

**INDIAN BANK**

TENDER DOCUMENT FOR INTERIOR & FURNISHING, ELECTRICAL AND

AIR CONDITIONING WORKS AT

**INDIAN BANK BRANCH**

 **SECTOR-6 KARNAL.**

**S.No.**

**ISSUED TO:**

**DATE OF ISSUE :**

**LAST DATE OF SUBMISSION :**

**COST OF TENDER :- Rs. 1000/-**

**CLIENT: ARCHITECT:**

## INDIAN BANK Thapar and Associates

**ZONAL OFFICE H.NO:- 2017,**

**SCO 244-245 1st and 2nd FLOOR SECTOR 15/C**

 **SECTOR-12 URBAN ESTATE KARNAL CHANDIGARH.**

**TEL. NO. 0184-2266358,2266351 TEL. NO.- 9646080875 , 0172- 2911550**

**INDIAN BANK**

**Notice Inviting Tenders**

***Indian bank invites sealed tender from the emp contractors for I*nterior, Furnishing & Electrical & A.C. works at Indian Bank Branch at SECTOR-6, KARNAL.**

Details of tenders are as under: -

1. Name of work :-**Interior, Furnishing & Electrical**

### & A.C Works at Indian Bank Branch

**at SECTOR-6, KARNAL.**

1. Time allowed for completion **:- 30 Days**
2. Earnest money deposit :- **Rs.36,500/-**
3. Initial Security Deposit :- 2% of the accepted contract value
4. Total Security deposit : - 2% of the accepted contract value
5. Cost of tender documents **: - Rs.1000/-**
6. a) Date and time of issue

of tenders :- from **28.12.2021 TO 12.01.2022** between

**11** am to **5.30** pm

1. Last date and time of receipt :- **12.01.2022 at 2:30 pm**

of tenders

1. Opening of Tender :- **12.01.2022 at 3:00 Pm**
2. Name & Address of Architect :- **M/s THAPAR AND ASSOCIATES**

**H.NO:- 2017 Sector 15/C Chandigarh.**

 **TEL. NO.- 9646080875 , 0172- 2911550**

1. Address at which the tenders :- **Indian Bank- Zonal Office,**

 are to be submitted **SCO 244-245 1st and 2nd FLOOR**

**SECTOR-12 URBAN ESTATE KARNAL**

 **TEL. NO. 0184-2266358, 2266351**

1. Place of opening tenders. :- **Indian Bank- Zonal Office,**

 **SCO 244-245 1st and 2nd FLOOR**

**SECTOR-12 URBAN ESTATE KARNAL**

 **TEL. NO. 0184-2266358, 2266351**

1. Defects liability period. :- Twelve months.
2. Validity of offer :- 90 days
3. Liquidated damages. :- 2% per week up to maximum of

 10% of contract value.

1. GST :- Contractor must have GST registration number

In case the date of opening of tenders is declared as a holiday the tenders will be opened on the next working day at the same time. Indian Bank has the right to accept /reject any/ all tenders without assigning any reason.

…………………………………………………………………..……………………..…………….……..**For & behalf of Indian Bank**

**SECTION - 2 INVITATION TO TENDERERS**

### SECTION – 2

**INVITATION TO TENDERERS**

Sealed tenders on Item Rate basis, are invited in the prescribed form, by the AGM, INDIAN BANK For **INTERIOR, FURNISHING, ELECTRICAL & AIR CONDITIONING WORKS IN INDIAN BANK BRANCH AT SECTOR-6, KARNAL.**

|  |  |  |  |
| --- | --- | --- | --- |
| TENDER.NO | NAME OFWORK |  EARNEST MONEY | TIME OF COMPLETION |
| THP/IB/21 Interior, Furnishing | **Rs.36,500/-**In Form of |  **30 Days** |
| Electrical & AC works |  D.D drawn in favour of |  from the |
| of Indian Bank |  Indian Bank |  second day |
| SECTOR-6, KARNAL. |  |  of written order or from the date  of handing over  the site |

The work as detailed in this tender shall be executed and completed in all respect within a period of **30 Days** from The 2nd day of written order or from the date handing over of site to commence the work in accordance with the tender documents, Instructions to Tenderers, Technical specification, Bill of Quantities, conditions of contract, Schedules and drawings, to the satisfaction of Architect/ Employer.

**The Tenderers is required to deposit Rs. 36,500/-** as Earnest Money along with the tender in the form of crossed Demand Draft only payable at KARNAL in favour of Indian Bank. The Earnest Money will be refunded without any interest to the unsuccessful Tenderers after a decision is taken regarding award of contract.

1.4 Tenders, will be submitted in two sealed envelopes as under and super scribed with the name of work, and Tender No. THP/ I B/ 21 must be submitted to **The Zonal Office , SCO 244-245, 1st and 2nd FLOOR SECTOR-12, URBAN ESTATE KARNAL. TEL. NO. 0184-2266358,2266351** not later than **2.30 P.M** on **(12.01.2022)** Tenders will be opened on the same day at **3.00 Pm** in the presence of Tenderers or their authorized representatives.

### Tender documents can be obtained on working day from The Zonal office , SCO 244-245, 1st and 2nd FLOOR SECTOR-12, URBAN ESTATE KARNAL. TEL. NO. 0184-2266358,2266351

### Or

### can be downloaded from Indian bank website [www.indianbank.in](http://www.indianbank.in)

On payment of tender cost (non-refundable) of in form **Rs.1000/- Demand draft drawn in favour of Indian bank**. The relevant drawings are enclosed in the tender along with set of specifications.

* 1. Rates must be quoted for complete works at site inclusive of all costs, etc. All taxes and duties including GST shall be extra etc. as Applicable at Delhi. on works and materials required for use in the execution of this project shall be entirely borne and payable by the Contractor and the Employer will not entertain any claim what so ever in this respect. GST No.& E.S.I.C. No. to be submitted to Bank along with tender.
	2. The tender will be submitted in two separate envelopes.

**Envelope No.1** Containing the forwarding letter , tender fee and the Earnest Money deposit.

EnvelopeNo.2 Consisting of Tender Document along with a duplicate of priced Tender Document (duly marked Original & duplicate) No alteration & deviation will be shall be permitted in the bill of quantities and the specification enclosed with the tender documents Issued, and it should super scribed as:

### “Tender for Interior, Furnishing & Electrical & A.C Works at Indian Bank Branch at SECTOR 6 KARNAL”

**Envelope No.3** It shall of adequate size & shall contain envelope No.1 & 2 and shall be properly sealed .

**Envelope No.1** Containing the forwarding letter, Tender Fee , Earnest Money Deposit will be opened at **2.30 PM** on **(12.01.2022)** in the office of **The Zonal Office , SCO 244-245, 1st and 2nd FLOOR SECTOR-12, URBAN ESTATE KARNAL. TEL. NO. 0184-2266358, 2266351**

* 1. **Envelope No.2** containing the tender etc. will be opened at **3.00 Pm** on **(12.01.2022)** in the same office mentioned above and if the date mentioned is declared a holiday it will be opened be at the time and date which will be announced After opening envelope No.1 containing the forwarding letter and the Tender fee & Earnest Money Deposit, all the deviations & conditions if any will be examined and conditions / deviations if not acceptable, the second envelope containing the tender etc. may not be opened in which case the tender automatically stands rejected. There should be no forwarding letter or conditions in envelope No. 2. The Tender is likely to be rejected in case any letter is found in the second Envelope.
	2. The tenders shall remain valid for acceptance by the Employer, for a period of three months from the date of opening of tender. If any Tenderers withdraw his Tender before the said period, then the Bank shall be at liberty to forfeit Earnest Money paid along with the tender.
	3. Total security deposit shall comprise of:
1. Earnest Money Deposit.
2. Initial Security Deposit.
3. Retention Money.
4. **Earnest Money Deposit** This is an amount submitted by the contractor along with the tender.

### Security Deposit

The Contractor shall within 7 days of receiving the WORK ORDER submit a **security deposit of 2%** of the contract value in the form of a Demand Draft or Bank Guarantee in an approved format at which stage the Demand Draft or Bank Guarantee submitted in lieu of E.M.D shall be returned. On acceptance of the Demand Draft or Bank Guarantee by the Employer, the Earnest Money Deposit shall be refunded to the Contractor.

###  Initial Security Deposit

The successful tender or will have to submit a sum equivalent to 2% of contract value less Earnest money deposit by means of Demand Draft drawn in favour of Indian Bank with in a period of 5 days of acceptance of tender.

### c) Retention Money

**The retention amount at 5%** on the value of the bill paid will be held by the Indian Bank. **50% of the retention amount will be paid after completion of the project** and balance 50% will be released at the end of Defects liability period, subject to satisfactory rectification of defects noticed, if any. EMD & retention amount held in our Indian Bank’s books will not carry any interest.

1. The total security deposit is refunded to the contractor 14 (fourteen) days after the end of defects liability period provided he has satisfactorily carried out all the work and attended to all defects in accordance with the conditions of the contract, subject to the following:

Contractor should remove his material, equipment, labour force, temporary Sheds/ stores etc. from the site

Earnest money of the successful Tenderers will be liable to be forfeited in the Event of refusal or delay on his part in depositing initial security deposit & Signing the agreement within 5 days, of the issue of letter of award of the work.

Tender document duly filled and signed by the Tenderers shall be submitted as the tender of the work.

The INDIAN BANK does not bind itself to accept the lowest or any tender, or to assign any reason there of and also Reserves the right of accepting the whole or part of the tender and the tenderer shall in such an event is bound to perform the contract at the same rates quoted in the tender for the various items of the work.

Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing in any form shall be liable for rejection.

The tendering firms, in case the Tenderers is a partnership firm, shall submit the Tender signed by all the partners. in the event of absence of any partner, it must be signed on his behalf by a person holding power of attorney authorizing him to do so and such power of attorney shall be attached along with the tender.

The contractor **has to visit the site before filling the tender**, assess the Difficulties for getting the interior done in working office. The furnishing shall be done after detailed discussions with the engineer-in-charge.

 **Indian Bank- Zonal Office,**

 **SCO 244-245 1st and 2nd FLOOR**

 **SECTOR-12, URBAN ESTATE KARNAL**

 **TEL. NO. 0184-2266358, 2266351**

*APPENDIX SHOWING IMPORTANT SCHEDULES*

1. SIGNING THE AGREEMENT :- WITHIN 2 DAYS OF THE ISSUE OF LETTER OF

INTENT/ORDER.

1. DATE OF COMMENCEMENT :- FROM THE SECOND DAY OF AWARD OF WORK OF WORK OR WHEN THE SITE IS HANDED OVER

WHICHEVER IS EARLIER.

1. PERIOD OF COMPLETION :- **30 DAYS**
2. LIQUIDATED DAMAGES :- 2% OF CONTRACT AMOUNT PER WEEK ON DELAY

SUBJECT TO THE MAX. OF 10% OF THE ACCEPTED CONTRACTED SUM.

1. VALUE OF RUNNING / ON :- 75% OF AMOUNT WITHIN 7TH DAYS AFTER ACCOUNT BILL DATE OF RECEIPT OF ARCHITECT CERTIFICATE.

AND BALANCE WITHIN 21 DAYS

1. INITIAL SECURITY DEPOSIT :- 2% OF THE ACCEPTED VALUE OF THE

TENDER INCLUDING OF THE EARNEST MONEY.

1. TOTAL SECURITY DEPOSIT :- 2% of the accepted contract value
2. INCOME TAX DEDUCTION AND :- AT PREVAILING RATE FROM EACH BILL. GST
3. DEFECTS LIABILITY PERIOD :- 12 MONTHS AFTER COMPLETION OF WORK.
4. PERIOD OF FINAL :- 2 WEEK AFTER VIRTUAL COMPLETION OF WORK. MEASUREMENT OF WORK.

# SECTION- 3 INSTRUCTIONS TO TENDERERS

### SECTION-3

**INSTRUCTIONS TO TENDERERS**

The Tenderer shall examine carefully all the tender documents consisting of:

Invitation to Tenderers. [ Page no. 5 to 9 ]

Instructions to Tenderers. [ Page no. 10 to 13 ]

Letter & Form of Agreement. [ Page no. 14 to 18 ]

General and special conditions of contract. [ Page no. 19 to 33 ]

Condition for Electrical Works [ Page no. 34 to 47 ]

Material Specifications [ Page no. 48 to 61 ]

Bill of quantities. [ Page no. 62 to 79 ]

These shall form part of the Agreement:-

The tenderer is advised to visit and inspect site of at his own cost and responsibility and to secure all necessary information, which may be required for completing the tender. Ignorance of site conditions can't be an excuse for nonperformance of the contract. All costs, charges and expenses that may be incurred by the tenderer in connections with the preparation of his tender shall be borne by him and the Employer/Architect do not accept any liability whatsoever in this regard.

Time is the essence of the contract and the tenderers are required to complete the work in all respects within the stipulated time of completion and hand over the same, complete in all respects to the satisfaction of the Architects.

The tender should contain not only the rates but also the value of each item of work entered in the prescribed column of the B.O.Q. and all the items should be totaled up in order to show the aggregate value of the entire tender. The rates quoted by the tender should be expressed accurately both in words and figures so that there is no discrepancy. All corrections in the tender shall be duly attested by initials of the tenderers. Corrections, if not attested, may entail rejection of tender. The rates quoted by the tenderers in words in item rate tender following will be the basis in finalizing the tender viz

1. When there is a difference between the rates in figures & in words, the rates which correspond to the amounts worked out by the contractor ,shall be taken as correct.
2. 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 rates quoted by the contractors in words shall be taken as correct
3. 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 & not the amount
	1. It shall be clearly understood that the rates quoted in the tender are to be, for complete work at site, as per instructions to Tenderers, conditions of contract, specifications and drawing, addenda referred to therein and also for all such works as are necessary for the proper completion of the contract, although specification
	2. Thereof may not have been made in the specifications or drawings or tender documents. The rates shall be firm and shall not be subject to cost escalation on account of labour and material, and labour conditions or any other reason whatsoever.
	3. The tenderers shall use only the form issued with this tender to fill up the rates.
	4. Every page of the tender shall be signed on the left hand side bottom corner and any tender not so complied with is liable to be treated as defective and liable to be rejected.
	5. In the event of a tender being selected for acceptance, The Bank will inform the tenderer of the specification and other documents for the acceptance with the tender. The tender of the successful tenderer shall also deposit the required amount of the Initial security money within the prescribed time and if the tenderer fails to deposit the required amount of the initial security money within the prescribed period, the Bank may reject the tender.
	6. The successful tenderer will be notified about the acceptance of his tender by the Employer and he will have to deposit balance amount initial security and execute agreement within 5 (Five) days thereof, failing which his tender would be liable to rejection with forfeiture of the Earnest Money.
	7. The tenderer shall fill up the complete form of article of agreement before submission of tender. Failure to comply may entail rejection of the tender.
	8. The contractor will be governed by the Indian contract Act, Indian sale of good Act and all other relevant laws, All payments due to the contractor under the contract will be made in Indian Rupee currency.
	9. The rates quoted shall be for complete work at site and should be inclusive of incidentals necessary for carrying out the work. The rates shall be excluding of GST i.e. GST is extra if applicable at KARNAL for work contracts, The rates shall be firm and shall not be subject to cost escalation of labour and material and exchange variations, labour conditions and other conditions whatsoever. GST No. & ESIC No. to be submitted to Bank along with Tender Document.
	10. A schedule of approximate quantities for various items accompanies this tender. It shall be clearly understood that neither the Architect nor the Employer will accept any responsibility for the correctness or completeness of this schedule in respect of items and quantities and this schedule is liable to alterations by commission, deduction or additions at the discretion of the Employer in consultation with the Architect without violating the terms of the contract.
	11. Form of 'Tender for works' contained in section-3 shall be completed along with submission of tender. In case of failure to do so the tender is liable to rejection.
	12. The Employer does not bind itself to accept the lowest or any tender or to assign any reason thereof and also reserves the right of accepting the whole or part of the tender. The part acceptance will not violate the terms and conditions of the contract and will execute the work at the specified rates without any extra charges or compensation.
	13. Income tax deductions will be made as per the prevailing rates from the contractor's on account bills.
	14. No mobilization advance or secured advance is to be allowed to the contractor.
	15. Power and water connection if required is to be arranged by the contractor and all expenses pertaining to electricity and water used during the course of work shall be borne by the contractor. In case electricity and water of Bank are used by the contractor, Lump sum amount of Rs. 5,000/- shall be deducted from the bills of the contractor.
	16. Defects liability period is for 12 months.
	17. As per IBA guidelines freak rate analysis will be conducted against lower and higher rates observed in any tender and contractor will have to submit rates analysis for such items for which freak rates have been observed .Higher freak rates can be lowered by the Bank to bring them at par with Architect’s standard rates.
	18. The tenderer, must associate himself with agencies of the appropriate class

which are eligible to tender for: (i) Dismantling, flooring and other Civil work and (ii) furniture (iii) Electrical Works.

