



**TENDER FOR INTERIOR FURNISHING ,ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS,ERNAKULAM.**

**ENVELOPE -I  
(TECHNICAL BID)**

**LAST DATE OF SUBMISSION :- 23.07.2018 up to 4.00PM**

**REGIONAL OFFICE,  
BANK OF BARODA,  
1<sup>st</sup> FLOOR, VASUDEVA BUILDING, T.D.ROAD,  
ERNAKULAM-682 011,  
KERALA, INDIA.**

**BINESH SUKUMAR ARCHITECTS & PLANNERS**

**7<sup>TH</sup> FLOOR , PENTA TOWER , KALOOR KOCHI 682017, KERALA , INDIA**

**E-mail: [binesharchitects@gmail.com](mailto:binesharchitects@gmail.com)**

**Tel: 91 484 - 2537668, 2538445, 3296142**

**Website: [www.binesharchitects.com](http://www.binesharchitects.com), Fax : 0484 - 4042152**



1	<b>NAME OF THE WORK</b>	TENDER FOR INTERIOR FURNISHING ,ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS,ERNAKULAM
2	<b>TIME AND LAST DATE OF SUBMISSION OF TENDER</b>	23.07.2018 UP TO 4.00 PM
3	<b>PLACE &amp; ADDRESS FOR SUBMISSION OF TENDER</b>	Deputy General Manager, Bank Of Baroda, Regional Office, 1 <sup>st</sup> Floor,Vasudeva Building, T.D. Road, Ernakulam -682 011, Kerala, India.
	<b>CONTACT PERSON WITH TELEPHONE NO</b>	BINESH SUKUMAR ARCHITECTS- ARCHITECT MR.JAVED IQBAL - 09446899813- BANK
6	<b>DATE, TIME AND PLACE OF OPENING OF TENDERS</b>	TECHNICAL BID OPENING : 24.07.2018 AT 11:00 AM . IN THE OFFICE OF DEPUTY GENERAL MANAGER, Bank Of Baroda, Regional office, 1 <sup>st</sup> Floor,Vasudeva Building, T.D. Road, Ernakulam - 682 011, Kerala, India. ONLY TECHNCIALLY QUALIFIED BIDDERS WILL BE INFORMED TO JOIN FOR OPENING OF THEIR FINANCIL BID.
7	<b>EARNEST MONEY DEPOSIT (EMD) IN THE FOR OF DD/BC TO BE SUMMITTED ALONG WITH TECHNICAL BID</b>	Rs 60,000/- DRAWN IN FAVOUR OF BANK OF BARODA REGIONAL OFFICE, ERNAKULAM.
7B	<b>( ISD ) INITIAL SECURITY DEPOSIT (PAYABLE BY L1 BIDDER AFTER AWARD OF THE WORK)</b>	2% OF VALUE OF THE TENDER VALUE INCLUDING EMD PAID BY L1BBIDEER, BUT NOT EXCEEDING 5% THE TENDER VALUE . ISD IS PAYABLE WITHIN 7 DAYS OF AWARD OF THE WORK. EMD AND INITIAL SECURITY DEPOSIT SHALL BE REFUNDED AFTER COMPLETION OF THE WORK. EMD AND ISD SHALL BE PAID BY DD/BC ONLY. BGS ARE NOT ACCEPTABLE.
8	<b>RETENTION MONEY</b>	DEDUCTIBLE IN RUNNING BILLS: 8% OF THE VALUE OF EACH INTERIM BILL AND TOTAL DEDUCTIBLE AS DETAILED IN THE TENDER DOCUMENT.
9	<b>TERMS OF PAYMENT OF BILLS, IF ANY. SPECIFY THE MINIMUM VALUE OF WORK FOR PAYMENT OF RUNNING ACCOUNT BILLS.</b>	INTERIM BILLS OR PERIODICAL RUNNING BILLS ON SATISFACTORY COMPLETION OF MINIMUM VALUE OF WORK OF Rs 10 LAKHS EXCLUDING SECURITY ADVANCE ON MATERIALS. NO ADVANCE OR MOBILIZATION ADVANCE SHALL BE PAID IN ANY CIRCUMSTANCES.
10	<b>(PENALTY CLAUSE)LIQUIDATED DAMAGES</b>	IN CASE OF DELAY A PENALTY @ THE RATE OF 1% OF ESTIMATED COST PER WEEK SUBJECT TO A MAXIMUM OF 10% OF ACCEPTED CONTRACT SUM BUT NOT EXCEEDING THE TOTAL SECURITY DEPOSIT. (INITIAL PLUS RETENTION) WOULD BE STRICTLY IMPOSED.
11	<b>STIPULATED TIME FOR COMPLETION OF THE WORK/SUPPLY.</b>	45 DAYS
12	<b>ESTIMATED VALUE OF TENDER/PROJECT</b>	Rs. 60.00 Lacks appx
13	<b>VALIDITY PERIOD OF THE TENDER.</b>	THREE MONTHS.

14	<b>TAXES</b>	RATES QUOTED SHOULD INCLUDE ALL TAXES, OCTROI VAT GST ANY LOCAL TAX AND OTHER CHARGES LIKE TRANSPORTATION ETC. HOWEVER I.T AND TDS WILL BE DEDUCTED AT SOURCE AS APPLICABLE.
15	<b>ELECTRONIC PAYMENT</b>	ELECTRONIC PAYMENT SHALL BE PREFERRED.
17	<b>INSURANCE OF THE WORK</b>	WITHIN -7-DAYS FROM THE DATE OF ACCEPTANCE OF THE WORK (CAR POLICY)
18	<b>DATE OF COMMENCEMENT</b>	ONE WEEK FROM THE DATE OF THE ACCEPTANCE OF WORK ORDER
19	<b>PERIOD FOR CERTIFICATION OF INTERIM BILLS BY THE ARCHITECT</b>	8 DAYS FROM THE DATE OF RECEIPT OF THE BILL BY THE ARCHITECT
21	<b>PERIOD OF CERTIFICATE OF FINAL BILL BY ARCHITECT</b>	15 DAYS FROM THE DATE OF RECEIPT OF BILL BY THE ARCHITECT.
23	<b>DEFECT LIABILITY PERIOD</b>	12 MONTHS
24	<b>RELEASE OF INITIAL SECURITY DEPOSIT</b>	AFTER SATISFACTORY COMPLETION OF THE WORK AND CERTIFICATION OF FINAL BILL
25	<b>RELEASE OF RETENTION MONEY IN 2 PARTS</b>	50% OF THE RETENTION AMOUNT IS REFUNDED ON ISSUE OF COMPLETION CERTIFICATE BY THE ARCHITECT, BALANCE 50% WILL BE REFUNDED 14 DAYS AFTER DEFECT LIABILITY PERIOD PROVIDED ALL DEFECTS ARE ATTENDED SATISFACTORILY IN ACCORDANCE WITH CONTRACTOR.

**NOTICE INVITING TENDER**

**PROJECT: INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS, ERNAKULAM**

Sir/Madam,

1. Sealed tenders are invited for the proposed work by the **Deputy General Manager, Regional office, Bank of Baroda, Vasudeva Building, T.D. Road, Ernakulam- 682 011, Kerala, India.**
2. Sealed tenders in the prescribed form on two separate envelopes should be addressed to **Dy. General Manager, Regional office, Bank Of Baroda, 1<sup>st</sup> FLOOR, VASUDEVA BUILDING, T.D. ROAD, ERNAKULAM – 682 011, KERALA, INDIA.** & super scribed **INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS, ERNAKULAM.**
  - a. ENVELOPE NO.1: TO CONTAIN CONTRACTOR'S TERMS AND CONDITIONS ,WORK ORDERS, PERFORMANCE/COMPLETION CERTIFICATES, ALL REQUIRED PAPERS AS REQUIRED IN BASIC INFORMATION TECHNICAL ASSUMPTIONS ALONG WITH DEMAND DRAFT/BANKER'S CHEQUE FOR **Rs. 60,000/-** IN FAVOR OF **BANK OF BARODA, REGIONAL OFFICE, ERNAKULAM** AS E.M.D ISSUED DURING TENDER NOTICE PERIOD OF PERIOD FROM 29.06.2018 TO 19.07.2019 WILL ONLY BE ACCEPTED.
  - b. Envelop No 2: Price Bid - Tender documents along with B.O.Q Completed in all respect and duly signed and submitted to the above address **up to 4:00 P.M on 23.07.2018** Envelope 1 will be opened on the **24.07.2018 at 11.00 P.M.** in the presence of the Contractors or their representatives. No separate information will be given in this regard.
  - c. Envelop No 2 will be opened at later date, which will be communicated to the tenderers in advance. In case of holidays/strikes/bands or any reason causing a holiday exactly on the last date of submission of offers; the last date of submission will be shifted to immediate next working day.
4. The tenderer must obtain for himself on his own responsibility and at his own expenses all the Information which may be necessary for the purpose of filling this tender and for entering into a Contract for the execution of the same and must examine the drawings and inspect the site of the work and acquaint himself with all local conditions and matters pertaining thereto.
5. Each of the tender document is required to be signed by the person or persons submitting the tender in token of his / their having acquainted himself / themselves with the General Conditions etc as laid down. Any tender with any of the documents not signed will be rejected.
6. The tender documents must be filled in English and all the entries must be made properly & clearly by the hand and Written in ink. If any of the documents are missing or un- signed, the tender shall be considered invalid.
7. All erasures and alterations made while filling the tender must be attested by initial of the tenderer. Over writing of figures is not permitted. Failure to comply with either of these conditions will render the tender void. No advice or any change in rate or conditions after submission of the tender will be entertained. All the rates should be quoted both in figures and words. If on check there are differences between the rates given by the contractor, in words and figure or in amount workout by the contractor, the following procedure shall be followed.
  - i) When there is a difference between the rate in figures and in words, the rate, which corresponds to the amount worked out by the Contractor, shall be taken as correct.

- ii) When the amount of an item is not worked out by the contractor or it does not correspond with the rate written either in figures or in words, then the rate quoted by the contractor in words shall be taken as correct.
  - iii) When the rate quoted by the contractor in figures and words tallies but the amount is not worked out correctly, the rate quoted by the contractor shall be taken as correct and not the amount.
9. The intending tenderer shall deposit EMD by DD / BC drawn in favour of Bank of Baroda, Regional Office, Ernakulam of Rs 60,000/- as the Earnest Money as guarantee of good faith, which amount shall be forfeited as liquidated damages in the event of any evasive/ refusal or delay in signing the contract. The deposit of the unsuccessful tender will be returned without interest immediately after a decision is taken regarding the award of the Contract. The Earnest Money of the successful tender will be adjusted towards Security Deposit. A tender not accompanied by Earnest Money Deposit will not be considered. No concession will be made to public Sector companies from Payment of Earnest Money Deposit.
  10. The successful tender will have to pay as the 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 favor of the Bank of Baroda, Regional Office Ernakulam payable at Ernakulam. The initial security deposit is to be paid by the Contractor to Bank within 14 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 i.e. 2 months and will be refunded to the contractor with out any interest, after issue of the virtual completion certificate. No interest is allowed on the retention money.
  11. Retention of 8% of the value of the work done from every running bill will be deducted till total retention including EMD and SD paid earlier, is 5% of the contract value, and shall be held by the Bank as Total Retention amount. On the Architect's certifying to the completion of the work, 50% of total security deposit shall be released to the contractor with the final certificate of payment and the balance payment will be retained for a further period of TWELVE months after the completion certificate is issued by the Architects and agreed by the Bank.
  12. Within one week of the receipt of intimation from Architects of the acceptance of his / their tender, the successful tenderer shall be bound to implement the contract by signing an agreement in accordance with the Agreement and Conditions of Contract attached herewith, but the work order or the written acceptance by the Employer of a tender will constitute a binding agreement between the Employer and the person tendering whether such formal Contract is or not subsequently entered into.
  13. All compensation or other sums of money payable by the Contractor to our 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 15 days of being asked to do make good in cash or by cheque any sum which have been deducted from his security deposit.
  14. The contractor shall arrange for the procurement of all the materials at site as required and directed, and store them in his godown at the site of construction and also bear all the expenses incurred in therewith payment of taxes, octroi etc.
  15. The rates quoted by the Contractor shall include all eventualities such as heavy rain, sudden floods etc which cause damage to the executed work or which may may totally wash out the work. Until the completion certificate is issued to the Contracts, our Clients will not be responsible for such damage or wash out of the construction work.
  16. Time is the essence of the contract. The work should be completed in **45 days** 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 work to be done so that the work gets completed within the stipulated time. The chart showing the item wise/location wise/floor wise progress which he (the contractor) intends to make to enable him to conveniently and practicably complete the work in all respects within the agreed time as per contract. The chart will be scrutinized and approved by the Architects with suitable modifications, as and if necessary and the approved chart will then form part of the agreement, being the basis for assessment of progress under the relevant conditions of contract shall be submitted within 7 days from the date of acceptance of the tender. The chart may from time to time during the progress of the work be reviewed and modified with the approval of the Architects keeping in view the agreed date of completion.

