall be provided within vertical sections and between adjacent sections to ensure prevention of accidental contact with :

- i) Main busbars and vertical risers during operation, inspection or maintenance of functional units and front connected accessories.
- ii) Cable terminations of one functional unit, when working on those of adjacent unit/units.

3.4.6. All doors / covers providing access to live power equipment / circuits shall be provided with tool operated fasteners to prevent unauthorized access.

3.4.7 Provisions shall be made for permanently earthing the frames and other metal parts of the switchgear by two independent connections.

### 3.5 Metal treatment and finish :

All steel works used in the construction of the switch boards shall have undergone a suitable rigorous metal treatment process so as to remove oxide scales and rust formation and to facilitate a durable coating of the paint on the metal surfaces and also to prevent the spreading of rust, in the event of the paint film being mechanically damaged.

Two coats of Anti Corrosive primer followed by a finishing coat of Epoxy spray power coating of the shade 631 of IS : 5 (i.e. Siemens grey) shall be given. The total thickness of paint shall not be less than 25 micron.

### 3.6 Bus Bars :

3.6.1 The busbars shall be housed in non-segregated sheet steel compartments in the cubicle at convenient locations with provision for access to the buses from the front of the panel. The busbar shall be suitably braced with DMC/SMC supports to provide a through fault withstand capacity of 50 KA RMS symmetrical for one second and a peak short circuit withstand capacity 150 KA minimum. The neutral as well as the earth bus shall be capable of withstanding the above fault level.

3.6.3 Large clearance and creeping distance shall be provided on the busbar system to minimize the possibility of a fault.

3.6.4 High tension bolts, nuts and spring washers shall be provided at all busbar joints.

3.6.5 The continuous rating of the busbar shall be 125% of the rated current. Maximum temperature of the bus and the connections shall not exceed 85 degrees centigrade. The busbars shall be of liberal design for the required current rating i.e. 0.8Amp/sq.mm.

The main phase busbars shall have continuous current rating throughout the length of each power control centre and the neutral busbars shall have continuous rating of at least 50% of phase busbars.

3.6.6 Connections from the main busbars to functional circuits shall be arranged and supported so as to withstand without any damage or deformation, the thermal and dynamic stresses due to short circuit currents.

All busbars and tapings shall be provided with color coded sleeves for phase identification.

All joints/tapping points of the buses shall be suitably shrouded to prevent accidental contact.

## 4.0 Circuit Breakers :

### 4.1 General :

4.1.1 Circuit breakers shall be of triple pole / four pole, air break, horizontal draw out /Fixed type, as given in



the schedule of work and comply with the requirements of relevant IS with latest amendments and shall have the following :

- i) A short circuit breaking capacity of not less than 50 KA RMS at 415 volts, 50 Hz AC.
- ii) A short circuit making capacity of 105 KA.
- iii) A short time withstand capacity of 150 KA for one second.
- iv) Electrical overload performance at 6 times the rated current, 100% of the rated voltage as recovery voltage at 0.5 power factor.
- v) Dielectric test of 2.5 KV applied for one minute on main circuits.

4.1.2 The circuit breakers shall be fitted with detachable arc chutes on each pole designed to permit rapid dispersion, cooling and extinction of the arc. Interphase barriers shall be provided to prevent flash over between phases.

4.1.3 Arcing contacts shall be of hard wearing material copper tungsten or silver tungsten and shall be easily replaceable. Main contacts shall be of silver plated copper of high pressure type and generous cross section.

#### 4.2 Operating Mechanism :

The operating mechanism shall be of robust design, with minimum number of linkages to ensure maximum reliability. Manually operated circuit breakers shall be provided with spring operated closing mechanism which are independent of speed of manual operation. Electrically shall be independent of the motor which shall be used slowly for charging the closing spring.

The operating mechanism shall be such that the breaker is at all times free to open immediately when the trip coil is energized.

Mechanical operation indicators shall be provided to show open and close positions of the breaker. Electrically operated breakers shall be additionally provided with mechanical indications to show charged and discharged conditions of the charging spring.

Means shall be provided for slow closing and opening of the breaker for maintenance purposes, and for manual changing and closing of electrically operated breakers during emergencies,

#### 4.3 Protection :

Provisions shall be available for fitting a minimum of five trip devices - three over current, as shunt trip and an under voltage release or two over current and earth fault release, a shunt trip and one under voltage release. The breakers shall be of the shunt or series trip type as specified in the schedule.