### Contractor shall fabricate all the furniture at site & shall not cover the furniture with laminate /veneer/fabric till the approval of Architect.

**Necessary certificate regarding the quality of material shall be obtained from the specified companies sample of materials used can be obtained by manufacturing companies from the semi finished items any loss to the contractor for replacement of such materials will be on their account only.**

### All samples approved shall be kept and displayed at site.

**Indian Bank- Zonal Office,**

 **SCO 244-245 1st and 2nd FLOOR**

**SECTOR-12, URBAN ESTATE KARNAL**

 **TEL. NO. 0184-2266358,2266351**

*SECTION- 4 FORWARDING LETTER & AGREEMENT*

### SECTION - 4

**FORM OF TENDER**

**To,**

**THE ZONAL OFFICE,**

**SCO 244-245 1st and 2nd FLOOR**

**SECTOR-12, URBAN ESTATE KARNAL**

**TEL. NO. 0184-2266358,2266351**

Dear Sirs,

SUB: Invitation of Tender for ‘Selection of Contractor for …………………………………………………………………………………………………...’

Having examined the plans, specifications, conditions and schedule of quantities prepared by you, and satisfying ourselves as to the location of the site and working conditions, I/We hereby offer to execute the above works at the respective rates which I/We have quoted for the items in the Schedule of Quantities.

I/We herewith deposit Rs………../- (Rupees ……………………………… only) (2% of the project value) by crossed demand draft/ Bank Guarantee on a Bank other than the clientele, dischargeable/payable at Chennai and drawn in favour of Indian Bank as Earnest Money Deposit for the due execution of the works at my/our tendered rates, together with any variations should the work be awarded to me/us.

In the event of this tender being accepted, I/We agree to enter into and execute the necessary contract required by you. I/We do hereby bind myself/ourselves to forfeit the aforesaid Earnest Money Deposit of Rs…………………………..…………..../- (Rupees …………………………………………………………………………………………………….……… only) in the event of our refusal or delay in signing the Contract Agreement. I/We further agree to complete the work within the stipulated time specified in this tender.

I/We agree to keep our tender open for 90 (Ninety) days from the date of opening of Envelope No. 1.

I/We enclose the completed tender documents duly signed under two separate sealed envelopes and the Earnest Money Deposit Rs.\_\_\_\_\_\_\_\_\_\_\_\_ (Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_only) by Bank Draft / Bank Guarantee No. ……………………….. dated ……………. Issued by …………………………………………………….

Thanking you,

Yours faithfully,

[To be signed by the Authorized Representative of

Tenderer who has the Power to do so]

Place: Witness Signature:

Date : Name:

Address:

Seal:

 **ARTICLES OF AGREEMENT**

THIS AGREEMENT is made on this ………………… day of ……………… 2021 between Indian Bank and having its  **Indian Bank- Zonal Office, SCO 244-245 1st and 2nd FLOOR ,SECTOR-12, URBAN ESTATE KARNAL.** (hereinafter referred to as the “Employer”) which expression shall include its successor, legal heirs and assignees of the one part. AND M/s. …………………………….. having its office at ………………………………………………………………………………………………………………………………………………...

(hereinafter referred to as the “Contractor”) which expression shall include its successor, legal heirs and assignees of the second part.

WHEREAS the Employer has caused drawings and tender documents for ‘Repair and renovation works (Civil, Carpentry, Plumbing, Electrical & Fire Fighting works) for **Interior, Furnishing, Electrical & A.C Works at Indian Bank Branch at SECTOR-6 KARNAL.**

AND whereas the Employer has called for tender vide ref. no. …………….……………..…… dated……………………....… .

AND whereas the contractor has submitted the tender ref. no. …………………………………. dated ………………………… to the Employer on ………………………… .

AND whereas the Contractor has agreed to execute the work as per drawings, specifications, conditions of contract and Work Order.

AND whereas the Employer has accepted the Contractor’s tender as aforesaid and whereas the tender submitted by the contractor has been accepted for such sum as may be ascertained to be payable in terms of the Bill of Quantities and which sum is estimated to be Rs. ……………….. (Rupees ……………………………………..………………..) hereinafter referred to as the said “Contract Agreement”.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:-

1) In consideration of the said Contract Sum to be paid at the times and in the manner set forth in the said Conditions the Contractor shall carry out and complete the Civil, Carpentry, Plumbing & Electrical Works in terms and conditions herein contained and according to the general conditions of the contract, notice inviting tender, special conditions of contract, general scope of work, technical specifications, schedule of rates and instructions to be given by and the supervision of and to the entire satisfaction of the Employer.

2) Contract Price, Taxes and Payment Terms:

Total contract price is Rs. ….……………..…………. which is inclusive of cost of materials, equipment, installation charges and tools and tackles required for execution of the job. Above price is inclusive of all taxes & duties including excise duty, sales tax, works contract tax, income tax, Octroi etc. in respect of this contract. No claim in this respect will be entertained. Sales tax on works contract & Income tax on payments will be deducted and deposited by Employer in accordance with the sales tax law of the state and the provisions of tax deductions at source under income tax act 1961.

However, interim payment will be made as per the site measurements on Item Rate basis.

3) Completion Period:

Time is the essence of the Contract. The work is to be completed in all respects within XX (…………….………….) months reckoned from XXth day from the date of issue of the Work Order or handing over of site whichever is later. If the Contractor fails to complete the job within the agreed time period the Contractor will have to bear liquidated damages as per the relevant clause mentioned in the Tender Documents.

4) Earnest Money:

The Contractor has deposited an amount of Rs. …………………………../- (Rupees …………………………….. only) as earnest money.

5) Inspection of Site:

The Contractor has inspected the site before submitting his tender and has satisfied himself as to the nature of the work to be executed on the site. Any difficulties which the Contractor may come across in the course of the work shall in no way relieve the contractor to claim or receive extra payment unless the Employer is of the opinion that such difficulties could not have been foreseen and the Employer consents in writing.

6) Supply of Material and Labour:

The Contractor shall arrange all labour, materials, equipments, tools, tackles and everything necessary for the completion of the work. The Contractor will assume all responsibility for the safety, protection and accounting of all material and equipment and the work during construction. All materials used by the Contractor shall be of the best quality conforming to the required specification mentioned in the tender document and will be subject to the approval of the Employer. All such materials not approved by the Employer shall be removed at once by the Contractor at his own expense. The Contractor shall also at his own expense arrange for carrying out any test of materials which the Employer may from time to time require or if so desired by the employer.

7) Defective Work / Materials:

If any part of the work done by the Contractor is found defective in workmanship or if bad or inferior materials have been used the Contractor shall at his own risk and cost demolish all such defective work and rebuild the same and / or replace the bad or inferior materials used within a time frame mentioned to the satisfaction of the Employer. The decision of the Employer in this regard shall be final and binding on the Contractor. In case of default of the contractor to remove the defective work and rebuild the same or replace bad or inferior materials as directed by the Employer, the Employer shall be entitled to employ anyone else to carry out the same at risk and cost of the Contractor and recover all expenses incurred in this regard from the contractor.

8) Inspection of Work:

During progress of the work the Employer shall be entitled at all times to have access to and inspect the work.

9) Supervision:

The Contractor shall provide one or more competent and technical qualified engineers duly and fully authorized to act on his behalf in all matters relating to the works to be carried out under or any other matter concerning this agreement and who shall at all times be present at the works while any work is in progress as per directions, explanations & instructions of Employer.

10) Compliance with Statutory Regulations & Work Rules:

The Contractor shall be responsible for complying with the applicable laws / bye laws / Regulations in force from time to time and shall have to bear all statuary liabilities to the workers / personnel engaged for the job. Nothing will be paid extra in this regard. If any amount is paid by the Employer with this regard the same amount shall be deducted from the Contractor’s dues. The Contractor shall have to arrange insurance cover for the workers / personnel engaged by him for the job.

11) Determination of Contract:

In the event of Contractor failing to keep / adhere to agreed schedule of work, or in the event of the Contractor failing to comply with the provisions of this contract by default and / or negligence and / or suspension of work or in the event of Contractor failing to complete the work within the stipulated period, the Employer may terminate this Agreement forthwith and employ, at the Contractor’s risk and cost, another contractor or sufficient number of workmen to complete the work.

12) Force Majeure:

This clause will be operative only if the work is delayed by

a) Acts of God

b) Earthquake or floods or similar natural calamities.

c) Serious loss or damage by fire or lightning.

In case any Force Majeure condition herein mentioned occurs and continues for a period exceeding 15 days the parties hereto undertake to sit together and devise ways for expeditious and proper performance of the obligations of the parties under this order.

13) Arbitration:

“ In the event of any dispute or difference relating to interpretation and application of provisions of the contract and all disputes/claims whatsoever which shall either during the continuance of the contract or afterwards either between the parties to the contract or the respective representatives touching the construction/application of any provision/clause mentioned in the contract or any account or liability between the parties to the contract or as to any act or deed or omission of any party to the contract, in any way relating to these presents, shall be first at the discretion of the Bank attempted to be resolved in good faith by mutual discussion within 30 days of the dispute or question being raised failing which the same shall be settled by arbitration in accordance with provisions of Indian arbitration and Conciliation act 1996.

The Parties concerned shall designate an arbitrator on mutual consent/consensus. In the event of no consensus being arrived, an Arbitral Tribunal shall be constituted comprising three Arbitrators, each party appointed one arbitrator and a third arbitrator to be appointed by the two arbitrators so appointed by the parties. The venue of the arbitration shall be exclusively at Chennai and any award passed by arbitrator or the arbitral Tribunal shall be final, conclusive and binding upon the parties and shall be deemed to have been made between parties themselves. The parties to the dispute shall share equally the cost of arbitration as intimated by the arbitrator”.

IN WITNESS whereof the said contracting parties have set their hands and seals on the day and year first hereinabove witness.

Witness Address Employer

Witness Address Contractor

**BANK GUARANTEE IN LIEU OF EARNEST MONEY DEPOSIT**

**Address of Institution**

Whereas **(Name of Institution)**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (hereinafter called “the Employer”) have issued bid documents for Civil, Carpentry, Plumbing & Electrical Works for their Proposed **Name of work**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ having their registered office at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (hereinafter called the Bidder).

And whereas under the terms and conditions of the said bid documents, the Bidder is required and has undertaken to furnish a Bank Guarantee of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_only) as Earnest Money Deposit as contained in the said tender document.

We \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, having our registered office at \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and branch office at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (hereinafter called “the Bank”) hereby unconditionally and irrevocably undertake to the Employer immediately upon receipt of the first written demand such amount or amounts as may be demanded by the Employer from us under this Guarantee not exceeding a sum of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_only) in aggregate without demur or reference to the Bidder and agree that the Employer’s demand shall be final and binding on the Bank under all circumstances.

We hereby affirm that we are the Guarantor and responsible to you on behalf of the Bidder up to an aggregate sum of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_only) such sum or sums being payable in Indian currency and we undertake to pay on your first written demand and without any demur and / or condition, and sum or sums within the aggregate limit of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_only).

We agree that no change or addition to or modification of the terms of the tender or of the works to be performed there under or of any of the tender documents which may be made between you and the bidder shall in any way release the Bank from any liability under this Guarantee, and we hereby waive notice of any such change, addition or modification.

We further agree that the Employer shall have the right to invoke a claim up to the last date of the validity of this Bank Guarantee and that the Employer shall remain the sole judge of the validity and amount of the claim and the Bank agrees not to contest any claim.

We further agree that any change in the Bidder’s constitution or their liquidation or dissolution shall not discharge the Bank’s liability under this Guarantee.

It is agreed that the Employer’s claim shall remain valid even if the employer has not issued a prior notice or has not proceeded against a Contractor before making such claim.

This Guarantee is confirmed and irrevocable and shall remain valid upto and including \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and shall remain valid upto such extended period which may be mutually agreed to.

Unless a demand or claim under this Guarantee is made on the Bank in writing on or before \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the Bank shall be discharged from all liability under this Guarantee.

SECTION- 5

SPECIAL CONDITION OF THE CONTRACT

### : SECTION 5:

**: SPECIAL CONDITION OF THE CONTRACT:**

INSURANCE FOR WORK

The contractor at the time of signing the contract or before commencing the Execution of work, without limit in his obligation and responsibilities shall insure the work at his own cost and keep them insured until the virtual completion of the work and shall be insured against all acts of God including Fire, Theft, Riots, War ,Floods, Act with a Nationalized Insurance Agency in the joint name of the Employer and the contractor (The name of the former being placed first in the policy) for the full amount of the contract. Such policy shall cover the property of the employer and fees for assessing the claim and in connection with his services generally and it shall not cover any property of the contractor or of any sub contractor or employee.

The contractor shall deposit the policy and receipt for the premium with the employer with in seven

(7) days, from the date of signing of the contract and commencement of the execution of the work or unless otherwise instructed by the employer in default of the contractor insuring as provided above, the employer on his behalf may so insurance and may deduct the premium paid from any moneys or which may become due to the contractor, contractor shall as soon any claim under the policy is settled or the work reinstate by the Insurance office should elect to do so, proceed with all due diligence with the completion of the works in the same manner as through misfortunate

/accident has not occurred and in all respect under the same condition of the contracts. The contractor in case of rebelling or reinstatement after accident shall be entitled to such extension of time for completion as the Employer deems fit.

### 1.1.1) INSURANCE IN RESPECT OF DAMAGE TO PERSONS AND PROPERTY:

The contractor shall be responsible for all injuries to Orson animals or things and for all structural and decorative damage to property, which may arise from the operation or neglect of himself or of any approved sub-contractor or Employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shell be held to include any damage to roads streets, footpath bridges and work forming the subject of the contract by frost or other of the 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 under in respect of any compensation of damages consequent upon

such claim.

1. The contractor shall reinstate all damages of every sort mentioned in this clause, so as to deliver up the whole of the contract work complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to property of third parties.
2. The contractor shall indemnify the Employer against all claims which may be made against

the Employer by any member of the public or other third party in respect of works in consequence thereof and shell at his own expense arrange to effect and maintain, until the virtual completion of the contract, with any Nationalize Insurance agency in the joint name 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 this contract. The contractor shell similarly indemnify the Employer against all claims which may be made upon the Employer whether under the workmen’s compensation Act or any other status in force during the currency of this contract or at common law in respect of any employee of the contractor or any sub-contractor and shall at his own expense effect and maintain with an approved office a policy of insurance in the joint name 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. The contractor shell 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 defect carrying out of this contract. He shell also indemnify the Employer in respect of anti 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.

1. The Employer shall be at liberty and is empowered to deduct the amount of any damage, compensation cost charges and expenses arising or occurring from or in respect of any such claim or damage from any sum or sums due to or become due to the contractor including the security deposit.
2. If the contractor fails to comply with the terms of these conditions, the Employer may insure the work and may deduct the amount of the premiums paid from any moneys that may be or become payable to the contractor or may at the opinion, not release running payable to the contractor shell have completed with the terms of this condition.
3. Such insurance, weather effected by the Employer or they will not limit or bar the liability and obligation of the contractor to deliver the work to the Employer completed in all respects according to the contract in case of loss or damage due to any of the aforesaid causes, the moneys payable under any such insurance shell be received and retained by the Employer until the work are finally completed and such moneys shell then be credited to the contractor in final settlement of accounts.

### DIVISION OF WORK PHASE:

The Employer/ Architect reserve the right to divide the work in to two or more phases to facilitate renovation without disturbing the working of the bank. The contractor shell be responsible for erecting temporary high partition to separate the working part & the office from the area under renovation. Nothing extra shall be paid to the contractor for the same.

### TESTING OF WORK AND MATERIALS:

The contractor shall be required by the Architect/ Engineer-in-charge to arrange testing of material and portions of the work at his own cost in order to prove their soundness and efficiency. These tests should be carried out at the approved test laboratory required by the Architect/ Engineer-in- charge to arrange of materials and portions of the work at Institutions as directed .If after such test the work or portion of the work are found to be defective or inbound, the contractor shell if ordered by the Architect/ Engineer-in-charge pull down and re-erect the same at his own cost.

# SECTION- 6 CONDITIONS OF THE CONTRACT

: SECTION 6:

### CONDITIONS OF CONTRACT

* 1. DEFINITIONS OF CONTRACT

In this contract (as hereinafter defined) the following works and expression shall have the meaning thereby assigned to them unless the contract described a Different meaning .