17. 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 estimated amount for each week beyond the date that the work remains incomplete subject to maximum of 10% of the contract value (without extra items) as per Clause 17 of the General Conditions of Contract.
18. The quantities contained in the Schedule are only approximate. The work as carried out and done will be measured up from time to time, for which payment will be made subject to the terms and conditions of contract.
19. The unit price shall be deemed to be fixed price. In case of extra items, a record of labor charges paid shall be maintained and shall be presented regularly to the Architects 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.
20. Our clients. Bank of Baroda, Ernakulam do not bind themselves to accept the lowest or any tender and reserve to themselves the right to accept or reject any or all tenders either in whole or in part, without assigning any reason for doing so.
21. 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 liable to be cancelled, if either the contractor or any of his employee is found 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.
22. The work Architect or any reference with architect may be read null and void in the present contract / agreement if architect is not employed in the project. Premises department, BOB, RO will act as architect if so specified.

**PRE QUALIFICATION CRITERIA :**

CONTRACTOR/AGENCY/FIRM WHO ARE DESIROUS OF TENDERING FOR ABOVE WORK AND FULFILLS FOLLOWING MINIMUM REQUIREMENTS ONLY NEED TO APPLY

- i. a) The contractors/Firms should have carried out a minimum of 3 works of similar nature successfully completed, each work valued at not less than Rs 24 lakhs during the last 7 years ending as on 28<sup>th</sup> February 2018.

OR

- (b) 2 works of similar nature successfully completed valued at an amount not less than Rs 30 lacs during the past seven years ending as on 28<sup>th</sup> February 2018.

OR

(c) One work of similar nature successfully completed of value not less than Rs 50 lacs during the last seven years ending as on 28<sup>th</sup> February 2018.

- ii. The average annual turnover of the contractor during the last three year ending 31<sup>st</sup> March 2018 should not be less than Rs 60 lacs and also fulfilling any of the following. Solvency should be issued of Minimum 50 Lacks issued not before 01.01.2018.

In addition to above, for electrical & Air Conditioning works the Contractor should hold valid license from the appropriate statutory authority for carrying electrical works / AC works as per the existing laws of the concerned electricity board/Municipal Corporation/Panchayat, as the case may be.

\*Similar Job: Interior, electrical, air conditioning & allied works of banks/commercial / administrative / Institutional buildings.

The agency bidding for this job should have full-fledged office preferably in Kerala and expertise in construction field,

The firm should have sufficient number of experienced personnel, technical know-how, and other resources for the completion of subject work.

1. APPLICATIONS BY THOSE FIRMS WHO DO NOT SUBMIT PERFORMANCE CERTIFICATES/COMPLETION CERTIFICTAE & WORK ORDERS FROM THEIR PREVIOUS EMPLOYERS / CLIENTS ARE LIABLE FOR REJECTION .For certificates, the issuing authority shall not be less than an Executive In charge.

**Basic Information**

1	Name of the applicant / Organization  Address of the Registered Office  Address of office in preferably in Kerala.  (With Phone Nos Fax Nos & Email ID & Contact Person)	
2	Year of establishment	

3	<p>Type of the organization (Whether sole proprietorship, Partnership, Private Ltd. or Ltd. Co. etc.)</p> <p>(Enclose certified copies of documents as evidence)</p>	
4	<p>Name &amp; qualification of the Proprietor / Partners / Directors of the Organization / Firm</p> <p>a)</p> <p>b)</p> <p>c)</p> <p>Enclose certified copies of document as evidence</p>	
5	<p>Details of registration – Whether Partnership firm, Company, etc. Name of Registering Authority, Date and Registration number.</p> <p>Enclose certified copies of document as evidence</p>	
6	<p>Whether registered with Government / Semi – Government / Municipal Authorities of any other Public Organization and if so, in which class and since when? (Enclose certified copies of document as evidence)</p>	
7	<p>No. of years of experience in the field and details of work in any other field.</p>	



	Whether ISO certified, furnish the details.	
8	Area of business activities other than construction, if any, and place of business.	
9	Address of business activities other than construction if any, and place of business	
10	<p>Address of the registered/office through which the proposed work of the Bank will be handled and the Name &amp; Designation of officer in charge.</p> <p>a. Three similar completed works each costing not less than Rs 24 Lacks OR</p> <p>b. Two similar completed works each costing not less than Rs 30 Lacks OR</p> <p>c. One similar completed work costing not less than Rs 50 Lacks.</p>	

11	<p>[a] Yearly turnover of the organization during last 3 years (year wise) and furnish audited balance sheet and Profit &amp; Loss A/c (Audited) for the last -3- years.</p> <p>[b] Committed turnover in</p> <p>2015 - 2016</p> <p>2016 - 2017</p> <p>2017 - 2018</p> <p>[c] Turnover till March 2018</p>	
12	<p>Name &amp; Address of Bankers</p> <p>(Solvency certificate from a Bank to be enclosed for indicating satisfactory financial capacity of the organization)</p> <p>MINIMUM 50 LACKS ISSUED NOT BEFORE 01.01.2018.</p>	<p>1.</p> <p>2.</p> <p>3.</p>
13	Enclose copy of latest income tax clearance certificate.	
14	PAN No.	
15	Details of registration for sales tax.	



19	Furnish the names of -3- responsible persons along with their designation, address, Tel.No., etc., for whose organization, you have completed the above mentioned jobs and who will be in a position to certify about the performance of your organization.	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>
20	<p>Whether any Civil Suit / litigation arisen in contracts executed / being executed during the last 10 years. If yes, please furnish the name of the project, employer, Nature of work, Contract value, work order and brief details of litigation. (Proforma-5)</p> <p>Give name of court, place, and status of pending litigation.</p>	Attach a separate sheet if required.
21	Information relating to whether any litigation is pending before any Arbitrator for adjudication of any litigation or else any litigation was disposed off during the last ten years by an arbitrator. If so, the details of such litigation are required to be submitted.	
22	No. of supplementary sheets attached for Part - II	

NOTE: Attach extra sheets with Sr. No if the space found less.

**LIST OF SIMILAR PROJECTS EXECUTED OF BY THE CONTRACTOR/FIRM DURING THE LAST 7 YEARS ENDING AS ON 28<sup>th</sup> FEBRUARY 2018.**

Sl No	Name of work/ project with address.	Name & full postal address of the owner. Specify	Contract Amount (Rs.)	Stipulated time of completion (Years)	Actual time of completion (years)	Any other relevant information.  Actual amount of the Project, if increased, give reasons.	Enclose clients certificate for satisfactory completion.
1	2	3	4	5	6	7	8

**Notes:**

Information has to be filled up specifically in this format.

Date shall be reckoned from the date of advertisement of the notice in news papers.

For certificates, the issuing authority shall not be less than an Executive In charge.

Performance/Completion certificates will necessarily be submitted along with Work Orders.

SEAL WITH SIGNATURE OF THE BIDDER

**LIST OF IMPORTANT WORKS OF SIMILAR NATURE ON HAND**

Sl no	Name of work/ project with address	Name & full postal address of the owner. Specify whether Govt. under taking along with name, address and contact nos. of -2- persons (Engineers or top officials of the organization)	Contract Amount (Rs.) (for construction work only) with copy of Work Order & completion certificate from project in- charge.	Stipulated time of completion (Years)	Present status of the project	Any other relevant information
	2	3	4	5	6	7

Note:-

Information has to be filled up specifically in this format

**DETAILS OF KEY PERSONNEL, GIVING DETAILS ABOUT THEIR TECHNICAL QUALIFICATION & EXPERIENCE INCLUDING THAT IN YOUR ESTABLISHMENT**

Sr. No		Name and	Age	Qualification	Experience	Nature of works handled	Name of the projects handled costing over Rs. 9 crores	Date from which employed in your	Indicate details of experience for similar projects.
A	B	C	D	E	F	G	H	I	J
1	Details of Qualified In-house Civil Engineers/technical persons/supervisors /skilled experienced persons/foreman, with details of experience in similar works.								
2	Details of in-house Specialists for any other work								

Information has to be filled up specifically in this format. Indicate other points, if any, to show your technical and managerial competency to indicate any important point in your favour.

### GENERAL INSTUCTIONS / CONDITIONS TO THE TENDERERS

1. TENDERS ARE HEREBY INVITED ON BEHALF OF BANK OF BARODA **FOR**, INTERIOR FURNISHING ,ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS,ERNAKULAM at Estimated cost of **Rs. 60.00 Lacks**
2. THE TENDERS IN TWO ENVELOPS SUPER SCRIBED ON BOTH ENVELOPES(TECHNICAL BID-ENVELOPE-1 & FINANCIAL BID ENVELOPE-2)WITH **TENDER FOR INTERIOR FURNISHING, ELECTRICAL & AIR CONDITIONING WORKS AT ALTERNATE PREMISES OF REGIONAL OFFICE & SMS, ERNAKULAM** WHICH SHOULD ALWAYS BE PLACED IN SEALED COVER, WITH THE NAME OF THE PROJECT WRITTEN ON THE ENVELOPES WILL BE **DEPUTY GENERAL MANAGER, BANK OF BARODA, REGIONAL OFFICE, 1<sup>ST</sup> FLOOR, VASUDEVA BUILDING, T.D. ROAD, ERNAKULAM – 682 011 , KERALA, INDIA UP TO 04:00 P.M. OF 23.07.2018.**
  - (I)ENVELOPE-I CONTAINING CONTRACTOR'S TERMS AND CONDITIONS,WORK ORDERS,PERFORMANCE/COMPLETION CERTIFIATES,ALL REQUIRED PAPERS AS REQUIRED IN BASIC INFORMATION TECHNICAL ASSUMPTIONS ALONG WITH DEMAND DRAFT(EMD) FOR **Rs. 60,000/-** IN FAVOR OF **BANK OF BARODA, REGIONAL OFFICE, ERNAKULAM** AS E.M.D .TENDER WILL BE OPENED IN THIS OFFICE ON 24.07.2018 AT 11.00 A.M.
  - (II)ENVELOPE-II containing priced bid – To contain Architects tender documents along with bill of quantities will be opened after evaluation of technical bid.
3. The contractor should quote in figures as well as in words the rate, and amount tendered by them. The amount for each item should be worked out and requisite total given in English Language only.

The EMD of the contractor whose tender is accepted, shall be forfeited in full in case he does not remit the initial security deposit within the stipulated period or start the work by the stipulated date mentioned in the work order
4. The acceptance of the tender will rest with the Bank of Baroda, which does bind itself to accept the lowest tender, and reserves to it self the authority to reject any or all of the tenders in which any of the prescribed conditions are fulfilled or are incomplete in any respect or liable to be rejected.
5. The bank reserves the right to accept the tender in full or in part and the tenderer shall have no claim for revision of rates or other conditions if his tender is accepted in parts.
6. Canvassing in connection with tenders is strictly prohibited and the tender submitted by the contractors who resort to canvassing will be liable to rejection
7. All rates shall be quoted on the proper form of the tender along before quoting the rates the rates the tender shall have to read and understand the various clauses mentioned in general conditions and special conditions of this contract along with drawings and specifications.
8. Bills of quantities in in respect of each work and a specification accompany this tender notice. The tenderers must use only the form issued by the Architects to fill in the rate. The Bills of quantities are liable to alternations by omission, deduction or addition at the discretion of the Architects. Each tender should contain not only the rates but also the value of each item of work entered in a separate column and all the items should be totaled up in order to show the aggregate value of the entire tender.
9. In the event of the tender submitted by a Partnership firm, it must be signed separately by each member thereof, or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so; such power of attorney shall be produced with the tender and it must disclose that the firm is registered under the Indian Partnership Act and a copy of the Partnership deed should be attached. In the case of Proprietary concern, the Sole Proprietor should sign.In the case of Limited Co., the Managing Director or



- any other Director authorized to sign, with name and address and designations of all Directors and seal of the Company supported by a resolution of the Company.
10. The tenderer shall also inspect and examine the site and its surroundings and shall satisfy himself before submitting his tender as to the nature of the ground and subsoil (so far as practicable) the form and nature of the site, the quantities and nature of work and materials necessary for the completion of the works and the means of access to the site, the accommodation how may require and in general shall himself obtain all necessary information as to rights contingencies and other circumstances which may influence or affect his tender and the Employer makes no assurance or representation to the tenderer in this behalf.
  11. Errors in the bills of quantities shall be dealt with in the following manner:
    - a) When there is a difference between the rates in figures and in words, the rates, which correspond to the amounts worked out by the contractor, shall be taken as correct.
    - b) When the amount of an item is not worked out by the contractor or it does not correspond with the rate written either in figures or in words, then the rate quoted by the contractors in words shall be taken as correct.
    - c) When the rate quoted by the contractor in figures and in words tallies but the amount is not worked out correctly, the rate quoted by the contractor shall be taken as correct and not the amount.
    - d) In case the contractor has not quoted both rate and amount for any items, then the maximum of the quotes for that item by other bidders shall be taken for assessing the value of his tender. Further, in case he is awarded the work, the rate for the said item shall be payable as per the lowest rate quoted by other bidders.
  12. The tenderer whose tender is accepted shall not be entitled to make any claim for increase in the rates quoted and accepted excepting in pursuance of any specific provision in the contract for such and then only in terms of that specific provision or to make any representation on the ground that he was supplied with any information or given any promise or guarantee of any sort, by the employer his agents and servants, the Architects or their representatives or any other persons, unless such information, promise or guarantee is furnished to the tenderer in advance of the date of receipt of tenders and in writing under proper authority.
  13. The work is to be carried out generally in accordance with I.E. Rules and Regulation the Local P.W.D. or C.P.W.D. specifications as the case may be and the I.S.S. in addition to the Architects' specifications, if any, forming part of the tender documents.
  14. Electrical Installation shall comply in all respect with the requirements of the Indian Electricity Act 1916 as amended from time to time and the Indian Electricity Rules currently in force.
  15. The materials to be used in electrical installations shall be of approved make and shall conform generally to the relevant Indian Standard Specifications.

