

**TENDER REF.: LUC/GOR/RBO I/2024-25/EE/03**

# **STATE BANK OF INDIA**

**ELECTRICAL INSTALLATION WORKS AT STATE BANK OF INDIA, MOTI-  
RAM ADDA BRANCH (65081), RBO-II GORAKHPUR, AO GORAKHPUR,  
DISTRICT GORAKHPUR (U.P.)**

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**Tender Documents Consisting of:**

**NIT, General Rules and Instruction for the Guidance of Tenderer,  
Form of Tender, Articles of Agreement, General Conditions  
of Contract, Technical Specifications and  
Bill of Quantities**

**E-mail**

**The Regional Manager  
Regional Business Office -II  
AO, Gorakhpur  
: agmr2.zogor@sbi.co.in**

# STATE BANK OF INDIA

## NOTICE INVITING TENDER

State Bank of India (SBI) invites e-tenders from the contractors empanelled under electrical work category ED (**Category – II, III, IV, V**) for electrical installation works at State Bank of India, **Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur**. Details of tenders are as under :

1. Name of Work : Electrical Installation Works at State Bank of India, **MotiramAdda Branch (65081) under RBO-II, AO Gorakhpur**.
2. Time allowed for completion : **20 calendar days** from the date of issue of Work Order/ handing over of site.
3. Earnest Money Deposit : **Rs.5,700.00 (Rupees five thousand seven hundreds only)/ EMD exemption may given to MSME firms on submission of valid supporting documents.**
4. Security Deposit : As per clause No. 6.1, Page 4 of Instructions to the Tenders)
5. Additional Security Deposit (ASD) :
  - i. ASD/APG shall be applicable if the bid price is below 7.5% of the estimated cost.
  - ii. The amount of such ASD/APG shall be the difference between 92.5% of the estimated cost put to tender and the quoted price.
  - iii. Vendor will have to submit Bank guarantee or FDR receipt favouring SBI but drawn on any other Nationalised Bank may also be accepted as ASD/APG
- 6.
7. Availability of Tender Documents : Tender document is available on e-tendering portal <https://tenderwizard.com/SBIETENDER>
8. Last date and time of receipt of tenders : **31.08.2025 up to 04:00 P.M.**
9. Address at which the tenders are to be submitted : **The Regional Manager  
State Bank of India  
Regional Business Office - II  
AO Gorakhpur**
10. Date and time for opening of e-tenders : **01.09.2025 up to 11:00 A.M.**
11. Place of opening tenders : **The Regional Manager  
State Bank of India  
Regional Business Office – II  
AO Gorakhpur**

12. Defects Liability Period : 12 months
13. Validity of offer : 3 (Three) months from the date of opening of price bid of tender.
14. Liquidated Damages : 0.5% per week subject to a maximum of 5% of contract value.
15. Cover-I (Technical bid) : to be submitted online/hard copy.  
a) **copy of empanelment letter ED category**  
b) **All tender pages duly stamped and signed**
- Cover-II (Price bid) : to be filled online through <https://tenderwiz-ard.com/SBIETENDER>
16. Service Provider : **M/s. Antares Systems Limited.**  
BD-52A, Rabindrapally, Kestopur, Near Frank Ross Pharmacy (Behind IDBI Bank) Kolkata – 700101 Contact - Mr. Kushal Bose 07686913157 / 09674758719  
E-mail: [kushal.b@antaressystems.com](mailto:kushal.b@antaressystems.com)
- 17 SBI reserves its rights to accept/reject any/all tender without assigning any reasons whatsoever and to increase or decrease the quantities of any item and contractor has to execute the same at the rate quoted and no correspondence shall be entertained in this regard. Bank is not responsible for any postal delay in submission of technical bid hard copy.

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For and behalf of State Bank of India

## INSTRUCTIONS TO THE TENDERERS

### 1.0 Scope of Work

e-Tenders are invited by Assistant General Manager (P&E) on behalf of **Regional Business Office – II, AO Gorakhpur**, State Bank of India for Electrical installation works at **State Bank of India, Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur**.

### 1.1 Site and Its Location

The proposed work is to be carried out at **Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur**

### 2.0 Tender Documents

- 2.1 The work has to be carried out strictly according to the conditions stipulated in tender consisting the following documents and the most workman like manner,

Instructions to tenderers  
General Conditions of Contract  
Special Conditions of Contract  
Additional Conditions for Electrical Installation  
Technical Specifications  
Drawings  
Priced Bid

- 2.2 The above documents shall be taken as complementary and mutually explanatory of one another but in case of ambiguities or discrepancies, shall take precedence in the order given below :

- a) Price Bid
- b) Technical Specifications
- c) Additional Conditions for Electrical Installation
- d) Special Conditions of Contract
- e) General Conditions of Contract
- f) Instructions to Tenderers

- 2.3 Complete set of tender documents are available from Bank's website <https://bank.sbi> and <https://tenderwizard.com/SBIETENDER>

- 2.4 The tender documents are not transferable.