1. **‘EMPLOYER’ means the INDIAN BANK KARNAL** (client ) having its**, Indian Bank- Zonal Office, SCO 244-245 1st and 2nd FLOOR ,SECTOR-12, URBAN ESTATE KARNAL. TEL. NO. 0184-2266358,2266351** and includes clients representative to deal with any matters on his behalf.
2. ‘ENGINEER-IN- CHARGE’ or ‘Project Engineer’ means the person appointed by the Bank as their representative to give instructions to the contractors.
3. ‘CONTRACTOR’ means the individual, firm or company whether incorporated or not, with whom the contract is entered into and includes the heirs, executors administrator or successors permitted assignors or legal representative, as the case may be, of such individual, firm or company, and further includes the term successful tenderer.
4. The expression contract means the documents forming the tender and acceptance thereof includes the invitation to tender, instruction to tenderers, formal agreement executed between the employer and the contractor, general conditions of contract together with documents referred to therein, Technical specifications, drawing, and priced schedules of quantities. All these documents, taken together shall be deemed to form one contract and shall be complementary to one another.
5. Tender means the offer made by any individual, firm/firms or company companies for execution of the works.
6. ‘Tender means the individual , firm/ firms or company/ companies submitting a tender.
7. Contractor price means the cost worked out on the basis of quantities prescribed in the schedule of quantities and the of rates named in the acceptance of tender subject to such additions there to or deductions therefore as may be made under the provisions hereinafter contained.
8. Acceptance of tender’ means the letter or memorandum from the employer communication to

the tendered the acceptance of this tender and include the advance acceptance of his tender.

1. The expression ‘works’ or ‘work’ where in these conditions shall unless here by mentioned either in the subject or context represents to such construction, to be constructed, taken to mean the works by or by virtue of the contract contracted to be executed, whether temporary or permanent, and whether original, altered substituted or additional

.

1. ‘Drawing’ means the drawings referred to in the tender documents including any modifications of such drawings approved in writing by the Architect or his representative and furnished by the contractor and approved by the Architect or his representative and furnished by the contractor.
2. ‘Temporary work’ means all temporary works of every kind required in or about then execution completion or maintenance of the works.
3. ‘Urgent work’ shall mean any urgent measures which in the opinion of the Resident Engineer become necessary during the progress of the work to avoid any risk of accident or failures or which become necessary for execution urgently.
4. Constructional plant means all plants machinery, appliances of every natural required in or about the execution of the works but does not include materials or other things intended to form or forming part of the accepted tender.
5. ‘Site’ means the actual place or places as described in the tender at which the construction of works is to be carried out by the contractor together or with so much of the area surrounding the said places as the contractor shall with the consent of the Resident Engineer, actually use in connection with the works otherwise than merely for the purpose of access to the said place or places.
6. ‘Normal working hours’ mean eight hours per day and the specific timing would vary depending upon the seasons.
7. ‘A Day’ shall mean a calendar day beginning and ending at 0.00 hours to 24 hours from midnight to mid - night irrespective of number of hours worked in that day.
8. ‘A week’ shall mean 7 (seven ) days without regard to the number of hours worked in any day in that week.
9. ‘A month’ shall mean a calendar month without regard to the number of days in that month.
10. Unit’ means metric units.
11. Terms & expression not herein defined shall have the meaning assigned to them in the Indian General Clauses Act 1897 or the Indian contract Act or the Indian Sales of goods Act or any other applicable India Law as the case may be.
12. ‘Approved and Approval’ respectively mean approved or approval in writing including subsequent written confirmation of previous verbal approval.
13. ‘Test’ means such tests as are prescribed by the specification herein or by the Architect./Banks Engineer or his representative, whether performed by the contractor.
14. Act of Insolvency shall mean any act of insolvency defined by the presidency Towns Insolvency Act or the provincial Insolvency Act amending such original.
15. ‘Specification’ means the standard specifications for works and materials of the employer and specifically brought out in the notice inviting the tender, as amplified added to or superseded by special specification and embodied in the contract. In absence of any specifications for any item of the work, the relevant specifications in CPWD and IS code shall be followed and work shall be executed accordingly.
16. ‘Notice in writing’ or written notice shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to t he last known private or business address or registered office of the address and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
17. ‘Period of Maintenance’ shall means the specified period of maintenance from the date of completion of the works, as certified by the Engineer.
18. ‘Hindrance Register’ shall be maintained at the site of work showing the item affected, the date on which the delay occurred and the date on which the delay was cleared and reason for delay. These entries shall be done by the authorized representative of the Bank/contractor
19. ’Virtual completion’ virtual completion shall mean that the work are complete and ready for occupation, Including all Installations as required in the contract in complete working order to the full satisfaction of the Banks.

### EXTENT OF CONTRACT

* + 1. EXTENT OF CONTRACT:

The contractor shall supply at his own cost all materials instruments, ladders, Cordage, tackle, scaffolding, and temporary works required for the prop execution of works whether original, altered or substituted and whether included in the specifications or other document forming part of the contract or referred to in these conditions he is entitled to be satisfied, or not and which may be, necessary for the purpose of satisfying of, which he is entitled to require together with carriage, therefore to and from the works. The contractor shall also supply survey instruments and other materials necessary for the purpose of setting out works, and counting weighing and assisting to the measurement or examination at any time and from time to time of the work material, failing his so doing the same may be provided by the Engineer -in charge at the expenses may be deducted from any money due to the contractor, under the contract from his security deposit or the proceeds of sale thereof, The contractor shall also provide a sufficient portion of fencing the lights required to protect the public from accident, and shall be bound to bear the expenses of neglect of the above precaution, and to pay any damages and costs which may be awarded in any such suit, action or proceeding to any such person or which may with the constant of the contractor be paid to compromise and claim by any such claim/claims and the contractor shall indemnify the employer against any claim for any person on this account.

### SUFFICIENCY OF TENDER

The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the work and of his price for the work and of his prices stated in the schedule, which shall except in so far as it otherwise provided in the contract, cover all his obligation under the contract and all matters and things necessary for the proper completion and maintenance of the work.

### ASSIGMENT OF LETTING OF CONTRACT

The contractor shall not assigns the contract any part thereof or any benefit or interest therein or there under or any claim arising out of the contract to any other party without the prior written consent of the employer.

### POWER TO MAKE ALTERATION

The employer shall have power to make any alterations or addition to the stipulated specifications, drawing, design, and instruction that may appeal to him to be necessary or, advisable during the progress of the work and the contractor shall have no claim for compensation on account of such alterations or additions, the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Bank and such alterations shall not invalidate the contract, and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work & at the same rates as are specify in the tender for the main work.

### ENGAGMENT OF LABOUR:

The contractor shall employ labour in sufficient numbers either directly or through sub-contractors, where such subletting to maintain the required rate of progress and quality to ensure workmanship of the degree specified in the contract and to the satisfaction of the Architect. The contractor shall not employ in connection the works any person who has not completed his fifteenth year of age. The contractor shall comply with the provisions of the payment of wages Act, 1936, minimum wages Act, 1948, workmen’s compensation Act, 1923, Industrial Dispute Act1947, Maternity Benefit Act,1961 and mines Act, 1952 the employer state Insurance Act, 1948 safety code and Labour welfare Act

,employer’s Liability Act, 1938, contract labour (regulation and abolishing)Act or rules, or any

modifications thereof under from time to time. The contractor shall indemnify the employer against any payment to be made under and for observance of the regulations aforesaid without prejudice to his right to claim indemnify from his sub-contractors. The contractor shall provide and maintain at his own expenses all lights, guards, fencing and watching when and where necessary or required by the resident engineer for the protection of the works or for the safety and convenience those employed on works of the public.

### DISRUPTION OF PROGRESS:

The contractor shall give written notice to the Architect whenever Planning or progress of the works is likely to be delayed or disrupted unless any further drawings or order, Including a direction, instruction or approval, is issued by the Architect, within a reasonable time. The notice shall include details of the drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if It is late. If by reason of any failure or inability of the Architects to issue within a time reasonable in all circumstances any drawing or order request by the contractor, the work suffers delay then the Architect shall take such delay into account in determining any extension of time to Which the contractor is entitled under Provision of contract here of, how ever, no other compensation will be admissible on this account.

### RECTIFICATION OF DEFECTS:

If it shall appear to the Architect or his representative in charge of the works that any work has been executed with unsound, imperfect or un-skilful workmanship or material of any inferior description, the contractor shall no deemed in writing from the Bank specifying the work materials or articled complained of shall rectify or remove and reconstruct work so specified in part, as the case may require.

### SAMPLE:

Samples of all materials to be used in works, as per the schedule of quantities, shall be Submitted for approval contract. No material of which samples have to be submitted shall be used in the work unless they have been approved in writing by the Bank /Employer.

### COST OF SAMPLES:

The cost of preparing samples and workmanship will be borne the contractor except for such exclusions as are specifically mentioned in the specifications laid down in contract.

### FREE ACCESS TO WORK SITE:

The contractor shall provide all necessary and reasonable facilities and free access to the works and his records at site of work to the, Resident Engineer and their representatives. He shall provide facilities and space to the satisfaction of the Architect or his representative for inspection of any part of work.

### INSPECTION OF WORK:

All work under or in course of execution or executed in pursuance of the contract shall at all times be open to inspection and supervision of his representative and the contractor shall at all times during the usual working hours, and at all other times which reasonable notice of the intention of his representatives to visit works shall have been given to the contractor, either himself be present to receive orders and Instructions, or have a responsible agent duly accredited in writing present for that purpose, orders to the contractor’s agent shall be considered to have the same force as if they had been given to the contractor himself.

### PREPARATION OF CONSTRUCTION PROGRAMME SCHEDULE:

As and when sufficient planning information is available, the contractor in consultation with the Architects shall prepare a programme schedule of the activities Contractor should prepare Bar-charts of the project activities in the light of the tendered quantities and their rates respectively. Under no circumstances shall this schedule be prepared later than one week of finalisation of contract. Throughout the work, all programmes, schedule and charts shall be revised wherever any significant

changes occurs. The contractor shall also submit monthly progress chart to the Architect.

### SITE ORDER BOOK:

The contractor shall maintain a site order book at the site of the works wherein the instruction of the Bank’s Engineer shall be recorded. The site order book shall be the property of the employer and the instructions recorded therein shall be deemed to have the same force and effect as if they had been given to the contractor himself. The contractor or his representative on site must sign the book in taken of his having persuaded the orders given therein.

### HINDRANCE REGISTER:

A Hindrance Register shall be maintained at the site of work where in the contractor shall notify the items affected and the execution of work, the date on which the delay was cleared. These entries shall be initiated by the Bank Engineer as well.

### EXTENSION OF TIME FOR COMPLETION:

If the contractor shall desire an extension of the time for completion of the work on his having been unavoidable hindered in its execution or any other ground, he shall apply in writing to the Architects within 3 days of the date of starting of the hindrance on account of which he desires such extension as aforesaid.

### LIQUIDATED DAMAGES FOR DELAY:

The time and date stipulated in the contract for the completion of the work or any Part or stage thereof shall be deemed to the essence of the contract. The work shall throughout the stipulated period of the contract, be carried out with all Intelligence. If The contractor fails to complete the work within the time prescribed or within the Extended time under the contract, he shall pay to the employer on demand amount without prejudice to other rights and remedied the employer may have against the Contractor, a sum equivalent to ½(half)% of contract value as liquidated damages for such fault, and not as a penalty for every week or part thereof which the works remain unfinished after the stipulated date of completion provided that the total liquidated damages payable shall not exceed 5% of the accepted contract price. The employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any money due or which become due to the Contractor. The recovery or deduction of such damages shall not relieve the contractor from any obligations and liabilities under the contract.

### FORCE MAJEURE

1. Neither contractor nor I B shall be considered in default in performance of their obligations if such performance is prevented or delayed by events such as but not to war, hostilities revolutions riots, civil commotion, strikes lockout, conflagrations, epidemics accident, fire, storms, floods, droughts, earthquake, or ordinance, or any act of god or for any other cause beyond the reasonable control of the partly affected or prevented or delayed. However a notice is required to be given within 30-days from the happening of the event with complete details, to the other partly to the contract, If it not possible to serve a notice, with in the shortest Possible period without delay.
2. As soon as the cause of force majeure has been removed the party whose ability to perform its obligations has been affected, shall notify the other of such

cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.

1. From the date of occurrence of a case of force-majeure, obligation of the party affected shall be suspended during the continuance of any inability so caused with the cause itself and inability resulting there from having been removed, the agreed time of completion of the respective obligation under this agreement shall stand extended by a period equal to the period of delay occasioned by such events.
2. Should one or both parties be prevented from fulfilling the contractual obligations by a state of force majeure lasting to a period of 6 months or more the two parties shall each other to decide

regarding the future execution of this agreement.

### DEFECTS LIABILITY PERIOD:

The contractor shall be responsible to make good and remedy at his own expenses within such period as may be stipulated by the employer any defect which may develop or may be noticed before the expiry of 13 months from the certified date of completion and intimation of which has been sent to the contractor within seven days if the expiry of the said period .If the contractor or his work people, or servants shall break, before, injured or destroy any part of a building road, road curbs, in enclosure water pipes, cables, drain electric or telephone posts or wires, trees, or grass and cultivated ground contiguous to the premises on which the work or any part of it is being executed or if any damage shall happen to the work.

### SECURITY DEPOSIT:

* 1. **(RETENTION MONEY)**

After the initial security deposit has been made of the notice inviting tender the employer will at the time of making any payment to the contractor for work done or supply made under the contract, deduct 5% of gross value of each interim bill subject to a maximum retention money 5% of the contract value. The maximum amount of retention money will be the balance amount of total security deposit of 5%. All compensation or order sums of money payable by the contractor may be deducted from, or paid by, the sale of a sufficient part of his security deposit, or from any sums which become due to the contractor by the employer on any account whatsoever, and in event of his security deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within ten days thereafter make good in demand draft endorsed in favour of the employer as aforesaid any sum or sums which may have been deducted from or raised by sale of his security deposit or any part thereof.

### REFUND OF INITTIAL SECURITY DEPOSIT & RETENTION MONEY:

a) Initial Security Deposit

To be released on the recommendation of the Architect after the issue of certificate of virtual completion by him.

### FORFEITURE OF SECURITY DEPOSIT:

The above said security deposit shall be liable to be forfeited, wholly or in part at the sole discretion of the employer if the contractor fails to carry out the work or perform or observe any of the conditions of the contract.

### INTEREST ON THE SECURITY DEPOSIT:

No interest would be payable by the Employer to the contractor on the security held in deposit.

### RESPONSIBILITIES STRUCTURAL FOR THE ADEQUACY:

The contractor shall comply with the provisions of the contract and with due cares and diligence, execute and maintain the work and provide all labour, including supervisions of all works, structural plans and other things whether of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The contractor shall take full responsibilities for the adequacy, suitability and safety at site of all works and methods of the constructions provided.

### MEASUREMENT AND PAYMENTS

* 1. A bill supported with measurements details shall be submitted by the contractor fortnightly to the Architect for all works executed in the previous period and the Architect or his representative shall verify the requisite measurement for the purpose of having the same verified for the claim as far as admissible, if possible before the expiry of 15 days from the presentation of the bill. All measurements to be taken in duplicate and all bills shall be submitted in triplicate along with contractor’s copy of each. All such intermediate payments to the contractor shall be regarded as payments by way of advance against the final payment only and not as payments for work actually

done and completed and shall not preclude the requiring of bad, unsound and imperfect or un-skilful work to be removed and taken away and reconstructed or re-erected or be considered as an admission of due performance of the contract or any part thereof in any respect, or the actual of any claim not shall it conclude, determine of affect in any way the powers of the Architect under these conditions or any one of them as per the final settlement or adjustment of the account or otherwise, or in any other way vary from the contract.

### FINAL BILL:

Final bill supported with consolidated measurement of the final work executed shall be submitted by the contractor within 1 month of completion of work. When the final bill has been verified and corrected, the Architect will give seven days notice to the contractor to countersign the bill in token of acceptance, the contractor shall countersign the bill within the above seven days or intimate in writing his retention to dispute. If the contractor fails to take approximate action as above within the period prescribed, the bill finalised by the Architect or his representative shall be final and binding on the contractor and the contractor shall have no right to dispute the same.

### CLAIM FOR INTEREST

No claim for interest will be entertained by the Employer with respect to any moneys or balance which may be in its hands owing to a dispute between itself and the contractor or with respect of any delay on the part of the Employer in making or final payments or otherwise.

### RATES FOR EXTRA ADDITIONAL, ALTERED OR SUBSTITUTED WORK:

The rates for additional, altered or substituted work shall be worked out in accordance with the following provision in their respective order

1. If the rates for similar additional, altered or substituted work are directly available in the contract for the work, the contractor for the work, the contractor is bound to carry for the work at the same rates as are available in the contract for the work.
2. If the rates for additional, altered or substituted work are not directly available in the contract for the work the rates will be derived from the rates for a similar class of work as are specified in the contract for the work.
3. If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clause (I) to (ii) above, then the contractor shall within 3 days of the date of receipt of carry out the work, inform the Architect of the rate or rates claimed. Rates finalise and approved by the Architect on the basis of these details will be final and binding. However the architect by notice in writing will be liberty to cancel his order to execute such work and arrange to carry it out in such a manner as he may deem advisable. But under no circumstances shall the contractor suspended the work once ordered in writing on the plea of non-settlement rates.