16. On completion of the work the contractor shall furnish three sets of wiring diagrams and of conduit layout as executed in the installation. He shall also furnish a test certificate and guarantee in the standard form as prescribed by the Employer.
17. In the case of any class of work for which there is no specification in the said I.E. Rules and Regulations or Local P.W.D. specifications, the said Highways Manuals/specifications, the said regulations and rules, CPWD specifications and the I.S.S. or in the said Architects' specifications forming part of the tender documents or in case there is a variation, such work shall be carried out in all respects in accordance with the instructions and requirements of the Architects.
18. The work shall be carried out under the directions and supervision of the officials of the Employer and Architects and subject to the approval in all respects by the Employer and Architects.
19. On acceptance of the tender the Contractor shall in writing and at once inform the Employer and the Architects the names of his accredited representative (specifications) who will be responsible to take instructions from the Architects/Employer. The Contractor will be required to insure by CAR policy the work and keep it insured until one month after the date of taking over the works/installations by the Employer or otherwise in terms of the contract against loss or damage by fire and other usual risks other than the risks excepted in terms of the contract with the General Insurance Corporation of India or its subsidiaries. This CAR policy will be required to submit to bank within -7days from the date of acceptance of work order.
20. In carrying out the work the contractor shall comply with the provisions of the safety code, annexed to these papers. The tenderer shall comply with all provisions of laws including workmen's compensation Act, contract labour (Regulation & Arbitration) Act etc. If the Employer is made liable to pay any sum of money or incur any liability as a consequence of no performance or omission or commission on the part of the Contractor, the Employer is entitled to recover the same from the contractor or adjust against any money due to the Contractor.

On acceptance of the tender, the name of the accredited representative (s) of the Contractor who would be responsible for taking instructions from the Employer/ Architects shall be communicated to the Employer

## 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 herein after and the drawings, the work shall be carried out as per standard specifications and under the direction of the Employer / Architect

### 1. INTERPRETATIONS

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

- a. **'Employer'** shall mean Deputy General Manager, Bank of Baroda, Regional office, 1<sup>st</sup> Floor, Vasudeva Building, T.D. Road, Eranakulam – 682 011, Kerala, India. and any of its Employer/ Representatives authorized on their behalf.
- b. **'Contractor' shall mean**  
And shall include his / their heirs, legal representatives, assignees and successors.
- c. **'Site'** shall mean the lands and other places as shown bounded red on the site plan, on which the works are to be provided by the Employer or Architect for the purpose of the contract.
- d. **'Site Engineer/Supervisor'** shall mean any other engineer/skilled experienced person 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.
- e. **'Employer's Representatives'** shall mean any site Engineer or any clerk of works appointed from time to time by the Employer to perform the duties set forth in Clause 27 hereof whose authority shall be notified in writing to the Architects and Contractor by the EMPLOYER.
- f. **'Drawings'** shall mean the drawings referred to in the specifications and any modifications of such drawings approved in writing by the Architect and such other drawings as any from time to time during the execution of work be furnished or approved in writing of the Architect and Employer

The Contractor shall ask in writing for all clarifications on matters occurring any where 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 Employer / Architect may be able to give decisions hereon.

- h. **'Works'** shall mean the works to be executed in accordance with the contract specifications and schedule of quantities.
- i. **'Act of insolvency'** shall mean any Act of Insolvency as defined by the Presidency Towns Insolvency Act or the Provincial Insolvency Act or any act amending such original.
- j. **'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.
- k. **'The Schedule of Quantities'** shall mean the schedule of quantities as specified and forming part of this contract.
- l. **'Priced schedule of Quantities'** shall mean the schedule of quantities duly priced with the accepted quoted rates of the contractor.
- m. **'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.

- n. **'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.
- o. **'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 it.
- p. **'Actual Completion'** shall mean the building is in the opinion of the Architect and Employer fit for occupation.
- q. 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 scope of work covers supply, manufacture, installation testing and commissioning of the Electrical Installation work /Ac work at alternate premises of Regional Office & SMS,Ernakulam of **Bank of Baroda** , in accordance with the drawings, specifications etc. prepared by M/s. Binesh Sukumar Architects,, Ernakulam and under the direction and to the satisfaction of Architects and Banks Engineer. In regard to:

- a. The contractor has to make his own arrangement for movement of his men and materials to the required site/floor of the premises (working areas) at his own cost. All types of safety measures will be taken by the contractor.
- b. The variations or modifications of the designs, quality of works or the additions or omission or substitution of any work.
- c. Any discrepancy in the drawings or between the schedule of quantities and / or drawings and / or specifications.
- d. The removal from the site of any defective material brought thereon by the Contractor and the substitution of any other material thereof.
- e. The demolition removal and / or re-execution of any work executed by the contractor/s.
- f. The dismissal from the works any person employed thereupon.
- g. The opening-up for inspection of any work covered -up.
- h. The rectification and making good of any defect under clauses hereinafter mentioned and those arising during the maintenance period (retention period).

The Contractor shall forthwith comply and fully execute any work comprised in such Architect's Inspections provided always that instructions directions and explanations given to the Contractor or his representative upon the works by the Architect shall, if involving a variation, be confirmed in writing by the Contractor within 7 days and if not dissented from in writing within 7 days by the Architect, shall be deemed to be the Architect's instructions within the scope of contract.

If compliance with the Architect's instructions as aforesaid involved work and /or expense and /or loss beyond that contemplated by the contract, then unless the same were issued owing to some branch of his Contract by the contractor's, the Employer shall pay to the Contractor on the Architect's Certificate, the price if the said work (as on extra to be valued as herein after provided) and/or expenses and /or loss.

The Contractor shall set up a field laboratory with necessary equipments for day to day testing of materials like grading of course and fine aggregates, silt content and bulkage of sand etc.

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

**3. CONTRACTOR TO VISIT THE SITE:**

Each tenderer must before submitting his tender, visit the site of works so as to examine the physical site conditions and prices, availability and quality of materials according to specifications, drawing and Schedule of Conditions of contract, as all clauses therein contained are intended to be strictly enforced and the tenderer must include in his tender for all the provisions therein contained and for all contingencies which may arise. Employer makes no assurance or representation to the tenderer in this behalf. No extra claim regarding non-availability of materials or charges in the price will be entertained or extra allowed on that account at any stage.

**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.

The schedule of quantities shall be filled in as follows:

- i. The 'Rate' column to be legibly filled in ink in English, figures and English words.
- ii. Amount column to be filled in for such item and the amount for each sub bead and detailed in the Schedule of Quantities.
- iii. All corrections are to be initialed.
- iv The 'Rate column' for alternative items shall be filled up.
- v. The 'Amount' column for alternative items of which the quantities are not mentioned shall not be filled up.

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

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

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 / architect detailed analysis of any or all the rates shall be submitted. The Employer / Architects shall not be bound to recognize the contractor's analysis. The works will be paid for as 'measured work' on the basis of actual work done and not as 'lumpsum' contract.

All items of work described in the schedule of quantities are to be designed and paid as complete works and details including preparatory furnishing 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 lumpsum charges in the tender in respect of any item of works, the payment of such 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/Architect.

The employer has power to add to, omit from work as shown in drawings or described in specifications or included 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 tender shall note that the tender shall remain open for consideration for a period of 90 days from the date of opening of the tender.

**5. AGREEMENT:**

The successful Contractor shall be required to enter into an agreement in accordance with the Draft Agreement and Schedule of Conditions within 14 days from the date of work order whichever is earlier. The Contractor shall pay for all stamps and legal expenses incidental thereto. However, the written acceptance by the Employer, of the tender will constitute as a binding contract between the Employer and Contractor, whose tender has been accepted, whether such final agreement is or is not subsequently executed.

**6. OPENING UP WORKS:**

The Contractor shall notify the Architect in writing immediately, the trenches or excavation as shown on the drawings are get ready or as soon as any ground is cut into which, from unexpected causes appears to need immediate attention, after notifying the Architect, he shall await instructions which shall within seven days of receipt of such notices, if the Contractor put in any parts of the foundations before he has so notified the Architect and received instructions, shall be liable to reinstate all work that may subsequently be, at any time, damaged on account of any defect or insufficiency of the foundations. The Contractor shall at the request of the Architect, within such time as the Architect so desires, open for inspection any other work, and should the Contractor refuse or neglect, to comply with such request, the Employer, through the Architect may comply other workmen to open up the same. If the said work has been covered up in contravention of the Architect's instructions, or if, on being opened up, it be found in accordance with the drawings and specifications, or the instructions of the Architect, the expenses of such other workmen shall be borne by and recoverable or which may become due to the contractor. If the works has not been covered up in contravention of such instructions, then the expenses aforesaid shall be done by the Employer and be added to or the Contract sum, provided always hat in the case of foundations or of any other urgent work so opened up and requiring immediate attention, the Architect shall within seven days after receipt of the written notice from the Contractor that the work has been opened, make or cause the inspection thereof to be made, and at the expiration of such time if such inspection shall not have been made, the Contractor may cover the same and shall not be required to open it up again, except expenses of Employer.

**7. 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 any local authority, and of any water, lighting and other companies or 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 with 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.

**8. TAXES AND DUTIES:**

All works shall be measured net as finished and the rates quoted by the Contractors shall include for all cuttings, waste, breakages, etc. Tenderer must include in their rates, Sales Tax, GST, any local tax, Excise duty, loading/unloading of material at site, Octroi and other tax and duty levied by the Central Government or any State Government or Local Authority, if applicable. The rates quoted shall be firm till the completion of the entire work and no variation of rates will be entertained. The various statutory tax deductions implemented by the state and central government from time to time shall also be affected in the respective running bills. Electricity consumption charges as per the K.M.R.L. tariff should be borne by the contractor based on the actual consumption. No extra claim on this account will in any case be entertained.

**9. 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 including sanitation and electrical is to be complied with as per the requirements and bylaws of the relevant statutory authorities including contract labor (Regulation and Abolition) Act 1970.

**10. PRIME COST AND PROVISIONAL SUMS:**

a. Where 'Prime Cost' (P.C) prices or provisional sums of money are provided for any goods or works in the specifications or Schedule of Quantities, the same are exclusive of any trade discount, or allowances, discount for cash, or profit which the Contractor may require and or carriage and fixing.

b. All goods or work for which prime cost prices or provisional sums of money are provided may be selected or ordered from any manufactures or firms, at the discretion of the Architect or the Employer. The Employer reserves to himself the right of paying directly for any such goods or work and the Architect may deduct the said prices or sums from the amount of the contract. Should any goods or works for which prime costs or provisional sums are provided or portions of some be not required, such prices are sums together with the profits allow for such additional amount as the Contractor may have allowed for carriage and fixing will be deducted in full from the amount of the Contract. Whether the goods be ordered by the Contractor or otherwise the Contractor shall, at his own cost fix the same, if called upon to do so, and the Contractor shall also receive and sign for such goods and be responsible for their safe custody as and from the date of their delivery upon the works.

c. In cases in which provisional quantities of materials are contained in the contract, the Contractor shall provide such materials to such amounts or to greater or lesser

amounts, as the Architect shall direct in writing at the net rates at which he shall have priced such items in his Schedule of Quantities. Should however, any such items be omitted, which omissions shall be at the Architect's discretion, no profit on such items shall be allowed to the contractor.

d. No prime cost sum or sums (or any portion thereof) shall be included in any certificate for payment to the Contractor until the receipted accounts relating to them have been produced by the Contractor to the Architect. Such accounts shall show all discounts and any sum or sums in respect of such discounts shall be treated as a trade discount. Provided always, that should the Contractor in lieu of producing such receipted accounts, request the Architect in writing to issue a certificate on the Employer for such sum or sums due either on account or in settlement to a sub-Contractor direct, the Architect shall, upon satisfying himself that the sub-contractor, at the settlement of accounts and any profit or sum to which the Contractors properly entitles, in respect of such sub-contract, and which is in conformity with the terms of Contract as through of such certificates, to the sub-Contractor had been included in a certificate drawn in favour of the Contractor.

e. If the Contractor neither produces the receipt nor gives to the Architect to issue a Certificate in favour of such sub-Contractor direct, the Architect may upon giving the contractor 'SEVEN DAYS NOTICE' in writing of his intentions to do so, issue to the sub-Contractor such certificate direct to the Employer and obtain a receipt from the sub-Contractor which receipt shall be deemed a discharge for the amount of such certificates as through given by the contract. In such event, the Contractor shall not be allowed any profit he may have added in the Schedule of Quantities upon such sub-contract.

f. The exercise of the option before referred to by the Contractor and the issue of Certificates, as before described to sub-Contractor direct of certificates by the Architect, shall not however relieve the Contractor from any of the liabilities in respect of insufficient, faulty or incomplete work of the sub-Contractor for which he may liable under the terms of the Contract.