#### 4.4 Housing of Circuit Breaker :

Circuit breakers shall be individually housed in sheet metal castle provided with hinged doors. The breaker along with its operating mechanism shall be mounted on a robust carriage moving on guide rollers with in the castle. Isolating contacts for both power and control circuits shall be of robust design and fully self aligning. The assembly shall be designed to allow smooth and easy movement of the breakers within its castle.

The breaker shall have three distinct positions within the castle as follows :

- i) `Service' position : With main and auxiliary contacts connected.
- ii) `Test' position : with power contacts fully disconnected and control circuit contacts connected.
- iii) `Isolated' position : with both power and control circuit contacts fully disconnected.

It shall be possible to achieve any of the above positions with the castle doors closed. Mechanical position indicators shall be provided for the three positions of the breakers.

#### 4.5 Interlocking :

4.5.1. The moving portion of the circuit breaker shall be interlocked so that :

- i) It shall not be possible either to isolate it from the connected position, or to plug it in from the Isolated position with the breaker closed.
- ii) The circuit breaker can be closed only when it is in one of the three positions or when it is fully out of the castle.
- iii) It shall not be possible to open the hinged door of the castle unless the breaker is drawn to the isolated position.
- iv) Inadvertent withdrawal of the circuit breaker too far beyond the supporters is prevented by the suitable stops.

4.5.2 Provisions shall be available for the padlocking of the circuit breaker access frame in any of the three positions.

4.5.3 Automatically operated safety shutters shall be provided to screen the fixed isolating contacts when the breaker is drawn out from the castle.

4.5.4 The moving portion of the circuit breaker shall be provided with a heavy duty, self aligning earth contact, which shall make before and break after the main isolating contacts during insertion into with drawl from the service position of the breaker. Even in the isolated position positive earthing contact should exist.

4.5.5 Auxiliary switches directly operated by the breaker operating mechanism and having 4 'NO' and 4 'NC' contacts, shall be provided on each breaker. The auxiliary switch contacts shall have a minimum rated thermal current of 10 amps.

#### 5.0 Switch Fuse Units :

##### 5.1 General :

The switch fuse units shall be of the load break, heavy duty, cubicle type conforming to the requirements IS and of AC 23 duty.

The switch fuse units shall be capable of withstanding the thermal and electromagnetic stresses caused by short circuits for the time of operation of the associated fuse links.

The switch fuse units shall be double break and have quick make break mechanism, designed to ensure positive operation.

All switch fuse contacts shall be silver plated at the current transfer surfaces.

The unit shall be provided with a front operating handle. The ON and OFF positions of the switch handle shall be clearly marked.

##### 5.2 Interlocks and Safety :

Interlocks shall be provided so as to prevent opening of the unit door when the switch is in the ON position and also to prevent closing of the switch with the door not properly secured. It should however be possible for a competent person to operate the switch shall be suitable for locking with switch in the OFF position by means of a padlock.

The ELECTRICAL arrangement of the switch fuse unit shall be such that all 'Live' parts are shrouded.

### 5.3 HRC Fuses :

The switch fuse units shall be fitted with High rupturing capacity cartridge fuse links with ISI marking for a rupturing capacity of not less than 80 KA at 415 volts. The fuse links shall be mounted in a drawout carriage, thus ensuring positive isolation of contacts during fuse replacements.

### 6.0 Current Transformers.

Current transformers shall comply with the requirements of relevant latest amendment IS. They shall have ratios, outputs and accuracy as specified in the schedule.

### 7.0 Indicating / Integrating Meters :

All indicating instruments shall be of flush mounted industrial pattern conforming to the relevant latest amended IS. The instrument shall have non reflecting bezels, clearly, divided and indelibly marked scales, and shall be provided with zero adjusting devices in the front. Integrating instruments shall be of flush mounted switch board pattern complying with the requirements of relevant latest IS.

8.0 **Relays** :Circuit breakers shall be provided with integrally mounted relays as specified in the schedule.

The relay shall have a set of three phase characteristics, which shall be adjustable over a wide range, to provide discrimination between a multiplicity of devices. The relay shall be able to provide over current and earth fault protection. Also UV and Shunt trip Relays are to be provided.