### REIMBURSEMENT OF VARIATIONS IN PRICE:

Prices and rates quoted by the bidders shall be considered as firm for the complete work and entire duration of the contract. No claim for extra payment due to any rise in rates of raw material and labour or due to whatsoever reasons, shall be considered.

###  GUARNTEES:

* + 1. QUALITY OF WORK:

The contractor shall guarantee that the material and workmanship are the best of their respective kind for the service intended and that all items of work will be free from all inherent defects in workmanship and materials. He shall also guarantee that the works will not fail in any respect due to quality of materials, workmanship and methods of construction. The specification assume a proper degree of skill on part of the contractor and workmen employed. The contractor shall consult the Architect or his representative, whenever in his judgment variation in the methods of construction or in the quality of materials would be beneficial or necessary to fulfill the guarantee called for. Such

variations may be made by the contractor only when authorised by the Bank.

### REJECTION

If during the ‘period of Guarantee’ as defined under clause 5.8.1 hereof, any work or material shall fall in any respect to meet the above guarantee, the contractor which will meet the above guarantee, immediately.

### COST OF EXECUTION OF WORK OR REPAIR ETC:

All work of repair shall be carried out by contractor at his own expense if the necessity shall in the opinion of the Architect be due to the us or of materials or workmanship not in accordance with the contract or on account of neglect or failure on the part of the contractor to comply with any obligations expressed or implied on the contractor’s part under the contract.

### REMEDY ON CONTRACTOR’S FAILURE TO CARRY OUT THE WORK REQUIRED:

If the contractor shall all to do any such work as aforesaid required by the Architect the Employer shall be entitled to carry out such work which the contractor should have carried out, at the contractor’s own cost. The Employer shall be entitled to recover from the contractor the cost thereof or may deduct the same from any money due or that may become due to the contractor.

### CERTIFICATE OF COMPLETION WORKS:

On completion of the work, the contractor shall be furnished with a certificate , but no such certificate be given not shall the work be considered to complete until the contract shall have removed from the area of the premises ( to be distinctly marked by the Bank in the site plan which the work shall be executed) all scaffolding ,surplus materials and rubbish and clean the dirt from all wood work, door windows, walls, floors, or other parts of any building, in or upon which the work is to be executed, or of which he may have had in possession for the purpose of the execution hereof. If the contractor shall fail to comply with the requirements of the clause as to the removal of scaffolding, surplus, materials and rubbish and cleaning off dirt on or before the date fixed for the completion of the work, the Bank may at the expenses of the contractor remove such scaffoldings, surplus materials, and rubbish and dispose of the same as he thinks fit, and the contractor shall forthwith pay the amount of all expenses so incurred , and shall have no claim in respect of any such scaffolding or surplus materials aforesaid, except for any sum actually by the sale thereof.

### PERIOD OF GUARANTEE FOR COMPLETE WORK

The period of guarantee for the work shall be one year starting from the date of issue of the completion Certificate.

### CONTRACT VALID DURING GUARNTEE PERIOD:

This contract shall remain valid and in force until the expiry of guarantee period.

### RESCINDING / TERMINATE CONTRACT

* 1. In any case in which under any clause or clauses of this contract has rendered himself liable to pay compensation amounting to the whole of his security deposit in hands of Employer ( whether paid in one sum or deduced by instalments) the Architect on behalf of the Employer shall have power to adopt any of the following course, as deemed best suited to the interests of Employer.
1. To rescind the contract (of which rescission notice in writing to the contractor under hand of the Architect shall be conclusive evidence) and in which case the security deposit of the contractor shall stand forfeit and be absolutely at the disposal of the Employer.
2. To employ a contractor paid by the Employer and to supply materials to carry out the work, or any part of the work, debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certificate of Architect shall be final and conclusive against the contractor) and crediting him with value of the work done, in all respect in the same manner and at the same rates as if it had been carried out by the contractor under the terms of the contractor. The certificate of the Architect as to the value of the work done shall be final and

conclusive against the contractor.

1. To measure up to the work of the contractor, and to take such part of the work of the contractor as shall be not executed out of his hands, and to give it to another contractor to complete in which case any expense which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him ( of the amount of which excess certificate in writing Architect shall be final and conclusive ) shall be borne and paid by the original contractor and may be deducted from any money due to him by Employer under the contractor or otherwise, or from his security deposit or the proceeds of sale thereof, or a sufficient part thereof.
2. In the event of any of the above course being adopted by the Architect, the contractor will have no claim to compensation to any loss sustained by him by reason of his having purchased any materials, o entered into any engagement or made any advance on account of the execution of the work or performance of the contract and in case of the provision aforesaid the contractor shall not be entitled to be paid for any work actually performed under this contract unless and until the Architect shall have certified in writing the performance of such work and the value payable in respect and he shall only be entitled to be paid the value so certified.

### TERMINATION OF CONTRACT:

If at any time after the commencement of the work the Employer for any reason whatsoever not require the whole or part thereof as specified in the tender to be carried out, Architect shall give notice in writing of the contractor who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage, which would have derived from the execution of the work in full amount of the work got having been carried out, either shall he have any claim or compensation by reason of any alterations having been made in the original specification or the designs and instruction which shall involve any curtailment of the work originally contemplated.

### JURISDICTION

The contract and its operation shall be governed by the laws of India for the time being in force, irrespective of the place of delivery of materials the place of execution of work or place of payment under this contract shall be deemed to have been entered into the KARNAL.

### BYE LAWS OF LOCAL AUTHORITIES:

The contractor shall confirm to the provision of any government Acts which relate to works & the regulations on bye-laws of any local authorities. The contractor shall give all such notices required by the said Act or laws etc. and pay all fees payable to such authorities and allow for these contingences in his tender rates including fees for encroachment, stacking charges, cost of restorations, etc. and all other fees payable to the local authorities. The contractor shall keep the Employer indemnified against all penalties and all liabilities for every kind of breach of any such. Act, rules, Regulations or Bye-laws Contractor shall comply with all laws and Statutory regulations dealing with the employment of labour as:

i) The payment of wages Act,1936 (amended) ii)The minimum wages Act,1938 (arnended)

1. The workmen compensation Act,1923 (amended)
2. The contractor labour (Regulation & Abolishing Act 1970 and central rules 1971(amended)
3. Apprentice act 1961 (amended)
4. Industrial employment (standing order ) Act (amended)
5. Material Benefit Act, 1961
6. The Employees provident fund and miscellaneous provision act 1952 and (amended)
7. Personnel insurance (compensation insurance) act 1963 and any other modification. Safety codes, Labour welfare Acts or rules or any modification thereof any other laws and regulations framed by the competent Legislative from time to time.

### ACCIDENT

The contractor shall immediately on occurance of any accident at or about the site or in connection with the execution of work, report such accident to the architect. The contractor shall also such report immediately to the competent authority whenever such report is required to be lodged by the law and take approximate action thereof.

### ARBITRATION CLAUSE:

All disputes arising out of or in any way connected with the agreement shall be deemed to have arisen at New KARNAL only, the court in New KARNAL shall have jurisdiction to determine the same.

**Signature of the tenderer With stamp seal**

# SECTION- 7 CONDITIONS FOR ELECTRICAL WORKS

### CONDITIONS FOR ELECTRICAL WORKS IN INDIAN BANK BRANCH AT SECTOR-6 , KARNAL.

**NOTE: -**

These preambles apply to all the sections of schedule of quantities and tendered rates shall take into account all these provisions in additions to various provisions in other parts of the tendered documents.

1. The quantities given in schedule are provisional. The contractor will be paid for the actual quantity of work executed at site at the rates quoted in his tender. The owner reserves the right to increases or decreases any of the quantities or to totally omit any item of work. The variation due to the above shall be limited to 5% of the total contract amount. Any claim by the contractor in these accounts will not be entertained.
2. All the items of work given in this schedule of quantities shall be executed strictly in accordance with the Indian Electricity Act. The Indian electricity rules and requirements of the Electric supply authority read in conjunction with the relevant drawings, specifications and the appropriate Indian Standards.
3. All measurements shall be taken in accordance with the Indian Standard Electrical Installation in buildings method of measurement of IS unless otherwise specified.

The contractor shall visit the site of work and shall satisfy himself if as to conditions under which the work is to be performed. No extra claim consequence of ignorance or on grounds of insufficient description will be allowed at later date.

5. No alteration whatsoever is to be made to the text or quantities of this schedule of quantities unless alteration is authorized in writing by the owner. Any such alterations, notes or additions shall, unless authorized in writing the disregarded when tender documents are considered.

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

Any error in description or in quantity or omission of items from the contract

schedule shall not vitiate this contract but shall be corrected and deemed to be a variation required by the owner.

### GENERAL CONDITIONS:

The specification generally applicable to this work shall be as per C.P.W.D. Specifications for Electrical work at KARNAL except as otherwise specified in the description of items given in the schedule of quantities or in the General and Technical specifications the requirement of these specifications will be fulfilled by the Contractor within the Tendered rates and without extra charge. The item rates quoted shall be deemed to have taken these specifications into account.

1. The Electrical work will be carried out generally in accordance with the General specification 1972 with amendments up-to-date for Electrical work in Central Government buildings while complying in all respects with the requirements of the latest Indian Electricity Rules in force for the time being.
2. The Electrical shall be carried out simultaneously with building work and will be continued will it is completed satisfactorily along with the completion of essential portions of building work.

If any Minor alterations are found necessary, the contractor will do the same within the tendered rates.

The work will be carried out in the best workman like manner and any defect in the work or changes in the design etc. if pointed out shall be carried out by the contractor within the tendered rates.

The contractor shall employ adequate labour to complete the work within the stipulated time and make his own arrangements for housing labour and storage of materials etc. A whole time Electrical Supervisor/Engineer shall be employed by the contractor who will remain at site of work to receive orders or another instructions from the Architects/Engineer-in-charge./ consultant.

Any material supplied by the Employers, if damaged in any way during cartage or execution of work or otherwise, shall be made good by the contractor at his own cost.

During, the progress of work, portions of the building may be occupied and put to use by the owner but contractor will remain fully responsible for maintenance of the Electrical Installations till be entire work covered by this contract is satisfactorily completed by the Architects/Engineer-in-charge./ consultant.

### CONTRACTOR TO OBTAIN INFORMATION BY HIMSELF

The contractor shall obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of tendering and for entering into contract, and must examine and study the specifications, drawings the design of electrical installation, inspect the site, the building plans etc. If the drawings are supplied to the contractor for tender purposes, the same must be returned in good condition with the tender. The contractor shall also not with standing an information given to him, make local and independent Enquirers.

### TENDER RATES

All Tender rates will include for the cost of materials, erection connections, labour, supervision, tools, plant, transport all taxes contingencies, breakage, wastage, sundries, scaffolding, maintenance of installation for one year etc. i.e. they should be for an item complete in all respect.

### APPROVALS

The contractor, while executing the work, shall conform to the provision of any Government Act relating to the work and to the regulations and Byelaws of the local authorities, and of the Company to whose system of supply the installation is proposed to be connected. The contractor shall given all notices, required by the Acts, Regulation of Bylaws. He will also undertake to provide test certificate and drawings as required and will make necessary arrangements to procure electricity supply without any extra charge. The contractor shall also obtain all approvals for the item of work done under this contract from the appropriate authorities. All inspection fees or submission fees paid by the contractor will be reimbursed by the owner against valid official receipt’s. Contractor shall posses a valid electrical Contractor’s License issued by the inspectorate of the Local Government, ‘A’ Class license category holders.

### SAMPLES:

Samples of materials and fabrication drawings will be submitted by the contractor according to the schedule/specifications. Any deviation from the schedule/specification will have the written consent of the consultant/Architects. No approval given by the Consultants /Architect to any samples or drawings submitted by the Contractor shall in any way exonerate the contractor from his liability to carry out the work the accordance with the terms of contract.

### DRAWINGS:

**A. WORKING DRAWINGS**

The contractor will submit 4(four) sets of working drawings indicating detailed layouts for approval and proceed with work thereafter. All fabrication drawings and other literature will also be submitted in advance for approval.

### B.COMPLETIONS DRAWINGS

The contractor shall submit one complete set of Original Tracing and further two copies of layout drawings to the Consultants/Architects after completion of the work. These complete drawings shall give the following information:

1. Runs of conduits, Diameter of conduit, number of wires contained in each conduit and size of wire for point wiring, mains, sub mains.
2. Location of all Distribution Boards, Main Switches, Junction and outlet boxes.
3. Complete Schematic Diagram of the installation. Cables, dummy pipes, earthing and communication systems and all other services covered under this contract
4. The Drawings will be submitted in 4 (four) different sets as below:- SET NO:1 : Lighting layout giving details of the entire lighting system. SET NO:2 : Power layout giving details of the entire power system.

SET NO:3 : Communication layout, mains, sub mains, Lighting Protection, earthing system and any other details not covered in earlier drawings.

SET NO:4 : Schematic diagram.

No completion certificate will be issued until the completion drawings in the above mentioned forms are submitted. The drawings will be prepared and submitted by the contractor without extra charge Rs. 10,000/- may be kept for non-completion of these.

### PROGRESS AND TIME OF COMPLETION

1. The work will commence immediately after the contractor receives instructions to proceed.
2. The contractor will work in cooperation with the building contractor and other contractors and shall arrange to place his conduits in the masonry and concrete work as the building or other work proceeds. Any hold up of the building or other work because of delay in laying of conduits or otherwise, shall be the responsibility of the Electrical Contractor and will make him liable for damages if any, by the Employers.
3. The contractor shall in consultation with the Consultants/Architects draw up a time schedule on commencement of the work. This time schedule will be strictly adhered to.

### SPECIFICATIONS

1. **INTERNAL WIRING**

### System of wiring

The system of wiring shall consist of single core PVC insulated standard copper conductor in PVC conduits concealed or exposed as called for on the drawings.

### General

Prior to laying and fixing of conduits, the Contractor shall carefully examine the drawings indicating the layout of conduits, satisfy himself about the sufficiency of number and size of conduits, location of junction boxes, sizes and location of switch boxes and other relevant details. Any discrepancy found in the drawings shall be brought to the notice of the Employer/ its representative. Any modifications suggested by the Contractor shall be got approved by the Architect before the actual laying of conduits is commenced.

### Materials

PVC Conduits: PVC conduits shall be of min 2 mm wall thickness and ISI marked to heavy duty.

* + 1. Connections

All joints shall be fully water tight and sealed by applying cementing jointing compound as per manufacturer’s recommendation. Junction boxes and running joints shall be provided at suitable places to allow for subsequent extensions, if any, without undue dismantling of conduit system. As far as possible, diagonal run of conduits shall be avoided. Conduit system shall be erect and straight as far as possible. Separate conduits shall be run for 15amps-power outlet wiring. The Joints in conduit shall be free of burrs to avoid damage to installation of conductors while pulling them through the conduit.

### Bends in Conduit

Where necessary, bends or diversion may be achieved by means of bends and / or circular inspection boxes with adequate and suitable inlet and outlet connections. In case of recessed system each junction box shall be provided with a cover properly secured and flush with the finish wall surface, so that the conductors inside the conduit are easily accessible. No bend shall have radius less than 2 ½ times the outside diameter of the conduit.

### Fixing Conduits

Conduits and junction boxes shall be kept in position while the walls, slabs and floor are under construction and proper hold fasts shall be provided. Conduits shall be so arranged as to facilitate easy drawing of wire through them. Adequate junction boxes of approved quality and size shall be provided. Where conduits Cross expansion joints in the building, adequate expansion fittings or other approved devices shall be used to take care of any relative movement. All conduits shall be installed so as to avoid steam and hot water pipes. Conduit stubs in floor slabs shall be kept as short as possible above finished floor level in order to avoid any damage to them. After the conduits, junction boxes, outlet boxes and switch boxes are installed in position, their outlet shall be properly plugged or covered so that water, mortar, insects or any other foreign matter does not enter into the conduit System. Where called for, surface conduits shall be fixed by means of spacer bar saddles at intervals not more than 1000 mm and 100 mm from both sides of fitting or accessories. The saddles shall be 3mm x19mm galvanized mild steel flat, properly treated, Securely fixed to support by means of raw bolts and brass machine screws. Conduit in chases shall be avoided. Where unavoidable, conduit shall be fixed by means of Staples not more than 600mm apart and the chases filled with cement mortar1:6 Cutting of horizontal chases is prohibited. All socketed connections shall be made fully water tight by the use tooling or as suggested by manufacturer PVC Conduits.

### .Switch outlets & Junction boxes

All outlets for switches, sockets and other receptacles shall be equipped with rust proof outlet boxes of sheet steel fabricated from 16 SWG sheet as called for having smooth external and

internal surface to true finish. Where called for, outlet boxes for receiving switches and fan regulators shall be fabricated to approved sizes and covered with 3/16th inch thick decorative laminate sheet. Outlets exposed to the weather shall be fully weather tight, complete with rubber gasketed covers. Outlets where used shall be painted with two coats of bituminous paint before they are fixed in position, outlet boxes fixed in concrete shall have a minimum depth of 75mm and the wall thickness of the boxes and spouts shall not be less than 2mm.