**11. SCHEDULE OF QUANTITIES & SUFFICIENCY OF SCHEDULE OF QUANTITIES:**

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.

**12. OTHER PERSONS ENGAGED BY THE EMPLOYER:**

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

**13. EARNEST MONEY DEPOSIT & SECURITY DEPOSIT:**

The tenderer will have to deposit an amount of **Rs. 60,000/-** In the form of Bank Demand draft/Banker's Cheque only drawn in favour of **Bank of Baroda , Regional Office, Ernakulam**, at the time of submission of tender as an Earnest Money. The Employer is not



liable to pay interest on the Earnest Money at any stage. The earnest money of unsuccessful tenderer will be refunded without any interest soon after the decision to award the work is taken or 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 7 days from the date of acceptance of the 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. The initial security deposit will be held by the Employer for the duration of the contract period it shall be refunded to the Contractor without any interest within 14 days after the issue of certificate of work completion.

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 as per the following: -

- 10% on First 1,00 000/-
- 7.5% on Special 1,00 000/-
- 5% on the balance amount

50% of the retention money shall be released with final certificate of payment after removing all his material, equipment, labour force, temporary sheds/ store from the site.

Balance retention money shall be released 14 days after completion of the defects liability period of one year from the date of work completion. In case of any defect observed in the work which is left not attended by the contractor, bank will be at liberty to carry out the work by utilizing the retention money.

#### **14. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY:**

The Contractor shall provide everything necessary for the proper execution of works according to the true intent and meaning of the drawings, specifications and Schedule of Quantities taken together whether the same may or may not be particularly shown or described there in provided that the same can be referred there from and if the Contractor finds any discrepancy in the drawings or between the drawings, specifications and Schedule of Quantities, he shall immediately refer the same in writing to the architect, who shall decide which shall be followed and his decisions shall be final and binding on all parties.

The Contractor shall provide for himself fresh water and electricity for the carrying out of the work at his own cost. The Employer shall charge the Contractor for his own unrented ground and shall on no account be responsible for the expense incurred by the Contractor for hired ground. If water from any source other than Municipal main is to be used for construction the same shall be tested at the contractor's cost and a report submitted to the Architect for his approval, before such water is used for the works.

The Contractor shall supply, fix and maintain at his cost, during the execution of any works, all the necessary centering, scaffolding, staging, timbering, strutting, shoring, pumping, fencing, hoarding, watching and lighting by night as well as day required not only for the proper execution and protection for the said works, but also for the streets, collars, vaults, pavements, walls, hoses, buildings and all their erections matters or things. The Contractor shall take down and remove any or all such centering, scaffolding, staging, planking, strutting, shoring etc as fully reinstated at his own cost and make good all the matters and things disturbed during the execution of the works to the satisfaction of the Architects.

**14. SITE INSTRUCTION BOOK:**

The contractor shall at his own expense keep an site instruction book at the site in which shall be entered all instructions given by the Architects or public authorities. A copy of the orders shall be sent to Architects for their confirmation within 3 days after the orders are given. The book shall not be removed from the site without the Architects' permission. Contractor will submit the photograph of work completion at different stages.

**15. TIME OF COMPLETION, EXTENSION OF TIME AND 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 the 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 extension of time hereinafter contained.

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

- a. by force major or
- b. 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 construction 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, quality of cement used, 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 details 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, of 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.

**16. CERTIFICATE OF WORK COMPLETION:**

The contractors shall intimate in writing to the Architects as and when the works are completed in all respects in order to enable the architect to intimate the Employer to take possession of the same. The works shall not be considered as completed, until the Architect has certified and accepted by the Employer in writing that the same have been 'Completed'. The defects liability period shall commence from the date of such work completion certificate.

**17. LIQUIDATED DAMAGES:**

Should the work be not completed to the satisfaction of the Architect / Employer within the stipulated period of 12 month 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 works remain un-commenced or unfinished after the expiry of the completion date. 1% of the estimated amount shown in the tender per week subject to a ceiling 10 % the accepted contracted sum.

**18. PROTECTIVE MEASURES:**

The Contractor from the time of being placed in possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on Sundays and other holidays. In case of sudden bans, political strikes special care to be taken regrading safety of work executed on site ,labours and materials. Contractor shall indemnify the Employer against any possible damage to site i.e. the tile floor, walls, glass, sanitary/plumbing fittings etc along with member of the public in course of execution of the work.

**19. STORAGE OF MATERIALS:**

The Contractor shall provide proper arrangements and maintain proper storage and adequate protection of materials and other work that may be executed on the site including the tools and materials of sub-contractors and remove same on completion.

**20. NOTICE AND PATENTS OF APPROPRIATE AUTHORITIES AND OWNERS:**

The Contractor shall indemnify the Employer against all claims in respect of patent rights, royalties, and damages to building, roads or member 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.

**21. CLEARING SITE AND SETTING OUT WORK:**

The site shown on the plan shall be cleared of all waste loose articles, and materials rubbish of all kinds. All hold or hollows whether originally existing or produced by removal or loose stone or materials shall be carefully filled-up with earth well rammed and leveled off as directed at the contractor's own cost.

The Contractor shall at his own expense, set out the works accurately in accordance with the plans and to the complete satisfaction of the Architect. The Contractor shall be solely responsible for the true and perfect setting out of the same and for the correctness of the positions, levels dimensions and alignment of all parts thereof. If at any time error shall appear during the progress or on completion of any part of the work, the Contractor shall at his cost rectify such error if called upon to the satisfaction of the Architects and Employer. The work shall from time to time inspected by the Architect and / or his

representatives, but such inspection shall not exonerate the Contractor in any way from his obligations to remedy defects at his own cost which may be found to exist at any stage of the work or after the same is completed. The site shall be delivered in a clean neat condition as required by Architect within a period of one week after job is completed. In case of failure by the contractor, Employer, under advice of the Architect have the right to get the site cleared to his satisfaction at the risk and cost of the Contractor.

**23. CONTRACTOR IMMEDIATELY TO REMOVE ALL OFFENSIVE MATTERS:**

All waste loose articles, and materials rubbish of all kinds shall be disposed off as per the rules and regulations of the Local Authorities concerned at contractor's cost. The Contractor shall keep the site clean and works free from water and shall provide and maintain at his own expenses electrically to the satisfaction of Architect / Employer for the purpose, until the site/premises is handover to the Employer completed in all respects. The accumulated to the satisfaction of the Employer and the local authority and no claims will be entertained afterwards if he does to include in his rates for the purpose. The contractor will hand over the site/premises in cleaned condition and completed in all respects.

**24. ACCESS TO WORKS:**

The Architect, the Employer and any person authorized by them shall at all reasonable times have free access to the works and to the workshops factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained. The Contractor shall give every facility to the Architect and the Employer and their representatives if inspection and examination and test of the materials and workmanship. No person unless authorized by the Architect or the Employer, except the representatives of Public Authorities shall be allowed on the works at any time. If any work is to be done at a place other than the site of works, the Contractor shall obtain the written permission of the Architect / Employer for doing so.

**25. MATERIALS, WORKMANSHIP, SAMPLES TESTING OF MATERIALS:**

All materials and workmanship shall, so far as procurable be of the respective kinds specified in the schedule of quantities and / or specifications and in accordance with the Architect's instructions and the Contractor shall be on the request if the Architect's furnish to them all invoices, accounts receipts and other vouchers to prove that the materials comply therewith. The Contractor shall at his own cost arrange for and / or carry any test of any materials which the Architect and employer may require. Any materials brought on site or incorporated in the works are found to be defective or unsound or not as per approved material with required dimensions, the Contractor shall remove the same and re-erect at his own cost. The Contractor shall as and when directed by the Architect / Employer arrange to test materials and / or proportions of the work at site or in any approved laboratory at his own cost in order to prove their soundness and efficiency. The Contractor shall transport all the materials from site to the approved laboratory at own cost. The Contractor shall carryout all the mandatory tests, as required.

**26. REMOVAL OF IMPROPER WORK AND MATERIALS:**

The Architect / Employer shall, during the progress of the works, have power to order in writing from time to time the removal from the works, within such reasonable time as may be specified in order to, of any materials which in the opinion of the Architect / Employer are not in accordance with the specification or the instructions of Architect / Employer, and the substitution of proper materials and the removal and proper re-execution of any work, which has been executed with materials or workmanship, not in accordance with the drawings and specifications or instructions, and the Contractor shall forthwith carry out such orders at his own cost. In case, of default on the part on the Contractor to carry our such orders, the Employer shall have to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be borne by the

Contractor, and shall recoverable from on behalf of the Employer or may deducted by the Architect from any money due or may become due to the Contractor

In view of correcting work not done in accordance with the contract, the Architect / Employer may allow such work to remain and in that case may make allowance for the difference in value together with such further allowance for damage to the Employer, as in his opinion may be reasonable.

No certificate, which may be given by Architects, shall relieve the Contractor from his liability in respect of unsound work or bad material.

**27. EMPLOYER'S REPRESENTATIVE:**

The Employer may appoint a supervisor 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 assistant 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 foreman 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.

**28. CONTRACTOR'S SUPERINTENDENCE & REPRESENTATIVE ON THE WORKS:**

The Contractor shall give all necessary personal superintendence during the execution of the work and so long thereafter as the Architect any consider it necessary until the expiration of the 'Defects Liability Period' stated in clause 42. The Contractor shall meet the Architect or his representative whenever required and so informed by the Architect.

The Contractor shall maintain and be represented on site, at all times while the work is in progress, by a responsible and efficient Foreman, approved by the Architect / Employer and who must thoroughly understand all the trades entitled and be constantly in attendance while the men are at work. Any directions, explanations, instructions or notices given by the Architect / Employer to such foreman shall be deemed to be given to the Contractor and shall be binding as such on the Contractor. The Foreman shall be thoroughly conversant with the English language and should be able to read, write and speak English.

**29. CONTRACTOR EMPLOYEES:**

The Contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the working hours and receive and comply with instructions of the Architect / Employer .The Contractor shall employ in connection with the works persons having the appropriate skill or ability perform their job

efficiently. The Contractor shall employ local laborers on the work as Indian National shall be employed on the work.

Any laborer 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. Contractor labor (Regulation & Abolition) Act, 1970 and central rules 1971
- e. Apprentice Act 1961

f. 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 cost and expenses may be incurred by the Employer in connection with any claim that may be made by any workman.

The Contractor shall comply at his own cost with their order of requirement of any Health Office of the State or any local authority or of the Employer regarding the maintenance of proper environmental sanitation of the area when the Contractor's laborers 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 laborers engaged on the work. He shall within 24 hours of the occurrence of any accident at or about the site or in the 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.

**30. DISMISSAL OF WORKMEN:**

The Contractor shall on the request by the Architect / Employer immediately dismiss from the works any person employed there who may, in the opinion of the Architect / Employer, be unsuitable or incompetent or who may misconduct himself and such person shall not again be employed or allowed on the works without the permission of the Architect / Employer.

**32. DAMAGE TO PERSONS AND PROPERTY INSURANCE ETC.,**

The Contractor shall be responsible for all injury to persons, animals or things and for all structural and decorative damage to property which may arise from operation or neglect of himself or any sub-contractor or of any of his or a sub-contractor's employees, whether such injury or damage any arise from carelessness, accident or any other cause whatever in any way connected with the carrying out of this Contract. This clause shall be held to include, inter alia, any damage to buildings, whether immediately adjacent or otherwise, any damage to roads, streets, footpaths, bridges, or ways otherwise any damage caused to the buildings and works forming the subject of this Contract, by frost or other instrument

weather. The Contractor shall indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under the acts of Governments or otherwise, and also in respect of any award of compensation or damages consequent upon such claim.

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

The Contractor shall indemnify the Employer against all claims which may be made against the Employer, by any member of the public or other party, in respect of anything which may arise in respect of the works or in consequence thereof and shall at his own cost, effect and maintain until the end of defects liability period of the Contract with an approved office, a policy of Insurance in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the Employer on the signing of the Contract. The Contractor shall also indemnify the Employer against all claims which may be made upon the Employer whether under the Workmen's compensation Act or any other statute in force during the currency of this contract or at Common Law in respect of any employee of the Contractor or of any sub-contract and shall at his own expense effect and maintain until the end of defects liability period of the Contract, with an approved office a policy of Insurance in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the Employer from time to time, during the currency of the Contract. In default of the Contractor insuring as provided above, the Architect on behalf of the Employer may so insure and may deduct the premium paid from money due or which may become due to the Contractor.

The Contractor shall be responsible for anything which may be excluded from the Insurance Policies above referred to and also for all other damages to any property arising out of and incidental to the negligent or defective carrying out of this contract however, such damage shall be caused.

The Contractor shall also indemnify the Employer in respect of any costs, charges or expenses arising out of any claim or proceedings and also in respect of any Award of or compensation of damages arising there from.

The Employer with the concurrence of the Architect shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs charges and expenses arising or occurring from or in respect of such claims of damages from any sums due or to become due to the Contractor.