9.0 **Control switches/Selector switches** :Control switches/Selector switches shall be of the heavy duty rotary type, with plates clearly marked to show the operating position. They shall be of semi-flush mounted type with only the front plate and the operating handle projected.

Circuit breakers control switches shall be of the spring return to neutral type.

### 10.0 Indicating lamps and push buttons :

Indicating lamps shall be of the LED type of low watt consumption, provided with series resistors where necessary and with translucent lamp covers. Bulbs and lenses shall be easily replaceable from the front.

Push buttons shall be of the momentary contact, push to actuate type fitted with self-reset contacts and provided with plates marked with its junctions.

### 11.0 Cable terminations :

Cable entries and terminals shall be provided in the switch board to suit the number, type and size of aluminum conductor power cables and copper conductor control cables as indicated in the schematic diagram.

Provision shall be made for top or bottom entry of cables as required. Generous size of cabling chambers shall

be provided, with the position of cable glands and terminals such that cables can be easily and safely terminated.

Barriers or shrouds shall be provided to permit safe working at the terminals of one circuit without accidentally touching that of another live circuit.

Cable riser shall be adequately supported to withstand the effects of rated short circuit currents without damage and without causing secondary faults.

Cable sockets shall be of copper and of the crimping type/soldering as required.

**12.0 Control wiring :**All control wiring shall be carried out with 1100/650 V grade single core Copper cable conforming to relevant IS having stranded copper conductors of minimum 2.5 sq.mm. section for CT Wiring and 1.5sq.mm for Control/indicating Instruments.

Wiring shall be neatly bunched, adequately supported and properly routed to allow easy access and maintenance.

Wires shall be identified by numbered ferrules at each end. The ferrules shall be of the ring type of non-deteriorating material. They shall be firmly located on each wire so as to prevent free movement.

All control circuit fuses shall be mounted in front of the panel and shall be easily accessible.

### 13.0 Terminal blocks and labels :

Terminal block shall be of 500 volts grade of the stud type. Insulating barriers shall be provided between adjacent terminals.

Terminal block shall have minimum current rating of 10 amps and shall be shrouded.

Provisions shall be made for label inscriptions.

Labels shall be made of anodized aluminum, with white engraving on black background. They shall be properly secured with fasteners. Danger plate of size and descriptions as recommended in the relevant IS shall be provided on the PCC.

### 14.0 Tests :

i) The power control centre shall be completely assembled, wired, adjusted and tested for operation under simulated conditions to ensure correctness of wiring and interlocking and proper functioning of all components.

ii) Each power control centre and components shall be subjected to standard routine tests as per applicable clauses of relevant standards.

iii) All current carrying parts and wiring of power control centre shall be subjected to power frequency voltage withstand test.

**15.0 Drawings :**After the award of the contract the contractors shall submit three copies of the following drawings for approval of the Department.

i) Outline dimensional drawing of the PCC showing the general arrangement indicating the following :

- a) Busbar clearances;
- b) power and control cable entry points;
- c) Configuration of busbars;
- d) Details of support insulations and spacings;
- e) Outgoing power cable termination arrangements.

ii) Single line diagram of power control centre showing Protection, Metering etc.

- iii) Cubicle wiring diagram.
- iv) List of Firements with Ratings & makes / Models

#### 16.0 Installation Testing and commissioning :

The power control centre shall be installed over the cable trench/cable pit using suitable size of MS channel including grouting of the channel with necessary bolts and nuts. Proper earthing of PCC shall be done using two independent copper/GI strip of sizes as indicated in the schedule. The channel shall be painted with one coat of red oxide primer and two coats of anticorrosive enamel paint of proper shade as directed by the Engineer-in-charge.

The pre-commissioning tests as required shall be done and the PCC shall be commissioned.

### CHAPTER 3 LAYING OF CABLES

#### 1.0 Scope :

This specification is intended to cover the requirements of installation and energizing of PVC/XLPE/PILCDSTA power cables including jointing of cables.

#### 2.0 Standards :

The power cable and its fixing accessories shall comply with the latest relevant Indian Standards and National Electrical Code.

#### 3.0 Laying of Cables :

##### 3.1 General :

3.1.1 Before the commencement of cable laying, it shall be ensured by the Engineer-in-Charge that only ISI marked cables are used. It shall be the responsibility of the contractor to check the soundness and correctness of the size of the cable while taking delivery of the cable from stores. Any defect noticed shall be brought to the notice of the issuing authorities immediately. If any defects is noticed after the cable is laid or during the process of laying, it shall be brought to the notice of the Engineer-in-Charge and upon his satisfaction, that the cable is not damaged due to bad handling, it will be the entire responsibility of the contractor to retrieve the cable already laid and return the defective cable to store and take fresh length of the cable from the store and relay the same.