### Inspection Boxes

Rust proof boxes of cast iron and required size, having smooth external and internal finish, shall be provided to permit periodical inspection and to facilitate removal and replacement of wires when required. Inspection boxes shall be mounted on walls/ ceiling finished surface and shall be provided with 3/16th inch thick decorative laminate sheet cover to the box with brass screws. Adequate ventilation holes shall be provided in the inspection box covers.

### Telephone system

Conduit, junction boxes, draws boxes, outlet boxes and covers to boxes for telephone system shall be as described under relevant clauses elsewhere in these specifications. The conduit for telephone wiring shall be of specified size and shall terminate at outlets as indicated on the drawings. All telephone system conduits shall have ‘14’ SWG galvanized steel pull wires installed.

### Conductors

All PVC insulated copper conductor wires shall conform in all respects to Indian Standards.

### Bunching of wires

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

### Drawing Conductor

The drawing and jointing of copper conductor wires and cables shall be executed with due regard to the following precaution: While drawing insulated wires into the conduits, care shall be taken to avoid scratches and kinks, which cause breakage of conductors. There shall be no sharp bends. Insulation shall be shaved off like sharpening of a pencil and it shall not be removed by cutting it square of wiring. Strands of wires shall not be cut for Connecting terminals. The terminals shall have sufficient cross sectional area to take all strands and shall Be thinned. The connecting brass screws shall have flat ends. All looped joints shall be connected through terminal blocks / connectors. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Conductor having nominal cross-sectional area exceeding 4 Sq.mm shall always be provided with cable sockets. At all bolted terminals, brass flat washers of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections. Only certified wiremen and cable jointers shall be employed to do jointing work. All wires and cables shall bear the manufacturer’s label and shall be brought to site in new and original packaging. For all internal wiring, PVC insulated wires of 250/440 volts grade shall be used. The sub-circuit wiring for points shall be carried out in looping in system and no joint shall be made.

### SWITCHES, RECEPTACLES & FIXTURES

* 1. **Switches**

All 5/15amp switches shall be piano type switches 220 V A.C. All switches shall be fixed inside the switch boxes on the cover plates with Brass machine screws and nuts leaving ample space at the back and sides for accommodating wires. Flush mounted fan regulators shall be fixed inside the switch boxes over the cover plate with brass machine screws and nuts. The switch controlling the light point or fan shall be connected on the phase wire of the circuit. Switches shall be located at 1200mm above floor level unless otherwise indicated. Cover Plates: All switch receptacles and telephone system outlets in the walls shall be Provided with white urea powder pressed cover plate of standard configuration of Switches manufacturer. The cover plates shall be secured to the box

with counter sunk brass screws.

### Wall socket outlet

All 5 amp 3pin socket outlets where called for shall be switches and 3 pin type. All 15 amp 3 pin wall socket outlets where called for shall be switched. The sockets shall be erected approximately 150 mm above floor level (to the bottom of the box), unless otherwise specified. The switch controlling the point outlets and socket outlets shall be on the phase wire of the circuit. The earth terminal of the socket shall be connected to the earth terminal provided inside the box by means of 2.5 sq. mm insulated copper wire. No joints are allowed in the length of the conductors. If the use of joint connections is unavoidable due to any specific reasons, prior permission in writing shall be obtained from the employer/ its representative/ Engineer in charge before the use of such connections. No wire shall be drawn into any conduit, until all work, of any nature that may cause injury to the wire, is completed. Care shall be taken in pulling the wires so that no damage occurs to the installation of the wire. Before the wires are drawn into the conduits, the conduits shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction by forcing compressed air through the conduit. The minimum size of PVC insulated copper conductor wires for all sub circuit shall be as follows: Wiring for lights, exhaust fans and ceiling fan points shall be 1.5 sq.mm .The two 15 amp power outlets shall be grouped be 1.5 sq.mm. The two 15 amp power outlets shall be grouped in one circuit where called for, Wiring for the first power outlet shall be carried out with 4 sq.mm. PVC insulated copper conductor wires. Wiring for the second power outlet shall be carried out with 4 sq.mm. All power outlets shall be provided with 2.5sq.mm insulated copper earth wires.

### Colour code of conductors

Color code shall be maintained for the entire wiring installation: Red, Yellow, Blue for the three phases, Black for neutral, Green for earth.

### Ceiling fans

All ceiling fans shall be provided with suspension arrangements in the concrete slab / roof numbers. It is the duty of the contractor to make those provisions at the appropriate stage of construction. The fan hook boxes shall be fabricated from 16 SWG sheet steel in hexagonal shape and provided with 12mm dia. MS rod bent to shape. Exhaust fans shall be fixed at location shown on the drawings. They shall be wired to a plug socket and at a convenient location near the fans. All switch and outlet boxes fan and light fittings shall be bonded to earth through copper wire properly screwed on to the body to make an effective contact.

### CABLES

* 1. **General**

MV cables shall be supplied, inspected, laid, tested and commissioned in accordance with drawings, specifications, relevant Indian Standard. Specifications, and cable manufacturer’s instructions. The cable shall be delivered at site on original drums with manufacturer’s name clearly written on the drums. The recommendation of the cable manufacture with regard to jointing and sealing shall be strictly followed:

### Materials

The MV cables shall be PVC insulated Aluminum conductor armoured cable conforming to IS: 1554 laid in trenches, ducts and underground as shown on drawings.

### Inspection

All cables shall be inspected upon receipt at site and checked for damage during transit.

### Cable termination

Cable terminations shall be done in terminal cable box using cable glands. All pipe sleeves shall be sealed with sealing compound.

### Bonding of cables

Where a cable enters any piece of apparatus it shall be connected to the casing by means of an approved type of armored clamp and gland. The clamps must grip the armoring firmly to the gland or casing, so that no undue stress is passed on to the cable conductors due to vibrations. The gland or cone shall be capable of effecting a good electrical bond between both the armoring and the casing.

### Laying cables

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cables. The cable drums shall be placed on jacks before unwinding the cable, Great care shall be exercised in laying cables to avoid forming kinks, the drums shall be unrolled and cables run over wooden rollers in trenches at intervals not exceeding 2 meters. Cables shall be laid at a depth of 0.75 meters below ground level.

A cushion of sands, not less than 80mm shall be provided both above and below the cable and joint boxes and other accessories. Cables shall not laid in the same trench or along side of a water main. The cables shall be laid first in excavated trench and a layer of 80mm sand shall be lifted and placed over the sand bed. The second layer of 80-mm sand shall then be spread over the cable. The relative position of the cables, laid in the same trench shall be preserved and the cables shall not cross each other as far as possible. At all changes in directions in horizontal and vertical planes, the cable shall be bent smooth with a radius of bend not less than 12 times the diameter of cable. Minimum 3 meters long loop shall be provided at both sides of every straight joint and 5 meters at each end of cable. Distinguishing marks shall be made on the cable ends for identification. Insulation tapes of appropriate voltage and in Red, Yellow and Blue colors shall be wrapped just below the sockets for phase identification.

### Protection of cables

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

Cables under road crossing and any other places subject to heavy traffic shall be protected by running them through hume pipe of suitable size. The depth of the hume pipe shall be 1 meter below the finished road level.

### Excavation & Back Filling

All excavation and back fill including timbering, shording and pumping required for the installation of the cables shall be carried out by the Contractor in accordance with the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layers not exceeding 150 mm. Each layer shall be properly rammed and consolidated before laying the next layer. The Contractor shall restore all surfaces, roadways, sidewalks, curbs, walks or other works cut by excavation to their original conditions, satisfactory to the employer / its representative, including disposal of surface soil as directed.

### Testing of cables

Prior to laying cables, the following tests shall be carried out: Insulation test between phases, phase and earth for each length of cable before and after jointing.

On completion of cable laying work, the following test shall be conducted in the presence of the employer/ its representative.

1. Insulation Resistance Test (Sectional and overall)
2. Continuity Resistance Test
3. Earthing Test.

All tests shall be carried out in accordance with relevant Indian Standard Cord of Practice and Indian

Electricity Rules. The Contractor shall provide necessary instruments, equipment and labour for conducting the above test and shall bear all expenses in connection with such tests. All tests shall be carried out in the presence of the employer/ its representative.

### Markers & Warning Plates

Approved CL cable markets shall be provided along the route of the cables at every 30 meters distance and at both ends of road crossing, indicating “MV CABLES”. Special CL markers shall be provided at all buried cable joints indicating “ELECTRICAL CABLE JOINT”.

### DISTRIBUTION BOARDS

The Distribution Panel and Distribution boards shall be suitable for operation on 3 phase/single phase/ single Phase 415/230 volts. 50 cycles neutral grounded at

transformer and short circuit level not less than 9ka at 415 volts.

The distribution panel/Board shall comply with the latest edition of relevant Indian Standards and Indian Electricity Rules and Regulations.

### Construction

The Distribution panels/ boards shall be CRCA sheet steel cubical, indoor, dead front, floor mounting

/ wall mounting type. The Distribution boards shall be totally enclosed, completely dust and vermin proof. Gaskets between all adjacent units and beneath all covers shall be used to render the joints dust proof. Distribution boards shall be preferably arranged in multitier. All doors and covers shall be fully gasketed with foam rubber and/ or rubber strips and shall be lockable. All MS sheet steel used in the construction of Distribution boards shall be 16 SWG thick and shall be folded and braced as necessary to provide a rigid support for all components. Joints of any kind in sheet metal shall be seam welded, all welding slag grounded off and welding pits wiped smooth with plumber metal.

All panels and covers shall be properly fitted and square with the frame and holes in the panel correctly positioned. Fixing screws shall enter into holes trapped into an adequate thickness of metal or provided with hank nuts. Self threading screws shall not be used in the construction of distribution boards.

Knockout holes of appropriate size and number shall be provided in the distribution board in conformity with the location of incoming and outgoing.

### Bus Bar Connections

Rectangular cross section suitable for full load current for MCB’S shall be provided on the phase of live conductors of each circuit, and a neutral bar for earthed neutral. The individual banks of MCB’S shall be detachable. Phase separation barriers of 3mm thick Bakelite sheet shall be provided between. There shall be ample space behind the fittings to accommodate all the wiring. All the internal wiring of distribution boards shall be concealed behind 3mm thick Bakelite sheet. All the distribution boards shall be completely factory wired, read for connections. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each circuit shall be clearly numbered from left to right to correspond with the wiring diagram. All the switches and circuits shall be distinctly marked with a small description of the service installed.

### Switch Fuse

The switch fuse units shall be 3 pole double break type suitable for load duty quick make and break action. Separate neutral link shall be provided in the switch. All switch fuse units shall be provided with hinged doors duly interlocked with operating mechanism, so as to prevent opening of the door when the switch is in “ON” position and also to prevent closing of the switch when the door is not properly secured. All contacts shall be silver plated and all live parts shall be shrouded. High rupturing capacity (HRC)fuse links shall be provided with switch fuse units and shall be in accordance with IS:2208 and having rupturing capacity not less than 31 MVA at 415 volts. HRC fuse links shall be provided with visible indicators to show that they have operated.

### Earthing

Copper earth bars of 25 mm x 3mm shall be provided for the distribution panel for the full length of the panel and connected to the frame work. Provisions shall be made for

connection from this earth bar to the main ear thing bar on both sides of the distribution panel.

### Painting

All sheet steel shall undergo a process of degreasing, pickling in acid, cold rinsing, phosphate passivating and then sprayed with a high corrosive resistant primer. The primer shall be baked in an oven. The finishing treatment shall be by application of two coats of synthetic enamel paint of approved colour and stoved.

### Labels

Engraved PVC labels shall be provided on all incoming and outgoing feeder switches. Circuit diagram showing the arrangement of the circuit inside the distribution board shall be pasted on inside of the panel door and covered with transparent laminated plastic sheet. All the distribution boards shall be subject to tests specified in relevant Indian Standard and test certificate shall be furnished.

### EARTHING

* 1. **Earthing**

All the non-current carrying metal parts of electrical installation shall be earthed properly. All metal conduits, trunking, cable sheaths, switch gear, distribution fuse boards, lighting fittings sand all other parts made of metal of specified earthing conductors to an efficient earth electrode. All earthing will be in conformity with the relevant provision of rules 33 and 61 of the Indian Electricity Rules 1956, and Indian Standard Specifications IS: 3043.

### Earthing Conductors

Every earthing conductor shall be of bare G.I/ Copper/ insulated coppers called for on drawings/specified in bills of quantities and shall be protected against mechanical injury or corrosion.

### Sizing of Earthing Conductors

The cross sectional area of earthing conductor shall be as called for on the drawing.

### Construction of Earthing conductors

Main earthing conductors shall be taken from the earth connectors at the main switch boards to an earth electrode with which the connection is to be made. Sub - main earthing conductors shall run from the main switch board to the sub-distribution boards. Circuit earthing conductors shall run from the exposed metal of equipment and shall be Connected to any point on the earthing conductors, or its distribution board.

### Earthing Stations Pipe Earthing:

Earthing electrode shall consist of a C.I. pipe (12 mm wall thickness) of 100 mm dia and 3.7 meters long. The electrode shall be buried vertically in the ground as far as practicable below permanent moisture level with its top not less than 200 mm below ground level. The electrode shall be in one piece and no joints shall be allowed in the electrode. Wherever possible earth electrodes shall not be located in proximity to a metal fence. It shall be kept clear of the building foundations and in no case shall be nearer than 2 meters from the outer face of the wall. The pipe earth electrode shall be kept vertically and surrounded with 150 mm thick layer of charcoal dust and salt mixture up to a height of 2.5 meters from the bottom. At the top of the electrode a funnel with a mesh shall be connected to the electrode, just below the funnel, with proper terminal lugs and check nuts. The funnel over the C.I. pipe and earth connection shall be housed in a masonry chamber, approximately 300 mm long, 300 mm deep. The masonry chamber shall be provided with a cast iron cover resting over a CI frame embedded in masonry.

### Earthing Connections

All metal clad switches and other equipment carrying single-phase current shall be connected to earth by a single connection. All metal clad switches carrying medium voltage shall be connected to earth by two separate and distinct connections. The earthing conductors inside the building wherever exposed shall be properly protected from mechanical injury by running the same in G.I. pipe of adequate size. The earthing conductor shall be painted to protect it against corrosion.

Earthing conductor outside the building shall be laid 600 mm below the finished ground level. The overlapping in GI strips in joints shall be riveted. Lugs of adequate capacity and size shall be used for all termination of conductor wires above 6sqw.mm size. Lugs shall be bolted to the equipment body to be earthed after the metal body is cleaned of paint and other oily substance.

### Resistance to Earth

The resistance of each earth system shall not exceed 1.0 ohm.

### Testing

* 1. **General**

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

1. Wiring continuity test 2.Insulation continuity test

1. Earth continuity test
2. Earth Resistivity test

Besides the above tests any other tests specified by the local authority shall also be carried out. All tested and calibrated instruments for testing, labour and materials and incidentals necessary to conduct the above tests shall be provided by the contractor at his own cost.

### Testing of Wiring

The entire wiring systems shall be tested for continuity of circuits, and earthing after wiring is completed and before energizing by the Contractor in the presence of the Architects.

### Insulation Resistance Test

The insulation resistance shall be measured by applying between earth and the whole system of conductors or any section thereof, with all fuses in place and all switches closed and except in concentric wiring all lamps in position of both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it does not exceed 660 volts for medium voltage circuits. Where the supply is derived from AC- three-phase system, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistance measured as above shall not be less than be carried out after removing all metallic connections between the two pole of the installation and in these circumstances the insulation resistance between conductors of installation shall not be less than specified above. The insulation resistance between the case of frame work of housing and power appliance and all live parts of earth appliance shall not be less than specified in the relevant Indian Standard specification or where there is no such specification shall not be less than half a megoln.

### Earth Continuity Test

The earth continuity conductor metallic envelopes of cables 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

In a two wire installation a test shall be made to verify that all non-lined single pole switches have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connections to an outer or phase conductor or to the non -earthed conductor of the supply. In the three or four wire installation a test shall be made to verify

that every non-linked single pole switch is fitted in a conductor to one of the outer or phase conductor of the supply. The entire installation shall be subject to the final acceptance of the employer as well as the local authorities.

### Earth Resistivity Test.

Earth resistivity test shall be carried out in accordance with Indian Standard code of practice for earthing IS: 3043. All tests shall be carried out in the presence of employers representative.