### **33. CONTRACTOR'S ALL RISK POLICY (INSURANCE):**

The Contractor shall within -7- days from the date of acceptance of the work insure the works at his cost and keep them insured until one month after the works are taken over by the Employer or three months after the date of completion whichever is earlier, against loss or damage by fire and usual risks other than fire against which insures generally provide cover in a CONTRACTOR'S ALL RISK POLICY, with an insurer to be approved by the Architects, in the joint names of the Employer and Contractor (the name of the former being placed first in the policy), progressively for the full amount of the Contract, in three stages, beginning with 1/3 of the Contract value, and for any further sum as called upon to do so by the Architect, with the prior written consent of the Employer, the premium of such further sum being allowed to the Contractor as an authorized extra such policy shall cover the property of the Employer only and Architects and Supervisors fees for assessing the claim and in connection with his services generally in re-instatement and shall not cover any property of the Contractor or of any sub-contractor or employee. The Contractor shall deposit the policy and receipts for the premiums paid with the Architects within twenty-one days of the date of commencement of the work unless otherwise instructed by the Architects. In default of the Contractor insuring as provided above, the Employer or the Architect on his behalf may insure and may deduct the premium paid from any money

that may be due or that may become due to the Contractor. The Contractor shall as soon as the claim under the policy is settled, or the work reinstated by the insurers should they elect to do so, proceed with all diligence with the completion of the works in the same manner as though the fire or other such risk had not occurred and in all respects under the same conditions of Contract.

The Contractor in case of rebuilding or reinstatement after fire or other such usual risk shall be entitled to such extensions of time for completion as recommended by the Architect.

**34. ACCOUNTS RECEIPTS AND VOUCHERS:**

The Contractor shall upon from the request of the Architect / Employer furnish them with all the invoices, accounts receipts and other vouchers that they may require in connection with the works under this Contract. If the Contractor shall use materials less than that he is required under this Contract, the value of the difference in the quantity of the materials he was required to use and that he actually used shall be deducted from his dues. The decision of the Architect / Employer shall be final and binding on the Contractor as to the amount of materials the contractor is required to use for any work under this Contract.

**35. MEASUREMENTS:**

The Architect may from time to time intimate the Contractor that he requires the works measured and the Contractor shall forthwith attend or send a qualified agent to assist Architect or the Architect's representative in taking such measurements and calculations and to furnish all particulars or give all assistance required by either of them.

Should the Contractor not attend or neglect or omit to send such an agent, then the measurements taken by the Architect is approved by him shall be taken to be correct measurements. The measurements shall whenever not mentioned in the under, be taken in accordance with the Indian Standard Method of Measurements of Building works (I.S.1200-1958) and its revisions, if any.

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

All authorized extra costs, omissions and all variations made without the Architect's knowledge, if subsequently sanctioned by him in writing shall be included in such measurements.

The Contractor shall take joint measurements with the Architect / Employer's representative before covering up or otherwise placing beyond the reach of measurement any item of work. Should the Contractor neglect to do so, the same shall be uncovered at the Contractor's expense or in default thereof. No payment or allowance shall be made for such work or the materials with which the same was executed.

**36. PAYMENT:**

All bills shall be prepared by the Contractor in the form prescribed by Architect / Employers. Normally one interim bill shall be prepared subject to minimum value for work executed of Rs.10 Lacks as stated in these documents. The bills in proper formats must be duly accompanied by detailed measurements in support of the quantities of work done and must show deductions for all previous payments, retention money etc. The Architect / Employer 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 thereon within the period of honouring certificates named in these documents.

**37. FINAL PAYMENT**



The final bill shall be accompanied by a certificate of completion from the Architect / Employer. Payments of final bill shall be made after deduction of retention money as specified in the clause 13 of these conditions, which sum shall be refunded after the completion of defects liability period after receiving the Architect / Employer certificate that the Contractor has rectified defects to the satisfaction of the Architect / Employers. The acceptance payment of the final bill by the contractor would indicate that he will have no further claim in respect of the work executed.

**38. VARIATIONS / DEVIATIONS:**

The Contractor shall when directed in writing by the Architect, omit from or vary works shown upon the drawings or described in the specifications or included in the priced Schedule of Quantities, but the Contractor shall not make any alterations or additions to or omissions from the works or any deviations from the provisions of the Contract without such authorizations or directions in writing from the Architect / Employer.

No claim for extra shall be allowed unless it shall have been executed by the Authority of the Architect / employer as herein mentioned. Any such extra is hereinafter referred to as on authorised extra. No variations i.e. additions, omissions or substitutions shall vitiate the Contract.

The prices of all such additional items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required.

**39. SUBSTITUTIONS:**

Should the Contractor desired to workmanship, he / they must obtain the approval of the Architect / employer in writing for any such substitutions well in advance. Materials designated in this specification indefinitely by such term as 'Equal' or 'Other Approved' etc. specific approval of the architect / Employers has been obtained in writing.

**40. HANDOVER POSSESSION FOR OCCUPATION AND USE ON COMPLETION**

The contractor shall handover possession to the Employer of the completed works in stages as and when required and directed by the Architect / Employer. The work site till the hand over to the Employer with all required furnishing will be contractor's responsibility. The Employer will take over the possession of completed works in stages as directed by the Architect and defect liability period will commence only from the date of final handing over of all the works accordingly.

**41. CLEARING THE 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 any kind and leave the whole of the site and the works clean and in a workman like condition to the satisfaction of the Architect / Employers.

**42. DEFECTS AFTER COMPLETION:**

Any defect, shrinkage, settlement or other faults which may appear with the 'Defects Liability Period' stated in the Appendix hereto or if none is stated then within 45 days after the virtual completion of the works arising in the opinion of the Architect, from materials or workmanship not in accordance with the contract, shall upon the directions and writing of the Architect / Employer and within such reasonable time as shall be specified therein, be extended and made good by the Contractor at his own cost and the Architect / Employer shall decide that the ought to be paid for such amending and making good and in case of defaults, the Employer may employ and pay any other person to amend make good such defects, shrinkage, settlements or other fault and all damages, loss and expenses consequent therein or incidental thereto shall be made good and borne by

the Contractor and such damage, loss and expenses shall be recoverable from by the Employer or may deducted by the Employer upon the Architect's certificate in writing from any money due or that may become due to the Contractor, a sum to be determined by the Architect equivalent to the cost of amending such works and in the event of the amount retained under clause 37 (certificate and payment) being insufficient, recover the balance from the Contractor.

**42. CONCEALED WORK:**

The Contractor shall give notice to the Architect / Employer whenever any work is to be buried in the earth, concrete or in the bodies of walls 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 option of the Architect / Employer be either opened up for measurements at the Contractor's expenses or no payment may be made for such materials. Should any dispute or difference 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 Architect / employer shall be accepted as correct and binding on the contractor.

**45. 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.

**46. SUSPENSION OF WORKS:**

If the Contractor, except on account of any legal restraint upon the Employer preventing the continuance of the works, or on account of any of the causes mentioned in the clause 'Extension of Time' or in the case or certificate being withheld of not paid when due, shall suspend works or in the opinion of the Architects, shall neglect or fail to proceed with due diligence in the performance of his part of the contract or if he shall more than once make default in the respects mentioned in clause ( removal of improper work and materials), the employer through the architect shall have the power to give notice in writing to the Contractor requiring that the works be provided within a reasonable manner, and with reasonable dispatch, such notice shall not be unreasonably given and must signify that it purports to be a notice under the provisions of this clause and must specify the acts or defaults on the part of the Contractor upon which it is based. After such notice shall have given, the Contractor shall not be liberty to remove from the site of works, or from any ground contiguous thereto, any plant or materials belonging to the him which shall have been placed thereon for the purpose of work, and the Employer shall have lien upon such plants and materials to subsists from date of such notice being given until the notice shall not under complied with. Provided always that such lie shall not under any circumstance subsist after the expiration of 30 (thirty) days from the date of such notice given, unless the Employer shall have entered upon and taken possession of the works and site as hereinafter provided.

If the Contractor shall fail for seven days after such notice has given, to proceed with the works as therein prescribed, the Employer may enter upon and take possession of the works and site, and of all such plants and materials thereon intended to be used for the works, and the Employer shall retain and held a lien upon all such plants and materials until the work shall have been completed under powers hereinafter conferred upon him.

If the Employer shall exercise the above power, he may engage any other person to complete the works and exclude the Contractor, his agents and servants from entry upon or access to the same, except that the Contractor or any person appointed in writing may have access at all times during the progress of the works to inspect, survey and measure the works. Such written appointments or a copy thereof shall be delivered to the Architects before the person appointed comes on to the works and the Employer shall take such steps as in the opinion of the architect may reasonably necessary for completing the works, without undue delay or expenses using for that purpose the plant and materials above mention in so far as they are suitable and adopted to such use.

Upon the completion of the works, the architects shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid and in completing the works by other persons.

Should the amount to certified as the expenses properly incurred be less than amount which should have been due to the Contractor upon the completion of the works by him, the difference shall be paid to the Contractor by the employer, should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Employer. The Employer shall not be liable to make any further payments or compensations to the contractor for or on account of the proper use of the plant for the completion of the works under the provision herein before mentioned other than such payments as is included in the contract.

After the works shall have been completed by persons other than the Contractor under provisions hereinbefore contained, the Architect shall give notice to the Contractor to remove his plant and all surplus materials as may not have been used in the completion of the works from the site, if such plant and materials are not removed within a period of 14 days after the notice shall have been given the Employer may remove and sell the same, holding the proceeds less the cost of the removal and sale, to the credit of the Contractor. The Employer shall not be responsible for any loss sustained by the Contractor from the sale of the plant in the event of the contractor not removing it after notice.

**48. TERMINATION OF CONTRACT BY THE EMPLOYER:**

If the Contractor being an individual or a firm, commit any act of insolvency, or shall be adjudged an insolvent or being on incorporated company shall have an order for compulsory winding up made against it or pass on effective resolution for winding up voluntary or subject to the supervision of the court and if the Official Assignee of the Liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the architect that he is able to carry out and fulfill the contract, and to give security thereof, if so required by the Architect.

Or if the Contractor (whether an individual, firm or incorporated Co.) shall suffer execution to be issued.

Or shall suffer any payment under this Contractor to be attached by or on behalf of any of the creditors of the Contractor.

Or shall assign or subject this contract with out the consent in writing of the Architects / Employer first obtained.

Or shall charge or encumber this Contract or any payments due or which may be due to the Contract there under.

Or the Architect shall certify in writing to the Employer that the Contractor

- a. has abandoned the Contract, or
- b. has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 14 days after receiving from the Architect written notice to protect, or
- c. has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or
- d. has failed to remove materials from the site or to pull down and replace work for 7 days after written notice shall have been given to the contractor requiring the Contractor to observe or perform the same, or

- e. has neglected persistently to observed and perform all or any of the acts, matters or things by this contract to be observed and performed by the Contractor for 7 days after written notice shall have been requiring him to observe and perform the same, or
- f. has to the determinant of good workman ship or in defiance of the Architect's instructions to the contrary sublet any part of the Contract.

Then and in any of the said cases the Employer with the written consent of the Architect may not withstanding any previous waiver, after giving 7 days notice in written to the Contractor, determine the Contract, but without hereby affecting the powers of the Architect to continue in force as full as if the contract had been so determined and as if the works subsequently executed have been executed by or on behalf of the Contractor

And further, the Employer under instructions of the Architect, by his Agents, or servants may enter upon take possession of the works and all plants, tools, scaffoldings, sheds, machinery, steam and other power utensils and materials laying up on the premises or the adjoining lands or roads, and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other contractors or other person to complete the works and the Contractors or the persons to complete the works and the contractor shall not in any way interrupt or do not act, matter or thin to prevent or hinder such other contractor or other persons or person employed for completing and finishing or using the materials and plant for the works. When the works shall be completed of as soon thereafter as convenient, the Architect shall give a notice in writing to the Contractor to remove his surplus materials and plant, and should the Contractor fail to do so, within a period of 14 days after receipt there of by him, the Employer shall sell the same by publication and shall give credit to the Contractor for the amount realized. The Architect shall thereafter ascertain and certify in writing under his hand when (if thing) when shall be due of payable to or by the Employer for the value of the said plant and materials so taken a possession of by the expense or loss which the Employer shall been owing to the Contractor and the amount which shall be so certified shall thereupon the paid by the Employer to the Contractor or by the Employer as the case may be.

#### **49. ARBITRATION**

- a. All disputes or differences of any kind whatsoever which shall at any time arise between the parties here to touching or concerning the works or the execution or maintenance there of this contract or the rights touching or concerning the works or the execution or maintenance thereof this contract or the construction remaining operation or effect there of or to the rights or liabilities of the parties or arising out of or in relation thereof 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 either of them and to the appointing Authority who shall be appointed for this purpose by the employer (SBH) be referred for adjudication to a sole arbitrator to be appointed as hereinafter provided.
- b. For the purpose of appointing the sole arbitrator referred to above, the Appointing Authority will send within thirty days of receipt by him of the written notice aforesaid to the contractor a panel of three names of persons who shall be presently unconnected with the organization for which the work is executed.
- c. The Contractor shall on receipt by him of the names as aforesaid, select any one of the persons named to the appointed as a sole arbitrator and communicate his name to be appointed as a sole arbitrator and communicate his name to the Appointing Authority with in thirty days of receipt of the names by him. The Appointing Authority shall there upon with out any delay appoint the said persons as the sole arbitrator. If the contractor fails to communicate such selection as provided above within the period specified, the Appointing Authority should make the selection and appoint the selected person as the sole arbitrator.