### 3.0 Site Visit

- 3.1 The tenderer must obtain himself on his own responsibility and his own expenses all information and data which may be required for the purpose of filling this tender document and enter into a contract for the satisfactory performance of the work. The Tenderer is requested to satisfy himself regarding the availability of water, power, transport and communication facilities, the character quality and quantity of the materials, labour, the law and order situation, climatic conditions local authorities requirement, traffic regulations etc;

The tenderer will be fully responsible for considering the financial effect of any or all the factors while submitting his tender.

### 5.0 Initial Security Deposit

The successful tenderer will have to submit a sum equivalent to 2% of contract value less EMD by means of D/D drawn in favour of **The Regional Manager (RBO-II)**, State Bank of India, payable at **Gorakhpur** within a period of 15 days of acceptance of tender.

#### **6.0 Security Deposit**

6.1 Total security deposit shall be 5% of contract value. Out of this 2% of contract value is in the form of initial security deposit which includes the EMD. Balance 3% shall be deducted from the running account bill of the work at the rate of 10% of the respective running account bill i.e. deduction from each running bill account will be 10% till total 3% of contract value is reached. 50% of the total security shall be paid to the contractors on the basis of architect's certifying the virtual completion. The balance 50% would be paid to the contractors after the defects liability period as specified in the contract.

6.2 No interest shall be paid to the amount retained by the Bank as Security Deposit.

#### **7.0 Signing of Contract Documents**

The successful tenderer shall be bound to implement the contract by signing an agreement and conditions of contract attached herewith within 15 days from the receipt of intimation of acceptance of his tender by the Bank. However, the written acceptance of the tender by the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered into or not.

#### **8.0 Completion Period**

Time is essence of the contract. The work should be completed in all respects in accordance with the terms of contract within a period of **15 calendar days** from the date of handing over site.

#### **9.0 Validity of Tender**

Tenders shall remain valid and open for acceptance for a period of 3 (Three) months from the date of opening price bid. If the tenderer withdraws his/her offer during the validity period or makes modifications in his/her original offer which are not acceptance to the Bank without prejudice to any other right or remedy the Bank shall be at liberty to forfeit the EMD.

#### **10.0 Liquidated Damages**

The liquidated damages shall be 0.5% per week subject to a maximum of 5% of contract value.

#### **11.0 Rates and Prices**

##### **11.1 In case of item rate tender**

11.1.1 The tenderers shall quote their rates for individual items both in words and figures in case of discrepancy between the rate quoted in words and figures the unit rate quoted in words will prevail. If no rate is quoted for a particular item the contractor shall not be paid for that item when it is executed.

The amount of each item shall be calculated and the requisite total is given. In case of discrepancy between the unit rate and the total amount calculated from multiplication of unit rate and the quantity the unit rate quoted will govern and the amount will be corrected.

11.1.2 The tenderers need not quote their rates for which no quantities have been given. In case the tenderers quote their rates for such items those rates will be ignored and will not be considered during execution.

11.1.3 The tenderers should not change the units as specified in the tender. If any unit is changed the tenders would be evaluated as per the original unit and the contractor would be paid accordingly.

The tenderer should not change or modify or delete the description of the item. If any discrepancy is observed he should immediately bring to the knowledge of the Architect/ Bank.

11.1.4 Each page of the BOQ shall be signed by the authorized person and cutting or overwriting shall be duly attested by him.

11.1.5 Each page shall be totaled and the grand total shall be given.

11.1.6 The rate quoted shall be firm and shall include all costs, allowances, taxes, levies, etc. but excluding GST, which will be paid to the contractor separately on submission of Bill/Documents for onward payment to the Government Goods & Services Tax Department.

FORM OF TENDER ( To be filled up by the Tenderer )