### I.S. STANDARD

In general the materials, equipment and workmanship shall conform to the following Indian Standard, unless otherwise called for:-

1. PVC Insulated (Heavy Duty) cables for working voltage up to & including

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1100 v (Revised).2. PVC Insulated Cables (for voltage up to 1000 v) | : I.S.: I.S. | 1554694 | - 1976- 1977 | PT | 1 |
| 3. Rigid Steel Conduits for Electrical Wiring (Second Revision) | : I.S. | 9537 | - 1972 |  |  |
| 4. Accessories for rigid steel conduits for electrical wiring | : I.S. | 3837 | - 1976 |  |  |
| 5. Boxes for the enclosures of Electrical Accessories. | : I.S. | 5133 | - 1969 |  |  |
| 6. 3Pin plug & socket outlets | : I.S. | 1293 | - 1967 |  |  |
| 7. Adhesive insulating tapes for Electrical Lighting fitting | : I.S. | 2448 | - 1968 | II |  |
| 8. General safety requirements for Electrical |  |  |  |  |  |
| Lighting Fittings. | : I.S. | 1913 - | 1969 |
| 9. Electric Ceiling Fans and regulators. | : I.S. | 347 | - 1966 |
| 10. Propellor type AC Ventilating fan | : I.S. | 2312 | - 1967 |
| 11. Code of practice for earthing | : I.S. | 3043 | - 1987 |
| 12. Code of practice for safety of building (General ) Electrical installation | : I.S. | 1646 | - 1961 |
| 13. Airbreal switches & fuses combination units for voltage not exceeding 1000 V AC or 1200V DC. | : I.S. | 1904 | - 1976 |
| 14. HRC Cartridge fuse link up to 650 V | : I.S. | 9224 | - 1979 |
| 15. Protection of Building and allied structures against lighting. | : I.S. | 2309 | - 1969 |
| 16. Fittings for rigid steel conduits for Electrical wiring. | : I.S. | 2667 - | 1976 |
| 17. Heavy duty air break switch & composite unit of air break switches &fuses for voltage not |  |  |  |

exceeding 1000 V : I.S. 4064 - 1978

1. General requirements for switchgear & control-

gear for voltage not exceeding 1000 V : I.S. 4237 - 1982

1. Switch socket outlet : I.S. 4615 - 1968
2. MCCB, MCB, RCCB : AS PER I.S.

SPECIFICATIONS

1. CONDUITS : AS PER I.S. SPECIFICATIONS

**LIST OF APPROVED BRANDS / MAKES**

One of the following make of the material shall be used. The contractor will have to get the sample approved from the Architect whose decision shall be binding on the contractor. The condition is also applicable for any material not mentioned in the specification or schedule of work. No deviations are allowed in these even during/after Tender.

**LIST OF APPROVED MAKES/ BRANDS**

**INTERIOR WORK :**

1.Commercial block board : CENTURY(Not Sanik) /

& GREEN (Not Ecotek) /DURO

 PREMIUM RANGE/ ALPRO/

Commercial pre-treated (Not Contractors Range) Wood

 preservative plywood.

&

Commercial ply , : CENTURY(Not Sanik)/

Teak Board & Ply GREEN (Not Ecotek) /DURO PREMIUM RANGE (Not Contractors Range)

1. Flush door shutters : CENTURY(Not Sanik) /

GREEN (Not Ecotek) /DURO PREMIUM RANGE

(Not Contractors Range)

1. Kailwood : 1st Class Kail

4. Teak wood : C P TEAK / BURMA TEAK

5 Veneer : TRUE WOOD CENTURY,

 GREENPLY/SAMRAT AROSA/

1. WINDOW GLASS (SHEET, PLATE) : HPG / TRIVENI / INDO ASIA,
2. ALUMINIUM DOOR FITTINGS : ECIE
3. FLOAT GLASS : MODI/SAINT GOBAIN
4. LOCKS : GODREJ/HETTICH
5. ALUMINIUM FRAME FOR : HINDALCO/ INDAL WINDOW PARTITION ETC
6. LAMINATE & : FORMICA/GREEN/MERINO/AICA SUNMICA, DECORATIVE LAMINATE CENTURY/GREEN LAM/VENTURA

 GLO/ EURO PRATEIK/SIBU

1. CEMENT BONDED : BISON/ E.C.I.E PARTICLE BOARD
2. GLASS UP TO 5.5MM THICKNESS : HINDUSTAN SAFETY GLASS/MODI/ TRIVENI
3. 12MM THICK PLATE GLASS : SAINT GOBAIN/MAX HEREMES/ ASAHI GLASS/H.P.G.
4. FABQUARD TREATMENT (DOVE : ON ALL UPHOLSTERED ITEMS & CORPORATION/SCOTCH GUARD) CARPETS.
5. BLINDS-HORIZONTAL OR VERTICAL : VISTA LEVELOR
6. PVC TILES : ARMSTRONG
7. CARPET : TRANSASIA/MODI
8. SLOTTED ANGLES : MEK VINAR
9. HINGES & CHANNEL : HETTICH
10. HANDLES (GLASS DOOR) : DORMA
11. FALSE CEILING : INDIA GYPSUM /ARMSTRONG
12. ANTI TERMITE & FIRE RETARDANT : VIPER PAINT
13. TOUGHENING : GOLD PLUS/GURIND/ASAHI FLOAT
14. DOOR CLOSER : DORMA/DOORKING

**CIVIL WORK**

1. Vitrified Tiles(600mmx600mm) : JOHSON, MARBO GRANITE, MARBITO,RAK
2. Ceramic tiles : KAJARIA, NITCO
	1. Paint : NEROLAC. BERGER, ICI, ASIAN

PAINTS

3.2.Cement Paint : SUPER SNOCEM , ACROCEM

* 1. Wax Polish : MANSION OR EQUIVALENT
	2. Bitumen Sealing Compound : SHALITEX
	3. Bitumen : SHALIMAR
1. Bricks : AS PER IS :1077 FROM APPVD. KILN
2. Fine Sand : AS PER IS :383 (LATEST EDITION)

6..Stone Aggregate : AS PER IS :383 (LATEST EDITION FROM APPVD. QUARRY

7. Structural steel : AS/IS226&2062

|  |  |  |
| --- | --- | --- |
| a) | Mild Steel | : AS/ IS 432 |
| b) | Cold Twisted | : AS/ IS 1786 |
| d) | Nuts & Bolts | : AS/ PER 1367 |
| 8. | Building lime | : SANTNA |
| 9. | White lime | : DEHRADUN OR APPROVED EQUIVALENT |
| 10. | Water -proofing compound | : CICO,M.C.BANCHEMI,SICA |

QUALERETE, AERONITE (AERO).ROFE, VAM ORGANIC

11. Surface ceiling compound : PIDLITE,OR EQUIVALENT.

**SANITARY WORK**

1. G.I Pipes : I.T.C., B.S.T. Jindal (B” CLASS)
2. C.P.V.C. Pipes : WAVIN INDIA,GARWARE PLASTIC,FINOLEX
3. Gully traps and stoneware : PERFECT pipes
4. Vitreous china fixtures : HINDUSTAN SANITARY
5. Flushing cistern-PVC : HINDUSTAN SANITARY WARE, CERA,NEYCER
6. Bib-cocks and stop cocks : GEM PENGUIN, PARKO,ESSO,(ISI GRADE) KINGSTON.
7. Full way valve : LEADER,G.G
8. Brass bib-cock & full way value : L&K,LEADER
9. G.I Fittings : R BRAND
10. Stainless steel Kitchen sink : AMC/PRESTIGE/NEELNATH
11. Toilet roll holder : SEIKO/ADMIRAL
12. Mixer for kitchen. : PARKO/DRIPLESS

## APPROVED MAKE OF EQUIPMENT FOR ELECTRICAL WORKS

All the equipment & material used in the execution of the work shall be either one of the approved makes listed below unless otherwise specified :

S.F.U. **:SIEMENS/ L& T**

## M.C.C.B. :CROMPTON / AFG /CRABTREE/ L & T/ HAVELLS

BOX & MODULE PLATE **:CRABTREE FLUSH METAL BOX EXCLUSIVE MODULE PLATE**

Distribution boards **:Fabricated compact mentalised type**

## MCBS :MDS (Load Kontact ) /HAVELLS INDOKOPP

PVC Insulated single Core **:Asian , Gloster ,SKYLINE**

Wires

Telephone Cables **:Delton / Skytone / D-LINK**

PVC Insulated Single Core **: Universal / Skytone/Havells**

Wires

M.S Conduit (ISI) **:AKG / BEC**

PVC CONDUIT :**NIC / AKG / ICI /BEC**

Switches & Sockets **:M.K. , CRABTREE OF HAVELL .S**

& TELEPHONE JACK **ANCHOR/RIDER**

Fluorescent Fittings **:Philips, Crompton Greaves / BAJAJ**

Incandescent Fittings **:DECON / MR. LIGHT**

Ceiling Fans **:GEC / CGI / USHA/CG**

Exhaust Fans **:Crompton Heavy Duty**

## APPROVED MAKE OF EQUIPMENT OF A.C MACHINE

1. DAIKIN
2. BLUE STAR
3. CARRIER
4. HITACHI

## TECHNICAL DATA (AIR-CONDITIONING WORK)

**BASIS OF DESIGN**

## Site of Location: INDIAN BANK BRANCH AT SECTOR-6, KARNAL.

**INDOOR DESIGN CONDITIONS**

Indoor design Conditions for Centrally Air Conditional Spaces shall be as follows:

DB : 22 + 1 Deg C (72 + 2 Deg F)RH : Less than 60%

NOTE:

No winter heating is provided.

**SPLIT UNIT**

## Supply, installation, testing & commissioning of Micro Processor based Air– cooled Duct able split Air-conditioning Units each comprising an outdoors shall be complete with fan/ cooling coil & refrigerant piping with controls & first charge of refrigerant R-407 gas & oil. Evaporating gas &oil. Evaporating unit shall consist of a fan section with dynamically balanced centrifugal an driven by FHP motor etc. Enclosure as specified. The evaporating unit shall be equipped with synthetic fiber filter insulated drain pan, thermostat all complete in a unit The enclosure shall be factory painted to a smooth finish.

## Split System Air Conditioners

1. **General**
	1. The contractor shall supply and install split system air conditioner wherever indicated. The system shall be complete in all respects and comply with the specifications as given.

## Condensing Units

* 1. Each condensing unit shall be complete unit with hermetic compressor/s, air cooled condenser, condenser fans with motors, internal piping, switches and internal wiring and shall be enclosed in a weather proof outdoor type housing.
	2. The compressor shall be hermetic, with enclosed gas cooled motor. The compressors shall be suitable for R-407 or Eco friendly refrigerant.
	3. The condenser coil shall be air-cooled type with aluminium fins and copper tubes and necessary refrigerant connections. The copper tubes shall not be less than 1/2" O.D.
	4. The condenser air fans shall be propeller type direct driven, each complete with motor. The air quantity and area of the condenser shall be adequate for working in the specified outdoor conditions.
	5. The casing shall be fabricated from galvanised steel, zinc phosphated and finished with baked enamel paint. The casing shall make the whole unit fully weather proof, suitable for outdoor installation.
	6. The unit shall include a remote control assembly with thermostat at and starting and speed switches.
	7. The necessary charge of refrigerant gas and lubricated oil shall be provided to run the system.

## Fan Coil Unit

* 1. The fan coil unit shall be high mounted type and shall be matched to the respective- condensing unit. Each unit shall consist of cooling coil, fan, filters, outer casing, drain pan, accessories etc.
	2. The cooling coil shall have copper tubes of not less than 3/8" O.D. and continuous aluminium plate fins with integral collors. The tubes shall be staggered in the direction of the airflow.
	3. The fan section shall consist of (2) two light weight aluminium impellors, statically and dynamically balanced, mounted directly on to a double shaft single phase, multiple winding motor capable of running at 3 speeds.
	4. The unit casing shall be made of high quality moulded plastic and shall be insulated to lower the noise level and eliminate condensation. The supply and return air grilles shall be high quality moulded plastic.

## Refrigerant Piping

* 1. The condensing unit and evaporator unit shall be interconnected by Type -I seamless copper refrigerant liquid and suction lines using flared or brazed fittings. Necessary accessories shall be incorporated in the circuit.
	2. The suction line shall be insulated with 6 mm rubber foam insulation sections.

## Miscellaneous

* 1. The cooling unit shall have control panel, housing the starting switches, contactor, relays etc.
	2. Isolation pads shall be provided under the units.
	3. Drain line shall be provided from fan coil unit up to drain trap. (To be priced separately).
	4. Suitable M.S. angle iron supporting frame shall be provided for the condensing unit and supporting arrangement for the indoor units.
	5. Interconnecting power and control cabling shall be provided between condensing unit and evaporator unit.

|  |
| --- |
| **TENDER FOR THE INTERIOR FURNISHING AND ELECTRICAL WORK OF INDIAN BANK BRANCH AT SECTOR-6 - KARNAL.** |
|
| **SR. NO.** | **DISCRIPTION** | **AMOUNT** |
| 1 | INTERIOR WORK | Rs. |
| 2 | ELECTRICAL WORK | Rs. |
|  | **TOTAL**  | Rs. |
|  | **DISCOUNT** | Rs. |
|  | **SUB- TOTAL** | Rs. |
| **NOTE: GST SHALL BE PAID EXTRA** |