- d. If the Appointing Authority fails to send to the Contractor the panel of three names as aforesaid within the period specified, the Contractor shall send to the Appointing Authority a panel of three months of persons who shall be unconnected with either party. The Appointing Authority shall on receipt by him of the names as the sole arbitrator. If the Appointing Authority fails to select the person and appoint him as the sole arbitrator within thirty days of receipt by him of the panel and inform the Contractor accordingly, the contractor shall be entitled to appoint one of the persons from the panel as the sole arbitrator and communicate his name to the Appointing Authority.
- e. If the Arbitrator so appointed is unable or unwilling to act or resign from his appointment or vacates his office due to any reasons whatsoever another sole arbitrator shall be appointed as aforesaid.
- f. 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 proceeding.
- g. The arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties fixing the date of first hearing. The arbitrator may from time to time, with the consent of the parties, enlarge the time making and publishing the award.
- h. The arbitrator shall give from time to time, with the consent of the parties, enlarge the time for making and publishing the award.
- i. 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 direction.
- j. The fees, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The costs referred to and of the award including the fees, if any, of the Arbitrator who may direct any by whom and in what manner, such costs or any part thereof shall be paid and may fix or settle the amount of costs to be so paid.
- k. The award of the Arbitrator shall be final and binding on both the parties.

Subject aforesaid the provisions of the Arbitration Act 1999 or any statutory modifications of reenactment thereof and the rules made there under, and for the time being in force, shall apply to the arbitration processing under this clause.

**The place for arbitration shall be in Ernakulam.**

## **50. WORK EXECUTION, DIMENSION & SUPERVISION**

The execution of work (timings) has to be carried out at the site, partly day time and / or partly night time and / or partly day and partly night time to the best convenience of the occupant and the building society. More labour need to be deployed during holidays and Sundays with suitable pre planning to carry out more work to the best convenience of the occupants. The contractor will not pay any idle wages or overtime wages or extra charges on any reason whatsoever. Hence contractor may factor these aspects while quoting the rates in the tender. Figures, dimensions, are in all cases to be accepted in preference 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. The contractor shall appoint at his own cost competent and adequate number of qualified & experienced staff 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.

**51. 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.

**52. 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.

**53. 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.

**54. 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 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. Incase of other drawing is required by the contractor he will give a minimum ten days notice to the Employer / Architect.

**55. 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.

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

The contractor shall furnish the Employer / Architect the following:

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

**56. 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 there to.

**57. 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.

**58. 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.

**60. INCOME-TAX ,TDS AND WORKS CONTRACT TAX**

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

**61. 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.

**62. WORKING HOURS**

Since the site is with all Working Departments, the Contractor has to execute the work judiciously without disturbance to the functioning of the Bank during the day and after working hours, nights & on holidays. No extra payments will be made for the work being done during odd hours.

**63. 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.

**64. 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.

**65. TYPOGRAPHICAL CLERICAL ERRORS**

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

**66. 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.



## FORM OF AGREEMENT

ARTICLES of AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ year 0000 between the **Deputy General Manager, Regional office, Bank of Baroda, Vasudeva Building, T.D.Road, Ernakulam – 682 011, Kerala, India.** (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 of renovations to BOB Branch Office (Herein referred to as “Project”).

AND WHEREAS the Employer in order to effectively carry out the said works has engaged M/s BINESH ARCHITECTS,ERNAKULAM (Hereinafter referred to as “Architects”) to prepare plans, drawings and specifications describing the works to be executed by the contractors, namely, interior 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. \_\_\_\_-- -0000.

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.60,000/-** \_\_\_\_\_ (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:

1) 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
- III. Documents (Vide Annexure-I).
- IV. 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.
- V. 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 present 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 Baroda  
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 authorised official

In the presence of -

1. (Name and Address)

2. (Name and Address)

## **BANK OF BARODA**

### **ELECTRICAL/AIR CONDITION INSTALLATION WORK SPECIFICATION**

#### **1. RULES AND REGULATIONS**

The installation shall be carried out in accordance with the Indian Electricity Rules 1956 as amended up to date and as required by Electrical Inspectorate local Electrical Authorities and as specified in the National Electrical Code.

#### **2. APPROVAL**

Necessary approval shall be obtained from the Electrical Authorities before commissioning. It shall be the responsibility of the successful tenderer to prepare necessary documentation, apply, follow up and obtain approval from Electrical Inspectorate, Local Electrical Authorities and any other competent authorities for all electrical designs, manufacture, erection of materials and equipments used. The approval shall be obtained both for the drawing stage and on completion of installation, which shall be obtained within the overall completion period stipulated in the tender documents. The statutory fees payable to the Electrical Inspectorate will be paid by the Client.

#### **3. QUOTED RATES**

The rates quoted shall be firm till completion of the work. No variation of rates will be allowed due to increase in cost of materials, labour, transport, taxes, Octroi, or any other reason whatsoever. The rates shall include all taxes. The rate shall be indicated net. The rates shall include Excise Duty, Sales tax on Works Contract etc.

#### **4. CIVIL WORKS**

The rates shall all civil works/repairs to civil works/repairs to civil works and fabrication required for the work required for the work. Nothing extra will be paid for these works.

#### **5. COMMISSIONING**

The rates quoted includes supply, transport, erection and commissioning.

#### **6. MATERIALS**

All materials, equipment, fittings, accessories and applications used on the electrical installation shall be of best quality obtainable and of approved

installation shall conform to the latest Indian Standard Specifications, wherever these exist. Wherever Indian Standard Specifications are not available, relevant British Standards shall be applicable. The tenderer must submit along with the tender, the name of manufacturers/catalogues etc., and shall be procured by the successful tenderer and used on the works unless he has obtained the prior approval of Consultants in writing.

Note:

Any materials supplied by the Bank like light fittings, ceiling fans, exhaust fans etc., should be under the safe custody of the contractor after receiving it from the Bank.

Any damage to such materials while under storage with the contractor is responsible for such damages and the contractor should replace such damaged and the contractor should replace such damaged items by new one at no extra cost to the Bank/Client.

#### 7. WORKMANSHIP

Good workmanship and neat installation are the pre-requisite for compliance with the various completion sections of these specifications. The work shall be carried out under the direct and constant supervision of a person, technically qualified sufficiently experienced, holding certificate of Competency issued by the Kerala State Government and in accordance with the statutory rules and regulations in force. The relevant I.S.I. Code of Practice shall be followed wherever applicable.

#### 8. DRAWINGS

Two copies of wiring diagram and layout plans, the schedule of quantities and specifications shall be furnished by the Architects to the Contractor for their own use until the completion of the contract, which shall be accessible at all reasonable times to the consultants or their representatives. The tender drawings indicate only the general scheme of requirements. It shall be the responsibility of the contractor that the location of distribution boards, cable routings etc., are got approved by Consultants/Banks Engineer well before the commencement of the work. Wherever required by the Architects, detailed drawings shall be prepared by the successful tenderer and got approved by Consultants and Banks Engineer.

On completion of the work, complete drawing and 'as built' shall be prepared by the successful tenderer and six copies of the same along with the reproducible print submitted to the employer through CONSULTANTS. The completion drawings shall indicate clearly the main switch board, the runs of various mains and sub-mains, position of points and their controls. All circuits shall be clearly indicated and numbered in the wiring diagram and all points shall be given the same number as the circuit to which they are electrically connected.

#### 9. PROVISION OF EARTHING

The buried earth wire/flat lead will be properly protected from mechanical injury by inserting them in to a suitable G.I. pipe recessed in wall and floor wherever considered necessary and carried upto the earth electrode. It shall be fixed over its entire length by clamps, saddles, staples etc. the earthing lead shall be securely bolted/welded to the earth electrode with bolt and washers of the base metal. The earthing lead shall be securely connected at the other end to main board and all items and mountings looped to all other iron clad switches and distribution boards.

10. GUARANTEE

The installation including the equipments, switchboards, cabling, earthing, etc., as specified in the Scheduled executed at site shall be guaranteed for a period of twelve months from the date of satisfactory commissioning after obtaining necessary approvals from Electrical Authorities.

11. All the switchboards and MCB DB' shall be powder coated. All other angle iron frame, metal parts shall be neatly painted with one coat of red oxide paint and two coats of enamel paint as required.

12. Definition and conventional symbols

The definition of terms in I.E.E. wiring regulations shall apply except the definition of a point.

- 12.1 Point wiring shall include all works necessary in complete wiring of a tumbler switch circuit of any length from the tapping point on the distribution board (viz. Sub-mains) to the following, via the switch:-

- a) Ceiling rose (in the case of ceiling and exhaust fan points).
- b) Ceiling rose or connector (in the case of pendants except stiff pendant points).
- c) Back plate (in case of stiff pendants).
- d) Socket outlet (in the case of socket outlet points).
- e) Lamp holder (in case of wall brackets, batten points, bulk head fittings and similar other fittings).

- 12.2 The following shall be deemed to be included in the point wiring:

- a) Switch and ceiling raws as required.

- b) in the case of wall brackets, bulk head fittings and all other light fittings cable as required upto the lamp holder.
- c) Bushed conduit or porcelain tubing or cilica pipe where cables pass through walls etc.
- d) Earth wire from three pin socket point to the common earth station.
- e) All wood or metal blocks, boards and boxes sunk or surface type including those required for mounting fan regulator but excluding those under the distribution board and main control switch.
- f) All fixing accessories such as clips, nails, screws, phil, plugs, rawl plug, wooden plug etc., as required.
- g) Joint for junction boxes and connecting the same as required.
- h) Connections to ceiling rose or connector, socket outlet, lamp holder, switch, fan regulator, etc.

Note - I

In the case of points with more than one light point controlled by the same switch, the complete item shall be considered as one point and the rate shall be accordingly quoted.

Note - II

A light point controlled by two nos. of two way switches shall be measured as one point from the fittings to the switches on either side.

13. Joints and looping back

Unless otherwise specified, the wiring shall be done in the 'Looping system' Phase and live conductors shall be looped at the switch box and neutral conductor can be looped either from the switch box or from the light, fan or socket outlet. Where 'Box system' is specified, all joints in the conductors shall be made of approved mechanical connectors in suitable and approved junction boxes.

14. WIRING OF DISTRIBUTION BOARDS:

In wiring a branch distribution board, the total of the consuming devices shall be divided as far as possible evenly between the numbers of ways of the board, leaving the spare circuit for future extension.

All connections pieces of apparatus or between apparatus and terminals on a board shall be neatly arranged in a definite sequence following the arrangement of the apparatus mounted thereon, avoiding unnecessary crossing.

Cable shall be connected to terminal only by soldered lugs, unless the terminal is of such a form that can be securely clamped without cutting cable strands.

All bare conductors shall be rigidly fixed in such a manner that a clearance of at least 2.5cm (1") is maintained between conductors of opposite polarity or phase and between the conductors and any material other than insulating material.

In a hinged board, the incoming and outgoing cables shall be neatly bunched and shall be fixed in such a way that the door shall be capable of swinging through an angle not less than 90 degrees.

If required in the Schedule of Quantities a pilot lamp shall be fixed and connected through an independent single pole switch and fuse to the bus-bars of the board.

15. CONDUIT WIRING SYSTEM

Surface conduit wiring system:

All conduit pipes shall be conforming to I.S. Specification as per IS 9537 part II. All conduit accessories shall be of threaded type. No conduit less than 20mm. In diameter shall be used. The capacity of conduits shall be in accordance with the Table I. The conduits shall bear the ISI mark and the name or trade mark of the conduit manufacturer on each length.

Table - I

Cross Of cable	Sectional area (copper conductor)	Size of MS conduit mm			
		20	25	32	38
1.5 Sq.mm		5	10	14	---
2.5 Sq.mm		5	8	12	---
4.0 Sq.mm		3	8	10	---
6.0 Sq.mm		2	5	8	---

10.0 Sq.mm	-	3	5	6
16.0 Sq.mm	-	-	3	6

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-----  
19.1 Conduit joints

Conduit pipes shall be jointed by means of threaded couplers and threaded accessories only. In long distance straight runs of conduit, inspection type couplers or running thread with couplers and jam nuts (bare threaded portion suitably protected with anti-corrosive paint) shall be provided. Thread in all cases shall be between 11mm to 27mm long sufficient to accommodate pipes to full threaded portion of couplers or accessories. Cut end of conduit pipes shall have no sharp edges or any burrs left to avoid damage to the insulation of conductors while pulling them through such pipes.

19.2 Protection against damages

In order to minimize condensation or sweating inside the tube, all outlets of conduit system shall be properly drained and ventilated, but in such a manner as to prevent the entry of insects.

19.3 Protection of conduit against rust

The outer surface of the conduit pipes, including all bends unions, tees, junction boxes etc., forming part of the conduit system shall be adequately protected against rust, particularly, when such system is exposed to weather. In all cases, no bare threaded portion of conduit pipe shall be allowed unless such bare threaded portion is treated with anti-corrosive preservative or covered with approved plastic compound.