3.1.2 The material such as bricks, sand, cable route markers, RCC slab of best quality as approved by the Engineer-in-Charge only shall be used for cable laying works.

3.1.3 The contractor shall provide all the necessary labour, tools, plants and other requisites at his own cost for carrying out pumping of water and removing of water from trenches, if any, where required.

3.1.4 Installation shall be carried out in a neat, workman like manner by skilled, experienced and competent workman in accordance with standard practices.

3.1.5 While laying the cable care shall be taken to avoid formation of kinks and also damage to the cable. In the case of cable bends, it shall not have bent radius lesser than 20 times the overall diameter of the cable.

3.1.6 A cable loop of about five meters length and as directed by the Engineer-in-Charge shall be provided at the following locations.

- a) Near the termination points
- b) Near to the straight through joint

3.1.7 The method of cable laying and routing of cables, shall in every case be as directed by the Engineer-in-Charge / consultant.

3.1.8 Whenever cable passes through hume pipes/GI pipes embedded across the wall in a building, both the ends of the pipe shall be suitably sealed.

3.1.9 Identification tags indicating the size of the cable and feeder designation shall be securely attached at both ends of the cable. Such tags shall also be attached to the cable at intervals of 50 Mtrs. The materials of the tag shall be of either 12 SWG GI sheet. In case of plastic, the details have to be engraved and in case of GI sheet, the details should be punched. Cable route markers shall be provided at the intervals of 200 M with a minimum of one number route marker. The details of the route makers shall be as per the drawing. At the locations of straight through joints, necessary joint-markers shall be provided.

3.1.10 When cable runs vertically, it shall be clamped on mild steel flats or angle iron fixed on walls and are spaced at such intervals as to prevent buckling of the cables. All steel work shall be painted with a coat of red oxide and thereafter finished with suitable anticorrosive paints.

### **3.2 Cable laid in ground :**

3.2.1. All MV cables (up to 1.1 KV) shall be laid at a minimum depth of 0.75 M & HT cables (1.1 KV to 11 KV) shall be laid at a depth of 1.0 M when laid in ground. When cable pass through roads, nallahs etc. they must be protected by either hume pipe or GI pipe of suitable dimensions.

3.2.2. Excavations of trenches shall be carried out as indicated in the drawing. The width of the trench at the bottom shall be 0.4 M for one cable. In case the total number of cables laid in trenches is more than one, then the width shall be such that the spacing between the cables is maintained as shown in the drawing. Before the cable is laid in the trench the bottom of the trench shall be cleared from stones and other sharp materials and filled with sand layers of 75 mm, as shown in the drawing.

3.2.3. While removing the cable from the drum, it shall be ensured that the cable drum is supported on suitable jacks and the drum is rotated to unwind the cable from the drum. The cable should never be pulled while unwinding from the drum. It shall be ensured that the cables are run over the wooden rollers placed in the trench at intervals not exceeding 2 M.

3.2.4. After placing the cables in the trench shall be filled in layers ensuring that each layer is well rammed by spraying water and consolidated. The extra earth shall be removed from the place of trench and deposited at a place as directed by the Engineer-in-Charge/consultant.

3.2.5. The HT cables shall be provided with RCC slabs (marked HT cable) on top as protection.

### **3.3 Cables laid in built up trench :**

3.3.1. Before the commencement of cable laying the cable trench shall be drained properly. Cable shall be laid as explained in item 3.2. Cable shall be properly clamped to the cable supports, which are provided in the cable trench. The method of clamping shall suit the size of the cable and the cable supports, which are provided in the cable trench. The method of clamping shall suit the size of the cable and the cable supports, as directed by the Engineer-in-Charge.

Care shall be taken while removing and replacing the trench cover slab. It is the responsibility of the contractor to make good any damaged trench covers.

### 3.4. Cable terminations and straight through joints :

3.4.1. All cable jointing materials such as straight through joint boxes, cable compound, cable lugs, insulation tapes etc. shall be of best quality and as approved by the Engineer-in-Charge.