|  |
| --- |
| **ESTIMATE FOR THE INTERIOR FURNISHING WORK OF INDIAN BANK BRANCH AT KARNAL (HR.)** |
| **S.No.** | **Item** | **Qty** | **Units** |  **Rate**  |  **Amount**  |
|   | PANELING/PARTITON |   |   |   |   |
|   | Note: For the Paneling, Full height partitions and low height partitions the work measurement for costing shall be only of the plain visible surface, no extra cost for extrusions or extra frame work required as per drawing will be made. The work done above ceiling, below floor finish level or not directly visible shall not be measured. |   |   |   |   |
|   |   |   |   |   |   |
| 1 | WALL PANELING ( 1.0mm Th. Laminate) upto 4'-6" high |   |   |   |   |
|   | Providing and fixing panelling on column/wall. Framing shall consist of Heavy duty Aluminium Box Sections 50mmx25 mm with maximum spacing of @ 600mm c/c Both ways horizontally and vertically on the column/wall. This framing would be covered by 9mm thk. ISI Marked Ply finished in approved 1.0mm Th. Laminate (Merino / Sunmica / Formica ) of desired shade and design. Wooden molding, lipping etc. shall be provided wherever required as per drawing and deco painted in desired shade. The paneling shall have skirting and intermediate bands finished with metallic laminate of desired shade and design. The work shall also include the cost of making cut-outs for the electrical switches, lights, switch boxes etc. and provision for laying conduit for electrical/telephone/Data cabling etc. |  70.00  | SQ.M |   |   |
|   |   |   |   |   |   |
| 2 | FULL HEIGHT PARTITIONS UPTO 9'-0" HIGH |   |   |   |   |
|   | Providing and fixing wooden full height partition with following specifications: |  75.00  | SQ.M |   |   |
|   | (a) Supporting system comprising of Dry wall Frame Work Boral/Rondo/Gyp. of 50mm x 50mm (18 Gauge) sqaure section@ max. 600mm c/c both horizontally and vertically. The frame shall be fixed rigidly at floor level and ceiling level wherever possible. The rate should also include necessary strengthening with additional members at doors and other openings. |   |   |   |   |
|   | (b) The partition shall have 9mm Plywood fixed on both sides with screws for the entire height of the partition and finished with approved 1.0mm Th. Laminate (Merino / Sunmica / Formica) of desired shade and design on both sides. Wooden molding, lipping etc. as directed by Bank / architect shall be provided wherever required. The partition shall have skirting and intermediate bands finshied with metallic laminate of desired shade and design. |   |   |   |   |
|   | (c) The full height partition shall be WITH OR WITHOUT 8mm clear float glass with etching fixed as per drawing with 75mm x 12mm Teak wood jamb/chaowkhat around glass opening and 12mm x 12mm teak wood beading for fixing of glass on both sides. As per the direction of Engineer-in-charge and design. |   |   |   |   |
|   | (d) The work to include providing and fixing of partly glazed wooden door shutters using 35mm readymade ISI flush door shutter with 1.0mm thick laminate of desired shade and design as per drawing with teak wood frame of 75mm x 40mm. The door shall have 6mm thick teak wood lipping all around the edges. The door shall have vision panels with 8mm thick clear float glass with etching fixed with double 14mmx25mm thick teak wood moulding as per design. The exposed surface of wood shall be deco painted in desired shade. The door shall be complete in all respect with hardware handles, godrej 6-lever lock/night latch lock, door stoppers, 8" tower bolts, hinges, door closer etc all in brass. |   |   |   |   |
|   |   |   |   |   |   |
| 3 | LOW HEIGHT PARTITONS:UPTO 4'-6"HT. |   |   |   |   |
|   | Providing and fixing wooden low height partition with following specifications: |  16.00  | SQ.M |   |   |
|   | (a) Supporting system comprising of Dry wall Frame Work Boral/Rondo/Gyp. of 50mm x 50mm (18 Gauge) sqaure section@ max. 600mm c/c both horizontally and vertically. The frame shall be fixed rigidly at floor level and ceiling level wherever possible. The rate should also include necessary strengthening with additional members at doors and other openings. |   |   |   |   |
|   | (b) The partition shall have 9mm Plywood fixed on both sides with screws for the entire height of the partition and finished with approved 1.0mm Th. Laminate of desired shade and design on both sides. Wooden molding, lipping etc. as directed by Bank / architect shall be provided wherever required. The partition shall have skirting and intermediate bands finished with metallic laminate of desired shade and design. |   |   |   |   |
|   | (c) The low height partition shall have 12 mm thick glass with etching as per design fixed with stainless steel wall cladding profile (WCP) of Hettich /Godrej/Dorma/Ozone make at bottom and sides with top surface and other side free. All the edges of the 12mm glass shall be duly grinded/bevelled and polished. |   |   |   |   |
|   |   |   |   |   |   |
| 4 | 12MM THICK TOUGHENED GLASS FIXED PARTITIONS WITH ETCHING UPTO 9'-0" HT. |   |   |   |   |
|   | Providing and fixing in position 12mm clear float toughened Glass partition with patch fittings for the full height glass partitions as per the direction of the engineer-in-charge. The work to include making necessary template for all the glasses and then cutting the clear float glass to correct size, making all the necessary holes, cuts etc., then toughen the same.  |  12.00  | SQ.M |   |   |
|   | The cost to include all hardware (PATCH FITTINGS etc) required of Hettich /Godrej/Dorma or approved equivalent make viz., single corner patch, top and bottom corner patch etc. or as per the direction of the engineer-in-charge, along with etching with sand blasting as per design and drawing. The maximum size of each glass shall be 1200mm to 2000mm x 2400mm to 2700mm as per the site requirement. The rate is for a finished item of work etc., complete as directed. |   |   |   |   |
|   | The cost to include the cost of bevelling and smoothening of the exposed edges of the glass. |   |   |   |   |
|   |   |   |   |   |   |
|   |   |   |   |   |   |
| 5 | 12MM THICK TOUGHENED GLASS DOORS WITH ETCHING: |   |   |   |   |
|   | Providing and fixing in position 12mm clear float toughened Glass for naked glass door. The work to include making necessary template for all the glasses and then cutting the clear float glass to correct size, making all the necessary holes, cuts etc., and then toughening the same. The cost to include all hardware required viz., Hettich /Godrej/Dorma or approved equivalent make floor spring with its accessories, top pivot, center lock, 450mm glass door handles etc., along with etching with sand blasting as per design and drawing. The maximum size of each glass shall be as per the drawing or the direction of the Engineer-in-charge. The rate is for a finished item of work etc., complete as directed. |  5.00  | SQ.M |   |   |
|   |   |   |   |   |   |
| 6 | 12MM TOUGHENED GLASS FOR FRONT : |  5.50  | SQ.M |   |   |
|   | Providing and fixing 12 mm thick, clear plain toughened glass of approved pattern fixed in vertical position at counter front and as curved glass extension of low height partition as per drawing, fixed on wooden partitions with superior quality stainless steel patch fittings of Hettich /Godrej/ozone. An opening as per the drawing at the bottom for transaction shall be provided in case of glass in from of the transaction counter. All the edges of the glass shall be grinded/bevelled and polished. The glass shall also be etched as per the design. Glass area with maximum height shall be measured for the purpose of payment. The work shall be carried out as per drawings. |   |   |   |   |
|   |   |   |   |   |   |
| 7 | OFFICER’S TABLES WITHOUT SIDE CREDENZA |   |   |   |   |
|   | (a) Providing and fixing at site Officer’s table ( 10 mm thk. glass on table top with foam ) made of 19mm th. commercial block Ply (Green ( Eco- Tech ) / Century / Archid) with 1mm thick Laminate (Merino / Sunmica / Formica ) of desired shade and design on outer visible surfaces; single color on horizontal surface & two color on vertical surfaces. . The front of the table top shall be projected and curved as per drawing. Provision for 3” dia. Round/3” square stainless steel of grade 304 cable manager for computer / electrical cables at appropriate place, will be made in the top surface of the table. Esteem Biege wood lipping will be provided on all the edges of the table, including bottom touching the floor and the drawers.  |   |   |   |   |
|   | The counter shall have a wooden keyboard rest of size 600mm x 270mm made with 19mm ply fixed with sliding telescopic channels of Hettich /Godrej/Hettich make. The work shall also include provision of foot rest made with wooden member of section 3" x 5" along the leg space. |   |   |   |   |
|   | (b) There shall be provision of one storage cabinet 1'3" wide. The frame shall be made with 19mm thick commercial board. The cabinet shall have one lockable drawer running on side mounting drawer slides (channels) of Hettich /Godrej make & one cupboard with shutter beneath the drawer, made of 19mm thick commercial block board with 1mm thick laminate of desired shade and design on front face, handle / knob and magnetic catcher shall be provided on one side of the table as per layout. The sides of the drawer shall be made of 12mm thick plywood, bottom of 6mm thick plywood & front of 19mm thick block board.  |   |   |   |   |
|   | All other surfaces i.e. inside / leg space of table, inside of drawer / cupboard shall be provided with 0.8mm thick laminate of desired shade and design, and wood lipping / beading shall be PU polished with matching pigment/deco painted in desired colour. The table shall have a CPU ledge made of 19mm thick block board on one side, complete as per drawing. |   |   |   |   |
|   | OFFICER (1.52X0.76X0.76) |  7.00  | no. |   |   |
|   | BRANCH MANAGER (1.82X0.91X0.76) |  1.00  | no. |   |   |
|   |   |   |   |   |   |
| 8 | Cash counter 5'-0" X2'-9”X 2'-6"/3'-6” |   |   |   |   |
|   | Providing & fixing in position cash counter 5'-0" X2'-9”X 2'-6"/3'-6” ( 10 mm thk table top glass edge grinding)wide as per drawing comprising of the following -Working top made with 25mm thick plywood finished with 1mm thick laminate. Outside edges of the working top shall be provided with 1 1/4"x1" teak wood moulding finished with melamine polish. Inside edges will be provided with 1/2"x1" teakwood beading Patti with melamine polish. Vertical facia (Aron) made with 18mm thick plywood finished with 1 mm thick groove at the joint of laminates of two different shades of laminates. Vertical drop ( horizontal band) shall be provided on the facia below the working top made with 18mm thick plywood finished with 1mm thick laminate with finished with french polish. Drawer unit as per drawing shall be provided and each drawer should have vertical partition for keeping the currency notes multipurpose Godrej lock Facia of drawer unit shall be finished with 1mm laminate and all other shall be finished with white enamel paint. The drawers will be provided with handles (Stainless Steel finish) and channels as per approval of the Architect / Bank. Boxing as per drawing made with 12 mm thick plywood finished with synthetic enamel paint shall be provided below the table top for electrical conducting and at the bottom for the LAN cabling /telephone wire conduiting. The item to include all necessary hardware and fittings in Stainless Steel finish, lipping to all edges and making provision only for electrical fitting behind the front. Vertical drop and also in the 10"x10" boxing as shown in the drawing. 9" wide and 20 mm thick granite front top. Necessary beadings with matching melamine polish for the glass are to be provided as per drawing as directed. |  1.00  | Nos. |   |   |
|   |   |   |   |   |
|   |   |   |   |   |   |
|   | Note: The contractor to get the sample of the counter approved from the Architect before covering it with laminate without any extra cost. |   |   |   |   |
|   |   |   |   |   |   |
| 9 | SIDE CREDENZA 0.91 to 1.20 X 0.46 X 0.76 |   |   |   |   |
|   | Side credenza made of 19mm thick commercial ply frame and 6mm thick plywood on back side & 1mm thick laminate on top horizontal surface & one vertical visible side only, with teak wood lipping on all edges including bottom touching floor. The credenza will have drawer compartment 16” wide outer to outer, containing three drawers vertically running on side mounting drawer slides(channels) of Godrej/hettich make. The sides of the drawer shall be made of 12mm thick plywood, bottom of 6mm thick plywood & front of 19mm thick block board. The remaining part of the credenza will have cupboard with Overlapped shutters and one shelf. All the internal surfaces shall be finished with 0.8mm thick mica of desired shade and design and the exposed wood shall be deco painted/malamine polished in desired shade. |  5.00  | no. |   |   |
|   |   |   |   |   |   |
| 10 | LOW HEIGHT STORAGE CABINETS/BACK STORAGE: (0.76 HIGH) |   |   |   |   |
|   | (a) Providing and fixing storage cabinets of size 2'6" (High) x 16" (Deep) along the walls/partitions, as per interior drawings, using 19mm board for carcase, shutters, vertical and horizontal partitions, 6mm ply for the back and 1mm laminate of approved shade on vertical and horizontal visible surfaces. The shutters shall be overlapped on the carcase and shall be provided with Hettich /Godrej hinges. The width of the shutter shall be between 12" to 15" as per the site conditions. All the exposed edges of the board shall be provided with wooden lipping 19mm x 3mm, duly PU polished/deco painted in desired shade. The inner surface shall be provided with 0.8mm thick laminate of desired shade and design. The cabinet shall be complete with handles, knobs, locks and magnet catchers etc. to the satisfaction of the Architect/Engineer.  |  15.00  | RM |   |   |
|   |   |   |   |   |   |
| 11 | GYPSUM BOARD FALSE CEILING WITH STEPS: |   |   |   |   |
|   | Providing and fixing suspended false ceiling including steps and provision of cope lighting as per design with 12.5mm tapered edge Gypboard / 12mm thick Elephant Gypsum Board to the grid comprising of cold rolled galvanized metal section to the required line and level. The grid consisting of a perimeter channel fixed round the perimeter. The intermediate channel at 1200mm c/c in the one direction and the ceiling section at 450mm c/c in the other direction to be connected by a connecting clip. The grid to be suspended with an adjustable strap hanger.  |  90.00  | SQ.M |   |   |
|   | The grid to be suspended with an adjustable strap hanger at 1200mm c/c on both ways from the structural soffit using a soffit cleat and expandable bolts/fasteners Nut and bolts to be used to connect strap hangers to soffit cleats and for joining ends of channel sections together. The gypsum board layers to be screwed to the M/F ceiling sections with Gypboard drywall screws. Jointing and screw spotting are then carried out as per manufacturer’s standard recommendations. Perimeter Channels to be used around the cut outs for light fittings. A/C ducting etc. The work should be complete as per instructions of Architect or Engineer in charge including 2-3 coats of oil bound distemper , over a coat of primer. |   |   |   |   |
|   |   |   |   |   |   |
| 12 | GRID FALSE CEILING: |   |   |   |   |
|   | Silhouette Grid False Ceiling:- Providing and fixing in true horizontal level false ceiling grid system of Armstrong World Industries. The suspension system shall be the Armstrong Trulok Silhouette revealed profile grid system with 15mm wide flanges incorporating a 3mm or 6mm central recess color, black or white revealed. Silhouette main runners and cross tees to have mitered ends with “birds mouth “ notches to provide mitered cruciform junctions.  |  95.00  | SQ.M |   |   |
|   | Main runners to be spaced at 120mm c/c fixed by using 2mm per-straightened GI wire. Main tee, rotary stitched at every 1200mm c/c maximum and 1200mm cross tee at every 600mm c/c maximum and 600mm cross tee at every 1200mm c/c maximum and wall angle all-round the wall to form grid size of 600mm x 600mm and suspending the grid using 2mm per-straightened GI wire and 6mm nylon rawl plug at every 1200mm intervals at the main tee and laying of premier mineral fiber tiles manufactured by Armstrong World Industries of size 600mm x 600mm x 15mm over the formed grid etc., complete as per manufacturer's specifications. |   |   |   |   |
|   |   |   |   |   |   |
| 13 | Semi glazed wooden doors with frame :- WIDTH (2'-6” TO 3'-6”) |   |   |   |   |
|   | Providing & fixing of 35mm thick semi glazed flush type doors. Doors shall be finished with 1mm thick laminate of approved colour & make with 35 x 5mm steam beach wood beading on edges of door. The glass shall be 8mm thick clear float glass with edge polishing & round smoothenend exposed edges All accessories like the door stopper, heavy duty brass hinges, latch, handle, lock , door closer etc shall be part of the job. All teak wood members to have melamine spray polish finish. Rate to include cost of conveyance of all materials, labour charges etc. complete as directed. As per approved hardware list. |  4.00  | NO. |   |   |
|   |   |   |   |   |   |
| 14 | ACP SHEETS AT ENTRANCE  |   |  |  |  |
|   | Providing and fixing Aluminium Composite Panel (ALSTRONG/ ALUCOBOND/ ALSTONE ) wall cladding with the 4mm thick PVDF coated aluminium composite panel (ACP) (0.25 mm coil thick) with frame of aluminium channels (25 x 50 x 1.6mm), cleat angle (8 x 18 x 2mm) necessary hardware, backup material and weather sealant to make the joints leak proof. The spacing for the channel along the length and spacing of cleat on the perpendicular shall not be more than 600mm. The rate includes all required shuttering , scaffolding,labor,material. |  -  | SQ.M |   |   |
|   |   |   |   |   |   |
| 15 | WOODEN BOXING FOR ELECTRICAL PANEL 6'-0" X9'-0"X2'-0" |   |   |   |   |
|   | Providing & fixing of Electrical panel cabinate, made of 8mm thick bison panel both side for shutter. External side shall be finished with 1mm thick laminate(Merino / Sunmica / Formica )& internal side shall be finished with backlyte sheet . All accessories like ball catches, SS handle, Fixing MS powder cotted perforated jali shall be provided in shutter top & bottom etc. All internal frames 50mm x 25mm x 1.6mm thick section at maximum 2'-0" c/c. Complete as directed depth of cup board 1'-6". Measurement shall be based on area of front elevation of cupboard. The rate to include all materials, labour, transport, taxes, etc complete as directed. As per approved hardware list. |  1.00  | NO. |   |   |
|   |   |   |   |   |   |
| 16 | FIRE PROOF DOOR FRAME |   |   |   |   |
|   | Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. Sheet (zinc coating not less than 120 gm/sqm) duly filled with vermuculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumuscent fire seal strip of size 10x4 mm (minimum) al round the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (including Dash fastener). |  -  | Nos. |   |   |
|   | FIRE PROOF SHUTTER |   |   |   |   |
|   | Providing and fixing 50 mm thick glazed fire resistant door shutters conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/ m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in- charge (paneling to be paid for separately) |   |   |   |   |
|   | FIRE PROOF GLASS PANEL |   |   |   |   |
|   | Providing and fixing glazing in fire resistant door shutters, fixed panels, ventilators and partitions etc., with G.I. beading of appropriate size, made out of 20 SWG G.I. Sheet (zinc coating not less than 120 gm/ m2), fire resistant sealant, including applying a coat of approved fire resistant primer on G.I. beading etc., complete all as per direction of Engineer-in-charge. |   |   |   |   |
|   | With clear fire resistant glass panes 6 mm thick of approved brand, having minimum 60 minutes fire resistance |   |   |   |   |
|   |   |   |   |   |   |
| 17 | RECTANGULAR WRITING DESK WITH STORAGE WITH CUSTOMER AND COMPLAINT BOX AS PER DRGS. |   |   |   |   |
|   | Providing & fixing of Rectangular writing desk with provision of complaint and suggestion box , made of 18mm thick commercial plywood finished with 1 mm thick laminate on all sides including inside divisions. 12mm thick toughen glass Shelf shall be fixed of desk with bevelled and polished edges making different divisions by 12mm thick toughen glass for slips or forms as per detail drawing directed complete. The rate to include all materials, labour, transport, taxes, etc complete as directed. (Size: 4'-0" X 1'-0" X 3'-6"ht.) |  1.00  | NO. |   |   |
|   |   |   |   |   |   |
| 18 | TROPHY CASE 9'-0" HIGH FOR BRANCH MANAGER AS PER DRAWING. (9'-0"X1'-6" /2'-0"X 9'-0" ) |   |   |   |   |
|   | Providing and fixing trophy case using 18mm commercial Ply bottom , behind , Sides and top (Green ( Eco- Tech ) / Century / Archid) finished in 1.0 mm thick laminate of approved Shade, Max height of the case upto false ceiling bottom , behind , Sides and top and bottom out of commercial Ply (Green ( Eco- Tech ) / Century / Archid) and Laminate. 15" width of glass or wooden shelves of the case to be done using 10 mm thk. R polished glass in shelves (The Glass fixed with u brackets). Complete with closing of all joints and accessories complete in all respect as per direction of Engineer-In-Charge.  |  -  | NO. |   |   |
|   | Providing and fixing low height storage cabinets of size 2'6" (High) x 16" (Deep) along the walls, as per interior drawings, using 19mm board for carcase, shutters, vertical and horizontal partitions, 6mm ply for the back and 1.0 mm thick laminate of approved Shade on vertical and horizontal visible surfaces. The shutters shall be overlapped on the carcase and shall be provided with Hettich/Godrej hinges. The width of the shutter shall be between 12" to 15" as per the site conditions. All the exposed edges of the board shall be provided with wooden lipping 19mm x 3mm, duly PU polished/PU polish in desired shade. The inner surface shall be provided with 0.8mm thick laminate of desired shade and design. The cabinet shall be complete with handles, knobs, locks and magnet catchers etc. to the satisfaction of the Architect/Engineer.  |   |   |   |   |
| 19 | LOGO ( SIZE 2'-0” DIA ) |   |   |   |   |
|   | Providing and making Indian bank logo using 19mm Commercial Ply Board finished using 1mm thick laminate (blue high gloss mica). Base cost of laminate to be taken as Rs. 325/ sq. mt. complete with all hinges and hardware from Hettich or equivalent. Complete in all respect as per direction of Engineer-In-Charge.  |  2.00  | NO. |   |   |
|   |   |   |   |   |   |
| 20 | Providing and making conference table 14'-6"X3'-6”X2'-6" as per drawing with working top . Made up of 19mm Marine ply and finished with 1.0 mm thick laminate of approved Shade. PU polishing on teak wood lipping/margin etc complete as per design & drawing. (Note :- Making Provision for Pop-Up Box )  |  1.00  | NO. |   |   |
|   |   |   |   |   |   |
| 21 | TEXTURE PAINT including applying average 12mm to 15mm thick POP Punning over cement plaster in line & plumb finished smooth to receive paint. (Internal surfaces of walls).as per approved. Suggested Brand Asian Paints.  | 110.00  | SQM  |   |   |
| 22 | Old furniture adjustment  |  -  | lumpsum  |  (-)  |   |
|   |   |   |   |   |   |
|   | Total Value of Works |   |   |   |   |
|   |   |   |   |   |   |
|  | NOTE: GST SHALL BE PAID EXTRA |   |   |   |  |