19.4 Fixing of conduit

Conduit pipes shall be fixed by heavy gauge saddles, secured to suitable wood plugs or any other approved plugs with screws in an approved manner at an interval of not more than one metre, but on either side of couplers or bends, or similar fittings, saddles shall be fixed at a distance of 30 cm. from the centre of such fittings.

19.5 Bends in conduits

All necessary bends in the system including diversion shall be done by bending pipes; or by inserting suitable solid or inspection type normal bends, elbows or similar fittings; or by fixing cast iron inspection boxed



whichever is more suitable. Conduit fittings shall be avoided as far as possible on conduit system exposed to weather. Wherever necessary, solid type fittings shall be used. Radius of such bends in conduits pipes shall be not less than 7.5 cm. No length of conduit shall have more than three equivalent 90 bends from outlet to outlet, the bends at the outlets not being counted.

#### 19.6 Outlets

All outlets for fittings, switches, etc. shall be boxes of suitable metal of either surface mounting or flush mounting system. Wall thickness shall not be less than 1mm.

#### 19.7 Erection and earthing of conduit

The conduit of each circuit or, section shall be completed before conductors are drawn in. the entire system of conduit after erection shall be tested for mechanical and electrical continuity, throughout and permanently connected to earth conforming to the requirements specified under section 15 by means of special approved type earthing clamp efficiently fastened to conduit pipe in a workmanlike manner for a perfect continuity between each wire and conduit. Gas or water pipes shall not be used as earth medium. If conduit pipes are liable to mechanical damage they shall be adequately protected.

#### 19.8 Recessed conduit wiring system

This system of wiring shall comply with all the requirements of surface conduit wiring system specified in clauses 12.1 to 12.9 in addition to the following clauses.

#### 19.9 Making the chase

The chase in the wall shall be neatly made and be ample dimensions to permit the conduit to be fixed in the manner desired. In 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.

#### 19.10 Fixing of conduit in chase

The conduit pipe shall be fixed by means of staples or by means of saddles not more than 60 cm. 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.

### 19.11 Inspection boxes

Suitable inspection boxes shall be provided to permit periodical inspection and to facilitate removal of wires, if necessary. These shall be mounted flush with the wall. Suitable ventilating holes shall be provided in the inspection box covers.

## 20. Earthing

Except for equipment provided with double insulation, all non-current carrying metal parts of electrical installations are to be earthed properly. All metal conduits, cable sheaths, switchgear, distribution fuse boards, etc. shall be bonded together and connected to an efficient earth electrode. Medium voltage energy consuming plant and equipment shall have two separate and distinct connections with earth.

### 20.1 Earthing conductor:

Earthing conductor shall be of high conductivity copper circular or G.I. wire or any other suitable approved material to give equivalent conductivity and shall not be less than half the largest current carrying conductor for poly phase or (2.032 mm) dia copper wire but subject to an upper limit of 65 sq.mm. For equipment exceeding 750 KVA size shall be as per IS : 1886 - 1961.

### 20.2 Installation

The buried earthing lead will be properly protected from mechanical injury by a ½" (12 mm.) G>I. Pipe recessed in wall and floor where considered necessary and carried upto the earth electrode. It shall be fixed over its entire length by clamps, saddles, staples, etc. The earthing lead shall be securely bolted and soldered to the earth electrode with bolt and washers of the base metal. The earthing lead shall be securely connected at the other end to the main board and all its mountings and at the other iron clad switches and distribution boards.

### 20.3 Electrodes

#### a) Pipe:

The C.I. pipe shall not be less than 100 mm. Dia. And 3.0 m. long and shall be buried vertically into the earth with the top not less than 1.25m. (4 ft.) below ground level.

b) Plate:

The G.I. Plate shall be of size not less than 60 completion. X 60 cm. X 6mm. And the copper plate 60 cm. X 60 cm. X 3 mm. And shall be buried in the earth with their faces vertical and their tops not less than 3m. below ground level.

The electrodes shall be surrounded by alternative layers of charcoal or coke and salt. Watering arrangement with 12mm dia G.I. pipe with a funnel shall be provided, the latter being housed in a chamber 30 cm. X 30 cm. The resistance of earth electrode shall not exceed 5 ohms; that of earth continuity path from any point with the electrode shall not exceed 1 ohm and that of earthing connection of 1 ohm. The chamber should also have C.I. cover as specified in the B.O.Q.

## 21. UNDERGROUND CABLES

### 21.1 Trench:

Trenches shall not be less than 45cm. Wide and 60 cm. Below ground level. Whatever necessary, suitable propping and shoring may be done to avoid caving of the adjoining trench walls. Where the cables cross other service lines adequate protection should be taken to prevent accidental exposure and/or damage to the cables.

### 21.2 Spacing between cables:

Where more than one cable is laid in the same trench the actual space between the cables should normally be 23 cm. Apart leaving a clear distance of 15 cm. From the cable and the trench walls.

### 21.3 Laying of cables:

Before the cables are laid, a layer of 75mm sand face is to be provided for purposes of cushioning. The cables after being uncoiled and laid into the trench from the rollers should be covered with another layer of sand of about 15 cm. In depth, and the top surface to be suitably leveled to receive the cable covers. These covers may be of second class bricks or tiles and laid in a manner to overlap the cables on either sides by at least 5 cm. Cables markers of aluminum or G.I. shall be provided at ground level after being suitably embedded in concrete blocks of 20 cm. X 20 cm. X 5 cm. And spaced at a distance of about 30 m. from centre to centre and at every change in direction. Cables may also be laid in tire formation in the same trench. In this case also after the first 5 cm. sand cushion, the first tier of cable is laid and sand filled in the trench to form a bed of 23 cm. above this tier. After this the second cable is laid and process repeated the top most tier being at least 45 cm. below the ground level. The cable shall be suitably covered with bricks or tiles.

When laying the cables, care should be taken to see that the paper insulated cables are bent or straightened slowly and sharp radii avoided. The

minimum safe bending radius for single-core cables is 20 diameters and for multi-core cables 15 diameters and for armoured cables 12 diameter being the overall diameter of the cable. Where the cables are required to cross roads this should be normally taken through sleeve pipes at least 10 cm. in diameter which may be either in stoneware, steel or spun reinforced concrete. For more than one cable the diameter should not be less than 15 cm. steel pipe shall be used where it is not possible to obtain sufficient depth to withstand vibrations due to traffic.

Cables laid inside the building should be properly and be carried either in ducts with suitable covers with slab or chequered plates or fixed to walls by clamps, brackets or cable trays.

#### 21.4 Testing the cables:

High voltage test should be undertaken to ensure that no damage has occurred during the laying operation and that the joints are in order. Cables of 1.1 kv. Suitable for low and medium voltage should withstand for 15 minutes, 3000 volts D.C. current applied between the conductors and between the conductors and between each conductor and sheath. In absence of pressure testing arrangement it is sufficient to test for 1 minute with 1000 volts. If the test results are found to be not satisfactory the contractors shall arrange for having this set right at their cost, including removal of rejected materials, re-laying etc.

#### 22. Additional Specifications

- a) Any damage to walls, floors, etc. during installation and erection must be repaired by the contractor to match the original surface for which no extra amount will be paid.
- b) Rawl plug and rawl paste can be used for fixing the conduit etc.
- c) For surface (open) conduit system, Conduits shall be painted with two coats of synthetic enamel paint of approved quality and shade for protecting against corrosion.
- d) For conduits all the junction boxes, bends, etc. should be of inspection type and there must be electrical continuity throughout the length.
- e) Approved materials and fittings shall only be used. The Contractor shall replace the unapproved materials and fittings at his own cost.

- f) The contractor shall submit test report in duplicate for installation and for earth in the form specified by the concerned Electric Supply Company.
- g) As per relevant IEE regulation, all electrical equipment such as motors, switchgears, etc. should have two separate distinct earth connections.
- h) When aluminum cables are connected to copper bimetallic bus-bars etc. due care must be taken to prevent effects and the work must be of high standard ensure that Copper is tin coated.
- i) Always the copper bus-bar chambers of panel should be of tin coated.
- j) Intending tenders are advised to study all the drawings, specifications, conditions etc. in detail and inspect the site before submitting tenders so as to ascertain the nature and scope of the work involved and the methods to be adopted in executing the work.
- k) The rate quoted shall include cost of cutting holes and chase in walls, floor slabs, repairing the same and restoration of original surface. Noting extra shall be entertained on this account.
- l) The Contractor will also be required to submit the 'Form of Completion Certificate' in the required performa.
- m) Any excess materials brought at site shall be taken back without any extra cost. If any payment is made for the excess payment shall be deducted in their final bill.

## TEST OF INSTALLATION

### Insulation resistance

- a) The insulation resistance shall be measured by applying between earth and the whole system of conductors or any section thereof with all fuses in place and all switches closed and except in earthed concentric wiring all lamps in position or both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it need not exceed 500 volts for medium voltage circuits. Where the supply is derived from the three wire (A.C. or D.C. ) or a poly phase system, the neutral pole of which is connected to earth either direct or through added resistance, the working pressure shall

be deemed to be that which is maintained between the outer of phase conductor and the neutral.

- b) The insulation resistance in meg-ohms of an installation measured as above shall not be less than the value of fifty divided by the number of points on the circuit provided in the installation. And the insulation resistance need not be greater than one megohm.
- c) Control rheostats, heating and power appliances and electric signs may, if required, be disconnected from the circuit during the test, but in that event the insulation resistance between the case of frame work and all live parts or each rheostat appliance and sign shall not be less than that specified in the relevant Indian Standard Specification or where there is no such specification shall not be less than half a megohm.
- d) The insulation resistance shall also be measured between all conductors connected to one or phase conductor of the supply and all the conductors connected to the middle wire or the neutral of to the other pole or phase conductors of the supply and its value shall not be less than that specified in sub clause (b).
- e) On completion of an electric installation (or an extension to an installation) a certificate shall be furnished by the contractor countersigned by the qualified supervisor under whose direct supervision the installation was carried out. The certificate shall be in the prescribed form as required by the local Electric Supply Authorities. One such recommended form is given in Appendix B.

Testing earth continuity path:

The earth continuity conductor including metal conduits and metallic envelopes of cables in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit-breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

Testing of polarity of non-linked single pole switches:

- a) In a two wire installation a test shall be made to verify that all non-linked single pole switches have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply.
- b) In a three wire or a four wire installation, a test shall be made to verify that every non-linked single pole switch is fitted in a conductor which is labeled

or marked for connection to one of the outer or phase conductor of the supply.

EXTRACT FROM INDIAN ELECTRICITY RULES, 1956 :

Identification or earthed and earthed neutral conductors and position of switches and cutouts therein:

Where the conductors include an earthed conductors of two-wire system or an earthed neutral conductor of a multi - wire system or a conductor which is to be connected thereto, the following conditions shall be complied with :-

A indication of a permanent nature shall be provided by the owner of the earthed or earthed neutral conductor, or the conductor which is to be connected thereto, the enable such conductor to be distinguished from any live conductor. Such indication shall be provided :-

- a) Where the earthed or earthed neutral conductor is the property of the supplier, at or near the point of commencement of the supply.
  - b) Where a conductor forming part of a consumer's system is to be connected to the supplier's earthed or earthed neutral conductor, at the point where such connection is to be made; and
  - c) In all other cases, at a point corresponding to the point of commencement of supply or at such other point as may be approved by an inspector.
2. No cut-out, link or switch other than a linked-switch arranged to separate simultaneously on the earthed or earthed neutral conductor and live conductor shall be inserted or remain inserted in any earthed or earthed neutral conductor of a two-wire system or in any earthed or earthed neutral conductor of a multi-wire system or in any conductor connected thereto with the following exceptions;
- a) A link for testing purposes, or
  - b) A switch for use in controlling a generator or transformer.

Earthed terminal on consumer's premises :

1. The supplier shall provided and maintain on the consumer's premises for the consumer's use a suitable earthed terminal in an accessible position at or near the point of commencement of supply as defined under Rule No. 58.

Provided that in the case of medium, high or extra high-voltage installation the consumer shall, in addition to the aforementioned earthing arrangement, provide his own earthing system with an independent electrode;

Provided further that the supplier may not provide any earthed terminal in the case of installations already connected to his system, on or before the date to be specified by the State Government in this behalf if he is satisfied that the consumer's earthing arrangements is efficient.

- 2. The consumer shall take all reasonable precautions to prevent mechanical damage to the earthed terminal and its lead belonging to the supplier.
- 3. The supplier may recover from the consumer the cost of installation of such earthed terminal on the basis laid down in sub-rule(2) of Rule No. 82.

Connection with earth :

- 1. The following provisions shall apply to the connection with earth of systems at low voltage in cases where the voltage normally exceeds 125 volts and of systems at medium voltage:-

The neutral conductor of a three-phase four-wire system and the middle conductor of a two-phase three-wire system shall be earthed by not less than two separate and distinct connections with earth both at the generating station and at the cub-station. It may also be earthed at one or more points along the distribution system or service-line in addition to any connection with earth which may be at the consumer's premises.

The frame of every generator, stationary motor and so far as is practicable, portable motor and the metallic parts (not intended as conductors) of all transformers and any other apparatus used for regulating or controlling energy and all medium voltage energy consuming apparatus shall be earthed by the owner by two separate and distinct connections with earth.