3.4.2. Cable glands for strip / armoured cables shall include a suitable armour clamp for receiving and securely attaching the armouring of the cable in a manner such that no movement of the armour occurs when the assembly is subjected to tension forces.

The cable gland shall not impose on the armouring, a bending radius not less than the diameter of the cable. The clamping ring shall be solid and of adequate strength.

Provision shall be made for attachment of an external earthing bond between the metallic covering of the cable and the metallic structure of the apparatus to which the cable box is attached.

### 3.5 Sealing boxes :

3.5.1 A sealing box, irrespective of the class of insulation of the cable for which it is intended, shall be so designed that it may be filled with compound after connecting the cable specially in flame proof/hazardous areas.

3.5.2 All parts and connection for attaching the armouring, wiping or clamping the metallic sheath in a sealing box, shall be easily accessible. This may be achieved by splitting the box or by providing a suitable cover or other such means.

3.5.3 The joints in the box shall prevent leakage of the compound.

3.5.4 Provision shall be made to ensure that the cores of the cable are efficiently sealed to prevent moisture penetrating along the strands or the cable conductors.

3.5.5 The sealing box shall be provided with compound filling orifices with suitable covers or plugs of size that will permit easy pouring of the compound.

In all cases where screwed plugs are used, one or more air vents shall be provided to ensure complete expulsion of air and total filling of the box with compound. 3.5.6 The box shall be of sufficient length to allow for manipulation of the insulated cover without damage to them or to the insulation.

3.5.7 A sealing box intended to be attached directly to the apparatus shall be designed such that the box together with the connected cable may be detached from the apparatus without disturbing the sealing compound.

3.5.8 Cable sealing and dividing boxes intended for use in the flame proof areas shall comply additionally with the relevant requirements of IS:2148-1968.

## 4.0 Testing

Once cable is laid, following tests shall be conducted in the presence of Engineer-in-Charge, before energizing the cable:

- i) Insulation resistance test (Sectional and Overall).
- ii) Sheathing continuity test.
- iii) Continuity and conductor resistance test.
- iv) Earth test.
- v) High voltage test.

Tests conducted shall be as per Indian Standards and National Electrical Code.

## CHAPTER 4 EARTHING

### 1.0 SCOPE:

This specification is intended to cover the requirements of supply, installation, testing and commissioning of

- a) Pipe earthing
- b) Plate earthing
- c) Strip earthing

### 2.0 STANDARDS:

Earthing installations shall conform to the Indian Electricity Rules - 1956, as amended from time to time and IS 3043-1989 "code of practice for earthing", with latest amendments.

### 3.0 Earth electrode arrangement :

#### 3.1 Pipe electrode :

3.1.1 Electrode shall be made of CI pipe having a clean surface and not covered with paint, enamel or poorly conducting material. Galvanized pipe shall not be smaller than 100 mm ID. Earthing with pipe electrode shall be done as per the details indicated in IS : 3043/87 .

3.1.2 Electrodes shall be embedded below permanent moisture level.

3.1.3 The length of pipe electrodes shall not be less than 2.5 m. if rock is encountered, pipes shall be driven to a depth of not less than 2.5 m with suitable inclination. Pipe shall be in one piece and deeply driven.

3.1.4 To reduce the depth of burial of an electrode without increasing the resistance, a number of rods or pipes may have to be connected together in parallel. The distance between two electrodes in such a case shall not be less than twice the length of the electrode. The earthing lead shall be connected by means of a through bolt, nuts and washers and cable socket.

#### 3.2 Plate electrode :

For plate electrodes, minimum dimensions of the electrode shall be as under.

3.2.1 GI plate electrode : 600 x 600 x 6 mm thick.

3.2.2 Copper plate electrode : 600 x 600 x 3.15 mm thick

3.2.3 The electrode shall be buried in ground, with its faces vertical and top not less than 2.5 M from the surface of the ground.

3.2.4 Earthing using plate electrode shall be done as per details, indicated in drawing.

3.2.5 Plate electrodes shall have a galvanized iron water pipe, buried vertically and adjacent to the electrode. One end of pipe shall be atleast 5 cm above the surface of the ground and need not be more than 10 cm. The internal diameter of the pipe shall be atleast 19 mm. The length of pipe under the earth's surface shall be such that it shall be able to reach the center of the plate. The earthing lead shall be securely bolted the plate with two bolts, nuts, check nuts and washers.