|  |
| --- |
| **ESTIMATE FOR THE ELECTRICAL WORK OF INDIAN BANK BRANCH AT KARNAL (HR.)** |
| **S.No.** | **Item** | **Qty** | **Units** |  **Rate**  |  **Amount**  |
| **B** | **ELECTRICAL WORK** |   |   |   |   |
| **1** | **Point Wiring** |   |   |   |   |
|  | Supply all material, receiving, storing, fixing, laying wiring & testing the same for light, ceiling fan, exhaust fan, 6A socket; starting from the point control box to out let; using 1.5 sqmm copper conductor PVC insulated 1100V grade wiring cable in concealed system using 20/25/32 mm ISI marked PVC conduit including all conduit accessories like conduit bends, tees, draw boxes, fan hooks etc., where ever required, together with wiring accessories such as flush type modular & flush type sockets, point control boxes, PVC bushes for conduit ends, batten holders, chrome plated brass screws including 1 sqmm copper PVC insulated earth wire, identification ferrules at either ends, complete in all respect. Conduit being concealed either in ceiling/ wall chase or on surface, including making & filling chases with cement mortar & painting the surface conduit etc. complete as reqd. Rates include providing & fixing modular switches & sockets with switch boxes and plate etc. complete (Rates include 3x2.5 sq.mm copper conductor PVC insulated wiring laid in PVC pipe for circuit wiring). Wire Make: HAVELLS/KEI/ECKO/RR CABLE/Polycab only and Switch & socket make: Anchor/Crabtree/North-West/MK) |   |   |   |   |
| a) |  6 amp switch controlling single light/fan point  | 25 | NO |   |   |
| b) |  6 amp switch controlling the four down lighters OR Two 2x2 light fittings (No. of lights will be counted for calculation) | 22 | NO |   |   |
| c) | **15 Amp wiring** with 2.5mm sq. multi strand PVC copper wire & metal clad enclosure sockets & plus. | 6 | NO |   |   |
| d) | **5 Amp plug point** wiring with 1.5mm sq. multi stand PVC copper wire inc. Plate switches, sockets, plugs. Etc.  | 6 | NO |   |   |
| e) | **Call-bell point** wiring including Ding-dong bell with 1.5mm sq. multi strand PVC copper wire including plate switches, sockets, etc.  | 1 | NO |   |   |
| f) | **Signage wiring** (material & labour) – P&F of 3x4mm & copper flexible wire & PVC conduiting of ISI make complete with all accessories like Saddles, bends modular switches etc.  | 1 | NO |   |   |
| g) | **Electrical wiring for Air-Conditioning:**P / F 32 Amp wiring with MCB from D/B to site of outdoor and indoor A/C Unit, i.e. circuit wiring with 4mm sq. multi-strand PVC copper wire, earth wire with DP switches. | 8 | NO |   |   |
|  |   |   |   |   |   |
| **2** | **ELECTRICAL FITTINGS & FIXTURES** |   |   |   |   |
| a) | **Supply, Installation, testing and commissioning of 33-36 watt (2'X2') LED Light** above 100 lm/watt fitting complete including necessary connection from 2x1.5sq.mm copper wire in ceiling etc. as reqd.  | 36 | NO |   |   |
| b) | Supply, Installation, testing and commissioning of recess down lighter with assembly complete with **15watt LED Light** above 85 lm/watt including necessary connection from 2x1.5sq.mm copper wire in ceiling etc. as reqd.. | 15 | NO |   |   |
| c) | SITC of **18/20 watt LED Batten** above 90 lm/watt including necessary connection from 2x1.5sq.mm copper wire in ceiling etc. as reqd | 4 | NO |   |   |
| d) | SITC of **300 mm exhaust fans** complete with self opening louvers/shutters etc. complete with suitable wooden/iron frame as reqd | 4 | NO |   |   |
| e) | SITC of **400 mm sweep wall fan** etc. complete as reqd | 12 |  NO. |   |   |
| f) | **CEILING FAN:**- To provide and fix ISI make ceiling fan with regulator complete as reqd | 0 | NO |   |   |
| g) | **4.5/5 Watt LED strip light** for cove with Driver (M/s. Philips Wipro / Bajaj ) Complete in all respects. | 0 | RMT |   |   |
|   |   |   |   |   |   |
| **3** | **Main Cable** |  |  |  |   |
|   | **Provided and laying 3.5 x50 sq.mm.** aluminium conductor with 2 no. 8 SWG G.I. wire | 30 | mts |   |   |
| **4** | **Generator Connection** :-Provided and laying **3.5 x 25 sq.mm. aluminium conductor** with 2 no. 8 SWG G.I. wire | 45 | mts |   |   |
|  |   |   |   |   |   |
| **5** | Providing & fixing **Main electrical dist. Board** with all internal electrical and generator connections with 25 sq.mm multi strand copper wire, which shall include the following items. |  |  |  |   |
| a | Providing & fixing **3 No. 200 amp kitkats** (fuse carrier & base) with 1 no. neutral link on suitable size of backalite sheet of thickness not less than 6 mm etc. complete as reqd. | 3 | No. |   |   |
| b  | A cubical having 200 Amps TPN(Before bus bar) breaking current 20KA, 200 Amps 4 pole Bus Bar(Copper Tinned), voltmeter, ammeter & Digital power factor meter , three indicators, C.Ts. with selector switches & backup fuses (HRC type)  | 1 | No. |   |   |
| c | **200 Amps. Main switch MCCB.**  | 1 | No. |   |   |
| d | **Change –over 200 Amps.** 3-phase of Havells make.  | 1 | No. |   |   |
| e | **4 way** TPDB double door comprising of 1 no. incoming 100 amp isolator & 6 nos. 32 DPMCB (For AC's distribution) | 2 | No. |   |   |
| f | **4 way TPDB** double door comprising of 1 no. incoming 100 amp 4P isolator & 12 nos. 6/10Amp SPMCB (For Lighting and raw power distribution) | 2 | No. |   |   |
| g | **8 way MCBDB** double door in recessed wall including cutting of wall and making good the damages comprising of 1no. 63amp isolator and 6no. 6/10amp MCBs etc. complete as reqd.(For UPS's distribution) | 1 | No. |   |   |
| h | **ELCB :**-Supplying 40 Amp. earth leakage circuit breaker (ELCB )confirming to IS-12640 / 1988 & BS 4293 / 1983 having sensitivity 100 MA and breaking capacity of 10 KA and suitable for 3 Phase and neutral 415V having characteristic quick acting & tripping with all advance features & do not in-corporate any electronic component with suitable enclosure box. | 1 | No. |   |   |
| i | Design, Manufacture, Supplying and Commissioning Main LT Panel MS 4' X 4' double-door powder coated M.S. Distribution of 1.6mm thick MS sheet fabricated cubicle type with Danger Notice Board indicating sign (DANGER) in English, Hindi, Punjabi. , wall mounted fully recessed / partly recessed with dust proof hinged and lockable doors, brass cable glands for incoming and out going connections with inter connections with copper tapes /wires . | 1 | No. |   |   |
|   |   |   |   |   |   |
| **5** | **UPS PANEL** |   |   |   |   |
|   | **INCOMING** |   |   |   |   |
|   | 1 nos.63 Amp. MCCB 25 KA 3 Pole,  | 1 | no. |   |   |
|   | **OUT GOING FEEDER** |   |   |   |   |
|   | 2 No. 40 amp, 2 pole 2 way change over, 2 no. 40 amp MCB DP, 3 No. 16-32A MCB Including power coated MS cubical box of 16 Gauge sheet suitable size, internal wiring, Bus bar Se-leave RYB, necessary Misc. hardware, Knobs, Rubber Gas Ket, DMC Insulator & Terminal Block. |   |   |   |   |
|   |   |   |   |   |   |
| **6** | Providing and laying following sizes of **PVC insulated copper conductor** flexible wire of 1100V in flexible/solid PVC conduit etc. including making necessary connection complete as reqd.  |   |   |   |   |
| a) | **2x6 sq.mm with 1.5 sq. mm** copper PVC insulated earth wire **(For UPS input & output connections)** | 20 | per mtr. |   |   |
| **5** | **UPS POINTS:**  |   |   |   |   |
|   | P/L & testing electrical three point wiring /circuit wiring having individual circuits for computers with 2.5mm2 Multi-strand copper PVC wire in unbreakable PVC conduits 25mm dia wall thickness 2mm thick with specials under floor / wall & above false ceiling including chase cutting, disposal of malba away from the site and repair of the same with cement mortar, incl. Switches & socket M.S. switch boxes with rust proof treatment size to accommodate the required nos. of Modular switches, sockets etc. & plate type sockets with indicator three in one plate including earthing with 1.00 mm2 multi strand wire complete in all respect.  |   |   |   |   |
| a) | Set of 6 amp. 4 sockets & 4 switches  | 16 | pts |   |   |
| b) | Laying **PVC pipe 1" dia 2 mm wall thickness** for computer cabeling, computer in all respects and avoiding any exposure in customer lobby. | 90 | mtrs |   |   |
| **6** | **UPS supply to tube lights**: Point wiring / circuit wiring with 1.5mm sq. from D/B to switches & fittings multi strand PVC copper wire including plate switches, sockets, etc. (for payment no. of switches shall be counted). | 0 | no |   |   |
| **7** | **Data Cable:-** Data cabling work for computer networking starting from mounting rack at suitable position of banking hall with UTP CAT-6e LAN Data cable in 2mm thick 25 mm dia ISI mark PVC conduit with accessories such as bends, Tees, junction boxes including providing and fixing cat-6 I/O plates and SMB complete with all networking accessories etc complete as reqd., testing and ferruling (D-LinK/MOLEX/AMP/COMMSCOPE). Note: maximum 6 no. data cable must be run in one PVC pipe.  | 14 | pts. |   |   |
| a) | supply, installation, testing and commissioning of 24-port Patch Panel | 0.00 | no. |   |   |
| b) | supply, installation, testing and commissioning of mounted rack 15" height made of powder coated MS sheet  | 1.00 | no. |   |   |
| **8** | supply, installation, testing and commissioning of factory manufactured **CAT-6e patch chord**  complete with 2 no. connectors etc. complete as reqd. |   |   |   |   |
| a) | 1 mtr. Long | 14.00 | no. |   |   |
| b) | 2 mtr. long | 14.00 | no. |   |   |
| **9** | **TELEPHONE** Wiring for telephone points with 0.6 mm dia 2 pair insulated annealed tinned electrolatic copper conductor in 2 mm thick 25 mm dia ISI marked PVC conduit complete with accessories such as bends, junction boxes etc. with suitable size of PVC box modular plate and cover in front on surface or in recess including providing and fixing modular type telephone socket outlet and making necessary connections etc. complete as reqd. Wiring for telephone points with 0.6 mm dia 2 pair insulated annealed tinned electrolatic copper conductor in 2 mm thick 25 mm dia ISI marked PVC conduit complete with accessories such as bends, junction boxes etc. with suitable size of PVC box modular plate and cover in front on surface or in recess including providing and fixing modular type telephone socket outlet and making necessary connections etc. complete as reqd.  | 12 | pts. |   |   |
|   | **Tag Block :** Supply, Providing & installing 30 pair PVC Tag Block in hinged type complete as reqd. Tag Block : Supply, Providing & installing 50 pair PVC Tag Block in hinged type complete as reqd. | 1 | no |   |   |
|   |   |   |   |   |   |
| **10** |  **EARTHING** |   |   |   |   |
| a) | Supply and fix copper plate earth station with 600X600X3mm **copper plate** including all accessories such as watering pipe and funnel and providing masonry enclosure at top with cover plate | 1 | Sets |   |   |
|   |  i.e excavation of pit, supplying and filling of salt charcoal, refilling of pit etc complete as required as per IS 3043-1987. The voltage between neutral and earth must be below 1 V.  |   |   |   |   |
| b) | Supply and fix GI plate earth station with 600X600X6mm **GI plate** including all accessories such as watering pipe and funnel and providing masonry enclosure at top with cover plate i.e excavation of pit, supplying and filling of salt charcoal, refilling of pit etc complete as required as per IS 3043-1987.  | 2 | Sets |   |   |
| a) | Supply fixing and termination of 20X3 mm copper strip with earth station below ground level etc as required. | 5 | Meter |   |   |
| b) | Supply fixing and termination of 20X3 mm G.I strip with earth station below ground level etc as required. | 10 | Meter |   |   |
| a) | Providing and fixing of 8 SWG copper earth wire in the recess for loop earthing etc. as required. | 35 | Meter |   |   |
| b) | Providing and fixing of 8 SWG GI earth wire in the recess for loop earthing etc. as required. | 40 | Meter |   |   |
|   | Supply and laying following dia 2 mm in thickness PVC pipe under floor or in recessed walls from earth electrode to UPS room for computer dedicated earthing  |   |   |   |   |
|   | **25 mm diameter** | 45 | Meter |   |   |
| **11** | **Earth Box:** Providing and fixing suitable size of MS box fabricated with 16 S.W.G. MS sheet either in recess wall or on surface to accommodate dedicated earth from earth electrode and further distribution of earth to computer points including providing 5mm Bakelite sheet on base connector strip and painting of box etc complete as reqd. | 1 | Nos. |   |   |
| **12** | **Electrical wiring for UPS (charging point for UPS):**P / F 2 runs of 4mm sq. and one run of 1.5 sq. mm as earth wire multi-strand PVC copper wires from D/B to the location of UPS room for input to UPS in PVC pipe with DP’s or 15 Amp. Power plugs and sockets (2 sets: one for input and the other for output) . | 6 | Nos. |   |   |
| **13** | **AIR CONDITIONING WORK FOR SPLIT AC's** |  |  |  |   |
|   | Supplying & Laying of following COPPER REFRIGERANT PIPING Thickness 22 SWG For Hiwall Split AC complete with fittings Suction / Discharge line insulated with 12 mm SUPERLON / ARMAFLEX suction line. Multi-runs between Indoor & Outdoor units shall be considered as ONE length for the purpose of measurement. |   |   |   |   |
| a | **1/4" + 1/2" Refrigerant** piping - For Hiwall Split AC's (FOR 1TR TO 1.5 TR) | 60 | Meter |   |   |
| b | 5/8" & 3/8" dia. Copper refrigerant pipe - For Hiwall Split AC's (FOR 2.0 TR) | 0 | Meter |   |   |
| **14** | Supplying & laying recessed in wall Rigid ISI Mark **PVC drain pipe of size 20mm dia** complete with fittings, U traps etc. & as specified to the nearest toilet / drain point under floor or in recessed walls for AC drains including cutting of walls, bends & Tees. making good the damages etc. wherever required.  | 90 | Meter |   |   |
| **15** | Supplying & laying of **Eletrical flexible cable of 3x2.5sq.mm** multi strand suitable for 1.5 Tr H.W Split & 1.00 Tr H.W Split unit between Indoor & Outdoor units shall be considered as ONE length for the purpose of measurement. | 70 | Meter |   |   |
| **16** | Light Points with **CFL & bulb holder**  provided for security purpose of outside the branch . Light pt. covered with jalli & fixed ceiling or wall as per site | 3 | No. |   |   |
|   | **TOTAL OF ELECTRICAL WORK** |   |   |   |  |

 