TEST CERTIFICATE AND MAINTENANCE GUARANTEE:

- 1. I/We certify that the installation detailed below has been installed by me/us and tested and that to the best of my/our knowledge and belief, it complies with Indian Electrical Wiring Installations (System Voltage not exceeding 650 Volts) (Revised) :

Electrical installation at .....



Voltage and system of supply.....

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Total Type of system

(a) Particulars of work : Number load of wiring

-----

(1) Light points ...

(2) Fan points ...

(3) Plug points (3 pin)..

(4) Motors ...

(5) Other plant ...

(b) Overhead lines ...

(c) Underground cables ...

(d) Earthing :

(1) Type of materials & Size of electrode  
:.....

.....

(2) Number of electrodes : .....

(3) Size of material of earthware : .....

(e) Test results :

(1) Insulation resistance for the whole installation:  
(For all DB circuit wires)

(i) Between conductors : .....

(ii) Between each conductor and earth : .....

(2) Resistance of earthing of each electrode & total earthing system

- .....
- (3) Maximum earthing resistance of installation :  
.....  
.....
- (4) Insulation resistance of each UG cable :  
.....
- (5) Polarity test : .....

2. I/We guarantee the installation for a period of twelve months against defective materials and workmanship, the guarantee commencing from the date the installation is taken over by the owner and during the period of guarantee I/We shall rectify or replace defects in material or workmanship free of cost to the owner.

I/We submit herewith six sets of drawings showing the installation and conduits layout as actually executed.

Signature of Supervisor  
Contractor

Signature of

Name : ..... Name :

.....

Address : ..... Address :

.....

**DISTRIBUTION BOARD:**

1.0 it is proposed to install suitable size distribution board for power and lighting distribution. It shall have adequate rating of incomer and outgoing isolator/breaker and shall be suitable for indoor installation. The distribution board shall include all accessories and shall be complete in all respects and any item not included in the specification but essential for proper operation of the equipment and also to meet safety and relevant agencies requirements shall be deemed to be within the scope of the specification whether it is specifically mentioned in the tender/document or not.

- 1.1 The distribution boards shall be made out of (2.032mm) sheet steel metal clad, totally enclosed, dust, damp and vermin proof suitable for front operation. The DBs shall be suitable for wall/column mounting. It shall have bolted type front door. an overall door of hinged type shall be provided with lock provision.

All distribution boards shall have removable gasketed top and bottom plates suitable knock-out. Cover plate shall be provided inside the panels to shroud all the live parts. All live parts or terminals shall be shrouded with high non-conducting material. The front door shall have neoprene gaskets to make and DB totally vermin proof air tight. The inner door shall have projecting handle or operating knobs.

- 1.2 All unused outgoing MCBs shall be blanked with PVC plates. The incoming terminals should be fully shrouded to avoid accidental contact after opening of the bolted door. ALL phases shall be suitable shrouded with FRP/hylam plates. All panels shall be factory wired and assembled. All buzz bars shall have uniformity. All screws, buzz bars, bolts and nuts shall have uniform size uniform ratings.

- 1.3 The top cover shall be provided with identification sheet for DB number, ratings, circuit identification, load etc. Temporary sheet shall be fixed till the completion of the job. On completion a sheet be permanently pasted in the DB after approval from Owner/Architect. The identification sheet shall laminated to make it moisture proof before fixing it permanently.

- 1.4 For DB of triple pole and neutral, 4 pole Isolator/MCB shall be provided as incoming control and for single pole and neutral and double pole isolator/MCB shall be provided. All the MCBs provided in the DB shall have:

- a) 9 KA short circuit capacity ( 9 KA RMS symmetrical)
- b) It shall have dual crimping mechanism - thermal bimetal for overload and magnetic coil for short circuit
- c) MCB housing shall be of heat resistant material

- 1.5 The buzz bars shall be air insulated and made out of high conductivity high strength copper with adequate rating to handle both short circuit and continuous load circuit currents. The buzz bars shall be to grade 63401 of IS: 5002. Adequate neutral buzz bars with adequate entry holes and earth buzz bars shall be provided in each DB.

- 1.6 The MCB shall be of high resistance, mounded type and shall be designed and manufactured as per IS : 8828. The breakers shall have inverse time tripping characteristics against overload and instantaneous trip against short circuits. It shall be designed to operate at 45 degree C ambient

temperature. The incoming and outgoing knobs of the MCBs shall be accessible only after opening the front door of the DB. All MCBs shall be suitable for 415 V., 3-Ph-4--wire, 50-Hz. system. It shall have adequate size terminal screws to terminate cable lugs. The Dp, Tp & 4-pole MCB/ Isolators shall have a common handle. All DBs shall be provided with two numbers brass earthing stud terminals with 2 Nos. nuts and washers for each connection. The earth bolts shall be marked suitably.

1.7 All DB locks shall have independent keys and overall common key (master key) to open any locks in case of emergency.

1.8 Painting shall be carried out as per the latest revision of IS - 5. The shade of paint shall be as required by the Client. All sheet steel surfaces shall be chemically cleaned to remove all scales, rust and foreign materials, rinsed and dried before painting.

All panels shall be painted with anti-corrosive poly urethane rubber based paints before going in for final painting. The final finish shall be uniform.

1.9 Along with the offer the vendor shall submit the following:

- a) Detailed G.A. drawing showing the total construction details
- b) Mounting details of DBs
- c) Size of DBs, weight etc.
- d) Buzz bar details, interconnection details etc.

#### EARTHING:

1.0 it is proposed to earth the low tension, lighting installation etc., with suitable size of copper conductor for effective earthing. the earthing system shall be complete in all respects and any device not included in the specification but essential for proper operation of the equipment to meet the statutory requirement shall be deemed to be within the scope of the specification whether specifically mentioned in the technical specification or not.

1.1 The earthing installation shall conform to the latest Indian Standards and other statutory provisions. It shall generally conform to:

- a) Code of practice for earthing - IS : 3043
- b) Indian Electricity Rules - 1956
- c) Indian Electricity Act 1910
- d) Local FEIG requirement

1.2 The main earth bus shall be 25 x 3mm copper conductor. The conductors shall be soft and flexible. The main earth bus shall be clamped with spacer clamp. The spacer clamp shall be of adequate size. The spacer clamps shall

be fixed at the centre with one screws of cadmium plated, counter shunk. The screw shall have effective depth inside the wall/RCC, etc. of 37 mm for horizontal conductors and shall be screwed in such a way that the top surface shall be plane with the spacer. The top plate shall have two tapped holes of 6 mm.

- 1.3 The location of horizontal and down conductors shall be decided at site in consultation with the Owner/Architect. Any changes of methods, housing shall be subject to approval of the owner. All joints shall be brazed and shall not be bolted. Bolted joints shall have cadmium plated bolts and nuts with adequate number of spring and flat washers.
- 1.4 Excavation and refilling of earth required for laying underground earth bus and earth pit shall be the responsibility of the Contractor. Wherever it is required, mechanical protection shall be given.
- 1.5 Earth electrode shall be as per the diagram enclosed. All civil works, soil treating media, pouring water, ramming, brick work, cover slabs, etc., shall be the responsibility of the contractor. The civil work shall be carried out neatly to match with the quality of building general civil work.
- 1.6 The location of earth electrode shall be decided in consultation with the Owner/Architect, before excavation.
- 1.7 Each electrode shall be tested for earth resistance test by earth megger. The test results shall be within the allowable limit. If required number of electrodes shall be connected in parallel to bring down the values within allowable limits.
- 1.8 All equipment shall be earthed with two separate and distinct earth connection from main earth bus.
- 1.9 The earthing conductor size shall be as per the tender.
- 1.10 The earthing resistance of the total system shall not exceed 2 Ohms.
- 1.11 All earth bus shall be painted with distinct colour enamel paint.

DATE:  
CONTRACTOR(S)

SIGNATURE(S)

OF

SPECIFICATION FOR CUBICLE SWITCH BOARDS

## SYSTEM :

The CUBICLE Panels shall be suitable for operation of 3 phase 4 wire, 433 Volts, 50 Cycles, system with neutral earthed at transformer and paving short circuit fault level not less than 35 KA at 415 Volts. Rated normal voltage shall be 415 Volts.

## STANDARDS:

The design, manufacture and testing of the various equipment covered by this specification shall comply with the latest edition of the relevant Indian Standards and Indian Electricity Rules and Regulations.

## CONSTRUCTION FEATURES:

The switch board shall be made from CFCA sheet steel (1.626mm) thick and shall be folded and braced as necessary to provide a rigid support for all components. Joints of any kind in sheet shall be seam welded, all welding slag grounded off and welding pit wiped smooth with plumber metal. All panels and covers shall be properly fitted and square with the frames and holes in the panel correctly positioned. Fixing screws shall enter into holes tapped into an adequate thickness of metal or provided with shunk nuts. Self threading screws shall not be used in the construction of switch boards. The board shall be of totally enclosed design, completely dust tight and vermin proof. Gaskets between all adjacent and beneath all covers shall be used to render the joint effectively dust tight. Soft compressible gasket shall be used between all metal joints, doors and covers to prevent in deposit of dust.

All similar materials and removable parts of the switch board shall be interchangeable. The switch boards shall be fixed with the same family of switches for various ratings with a view to ensure uniformity of design, maintenance and replacements. A horizontal wire way with screwed cover shall be provided at the top to take inter-0connecting control wiring between different vertical sections. Separate and adequate compartments shall be provided for accommodating instruments, indicating lamps, control contractors and control fuses etc. These shall be accessible for testing and maintenance without any danger of accidental contract with live parts of the circuit breaker buzz bar connections.

## INSTRUMENT ACCOMMODATION:

Separate and adequate compartments shall be provided for accommodating instruments, indicating lamps, and control fuses etc. These shall be accidental contract with live parts of circuit breaker, buzz bar and connections. Buzz bar and rectangular cross section suitable for full rated current for phase buzz bars and or neutral buzz buzz bar shall be extendable on either side. The horizontal buzz bar shall runs the entire length of the panel.

The buzz bars shall be fully insulated with heat shrinkable PVC sleeves. The interconnections shall be sleeved with PVC insulation tapes and color coded. The buzz bars shall be supported on suitable insulation supports at shorts intervals to withstand the forces arising from short circuit on the system. Automatically operated safety shutters to screen the live parts cluster when the breaker is withdrawn from the cubical shall be provided.

Horizontal buzz bars shall run at the top or at the bottom of the panel in a separate chamber and the chamber shall be adequately ventilated.

**TERMINALS:**

The outgoing terminals of the breaker and neutral link shall be brought out to a terminal block suitably located at the rest side of the panel. Separate cable compartment shall be provided for incoming and outgoing cables.

**PAINTING:**

All steel work shall undergo a process of degreasing, pickling in acid, cold rinising, phosphating, passivating using sever tank process and then powder coated or sprayed with two coats of a high corrosion resistant primer each coat preferably of different colour.

The Primer shall be baked in an oven. The finishing treatment shall be by application of two coats synthetic enamel parts of approved paint thickness shall be 100 to 125 microns.

**FABRICATION:**

The panels shall be fabricated at such work shops where the following facilities are available.

- a) Sand blasting
- b) Pretreatment (Seven tank process)
- c) Spray booth for painting / Powder coating
- d) Heating over for all sizes of panels
- e) Heat shrinking of PVC sleeves covered over busbars, etc.

DATE:  
CONTRACTOR(S)

SIGNATURE(S) OF

<b>THE LIST OF APPROVED MATERIALS FOR INTERIOR FURNISHING</b>		
<b>S.No.</b>	<b>Description</b>	<b>Make</b>
1	Partical board	Greenlad/Positive chipboard india pvt ltd/Kboard partical board PVT ltd.
2	Aluminium Sections	Hindalco /Jindal/ India Aluminium Co
3	Powder Coatings	Berger / Nerocoat / Jenson & Nicholson
4	Gypsum board false ceiling	Saint Gobin / India Gypsum Pvt.Ltd.
5	Glass	Saint Gobin /Asahi /Modiguard
6	Screws	GKW/Nettle fold
7	Adhesieve	Fevicol SH
8	Locks	Godrej/Yale/ Doorset
9	Nigh Latch	Godrej

<b>THE LIST OF APPROVED MATERIALS FOR ELECTRICAL WORK</b>		
<b>S.No.</b>	<b>Description</b>	<b>Make</b>
	MCBs & RCCBs	Legrand/ABB/HPL
	Luminaires	Philips/Crompton/Luker/Bajaj
	Fans	Crompton/Bajaj/Almonard
	Wires	Finolex/RRKabel/Ancor
	Terminals	Elmex/Wago
	UG cables	Universal/Gloster/Polycab
	Modular Switches	ABB/MK/Legrand/Ellis
	CAT 6 UTP Cable	Finolex/MOLEX /CISCO
	Telephone Cable	Finolex/Polycab
	Telephone Terminal	Krone
	Data & Voice Outlets	Legrand/ MOLEX /CISCO
	Face Plates for outlets	ABB/MK/Legrand/Ellis
	PVC Conduit & Conduit accessories	

**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.



**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 Tenderer

Address \_\_\_\_\_

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