#### 3.3. Strip or conductor electrodes :



3.3.1. Strip electrode shall not be smaller than 25 x 1.6 mm, if of copper and 25 x 3 mm, if of galvanized iron and steel. If round conductors are used as earth electrodes, their cross sectional area shall not be smaller than 3 sq.mm , if of copper and 6 sq.mm. if galvanized iron and steel.

3.3.2. Conductor shall be buried in trenches not less than 0.5 m deep.

#### 4.0 General :

- i) All materials used for connecting the earth lead with electrode shall be of GI in case of GI pipe and GI plate electrodes, and of tinned brass in case of copper plate electrode. The earthing lead shall be securely connected at the other end to the main board.
- ii) The earthing lead from electrode onwards shall be suitably protected against mechanical injury by routing the earth wire / strip through a suitable size of GI pipe.
- iii) All medium voltage equipments shall be earthed by two separate and distinct connections with the earth. In the case of high and extra high voltages, the neutral points shall be earthed by not less than two separate and distinct connections with the earth, each having its own electrode at the generating station or substation.
- iv) All materials, fittings etc. used in earthing shall conform to Indian standard specifications wherever they exist. In the case of materials for which Indian standard specifications do not exist, such materials shall be approved by the Engineer-in-Charge.
- v) The earth electrode shall be kept free from paint, enamel and grease.
- vi) It shall be ensured that similar materials for respective earth electrodes and earth conductors are used.
- vii) Earth electrode shall not be installed in proximity to a metal fence.
- viii) Copper/GI strip shall be connected to the respective earth electrodes, either by brazing or welding respectively. The Copper/GI strip shall be jointed only either by brazing or by riveting at the end of overlapping portions. The over lap shall not be less than 50 mm.
- ix) Earthing clamps used for supporting earth strips shall be made of such materials so as to avoid bimetallic action between strip and clamps.

#### 5.0 Testing :

The earth resistance of each electrode shall be measured by using a reliable and calibrated earth megger and the value shall be as per IS/IE rules

**PROPOSED ELECTRICAL WORKS FOR  
BANK OF MAHARASHTRA,  
ZONAL OFFICE & SULTAN BAZAR BRANCH AT HYDERABAD**

**LIST OF APPROVED MANUFACTURERS / NATURAL SOURCES OF MATERIALS TO  
BE USED IN  
THE ELECTRICAL WORKS SUBJECT TO THE APPROVAL OF SAMPLES BY THE  
CONSULTANT.**

<b><u>S.No.</u></b>	<b><u>Material Name.</u></b>	<b><u>Brand / Manufacturer / Recommended Make.</u></b>
1.	Switches/Sockets	Legrand / MK India (wrap around)/ Anchor Panasonic / Clipsal.
2.	Copper Conductor wires	Finolex / Qflex/ Lapp/ Anchor/v guard
3.	PVC conduits & Accessories	Precision / Sudhakar/ Avon plast
4.	MS Conduits	Gupta / Bharat
5.	Metal clad Sockets	MDS /L&T- Hager /Merlingerin /BCH
6.	MCBs /MCB Distribution boards	MDS /L&T- Hager /Merlingerin(Compact)
7.	MCCBs/Switchgear	GE Power /Merlin Gerin(Compact) /BCH /L&T /MD
8.	Under ground Cables	CCI /Unistar /Nicco /Gloster
9.	Cable Glands	HMI /Comet
10.	Capacitor Bank	Epcos /Neptune
11.	Cable Lugs	Dowell's / 3D
12.	MV Panels (PCCs)	Manufacturers with CPRI Test Certificate.
13.	ELRs/CBCT	Prokdvs /Nagoba
14.	Measuring Instruments	Prokdvs /Enercon
15.	Selector Switches	Vaishno / Salzer / Kaycee
16.	Indication Lamps LED (protected type)	Schneider / Vaishno / Binay
17.	Resin cast CTs	AE / Kappa
18.	Telephone Wires	Lapp / Delton /National
19.	Light Fixtures	Philips / Tulip / GE
20.	Ceiling Fans & Exhaust Fans	Usha / Polar / Khaithan / Bajaj

**NOTE :** The contractor shall use only above mentioned material or equivalent make to be approved by the Consultant. All other materials shall confirm 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 the samples of every material including all fixing accessories shall be got approved by Owner / Consultant before Execution.

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