**The Regional Manager**  
**State Bank of India**  
**Regional Business Office - II**  
**Gorakhpur - 273016.**

Dear Sir,

**Re : Electrical renovation Works at State Bank of India, *Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur***

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1. I/We refer to the tender notice issued by your service provider **M/s. Antares Systems Limited** on your behalf for Electrical Installation Works related to Interior Decoration Work at ***Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur.***
2. I/We do hereby offer to perform, provide, execute, complete and maintain the works in conformity with the drawings, conditions of contract, specifications, bill of quantities for the sum of Rs. ...., at the respective rates quoted in the bill of quantities in the tender.
3. I/We have satisfied myself/ourselves as to the site conditions, examined the drawings and all aspects of the tender conditions. Subject to above, I/We do hereby agree, should this tender be accepted in whole or in part, to :
  - a) Abide by and fulfill all the terms and provisions of the said conditions annexed hereto;
  - b) Complete the works within **15 calendar days**, as per the work programme enclosed with the tender in two or three shifts if considered necessary by the Owner/Architects at no extra cost to the Owner.
4. I/We have deposited the Initial Security Deposit money 2% of **the contract amount (as per para-2)** in the form of Bank Draft/Pay Order/Banker's Cheque. I/We note, the Earnest Money Deposit/ ISD will not bear any interest and is liable for forfeiture :
  - i) If our offer is withdrawn within the validity period of acceptance.  
Or
  - ii) If the Contract is not executed within 15 days from the date of receipt of the letter of acceptance.  
Or
  - iii) If the work is not commenced within 14 days after issue of work order.
5. I/We understand that you are not bound to accept the lowest or any tender you receive.
6. Name of Partners/Directors of our Firm :
  - i)
  - ii)
  - iii)

iv)

Yours faithfully

Signature \_\_\_\_\_

Name of Partner/Director of the firm authorized to sign or Name of person having power of attorney to sign the contract (Certified true copy of Power of Attorney should be attached)

Designation

Signature and address of witness

a) Signature : \_\_\_\_\_

Name : \_\_\_\_\_

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

b) Signature : \_\_\_\_\_

Name : \_\_\_\_\_

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



## **GENERAL CONDITIONS OF CONTRACT**

### **1.0 Definitions**

"Contract" means the documents forming the tender and the acceptance thereof and the formal agreement executed between State Bank of India (Client) and the contractor, together with the documents referred therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Architects/Bank and all these documents taken together shall be deemed to form one contract and shall be complementary to one another.

1.1 In the contract the following expressions shall, unless the context otherwise requires, have the meaning hereby respectively assigned to them.

1.1.1 'SBI' shall mean State Bank of India (client) a body Corporate created under State Bank of India Act 1955, having its Corporate Centre at State Bank Bhavan, Madame Cama Road, Mumbai 400 021 and a LHO at Lucknow and includes the client's representatives, successors and assigns.

1.1.2 'Site Engineer' shall mean an Engineer appointed by the Bank as their representative to give instructions to the contractors.

1.1.3 'The Contractor' shall mean the individual or firm or company whether incorporated or not, undertaking the works and shall include legal personal representative of such individual or the composing the firm or company and the permitted assignees of such individual or firms of company.

The expression 'works' or 'work' shall mean the permanent or temporary work described in the 'Scope of Work' and/or to be executed in accordance with the contract and includes materials, apparatus, equipment, temporary supports, fittings and things of all kinds to be provided, the obligations of the contractor hereunder and work to be done by the contractor under the contract.

1.1.4 'Engineer' shall mean the Bank Engineer.

1.1.5 'Drawings' shall mean the drawings prepared by the Architects and issued by the Engineer and referred to in the specifications and any modifications of such drawings as may be issued by the Engineer from time to time 'Contract value shall mean the value of the entire work as stipulated in the letter of acceptance of tender subject to such additions thereto or deductions there from as may be made under the provision herein after contained.

1.1.6 'Specifications' shall mean the specifications referred to in the tender and any modifications thereof as may time to time be furnished or approved by the SBI "Month" means calendar month.

1.1.7 "Week" means seven consecutive days.

1.1.8 "Day" means a calendar day beginning and ending at 00 Hrs and 24 hrs respectively.

## CLAUSE

### 1.0 **Total Security Deposit**

Total Security deposit comprise of :

Earnest Money Deposit  
Initial Security Deposit  
Retention Money

#### a) **Earnest Money Deposit**

The tenderer shall furnish EMD as per NIT in the form of Demand Draft drawn in favour of **The Regional Manager (RBO-II)**, State Bank of India, payable at **Go-rakhpur** on any Scheduled Bank. No tender shall be considered unless the EMD is so deposited in the required form. No interest shall be paid on this EMD. The EMD of the unsuccessful tenderer shall be refunded soon after the decision to award the contract is taken without interest. The EMD shall stand absolutely forfeited if the tenderer revokes his tender at any time during the period when he is required to keep his tender open acceptance by the SBI or after it is accepted by the SBI the contractor fails to enter into a formal agreement or fails to pay the initial security deposit as stipulated or fails to commence the work within the stipulated time.

#### b) **Initial Security Deposit (ISD)**

The amount of ISD shall be 2% of accepted value of tender including the EMD. Balance of ISD (i.e. excluding EMD) is to be submitted in the form of D/D drawn on any scheduled Bank and shall be deposited within 15 days from the date of acceptance of tender.

#### c) **Retention Money**

Besides the ISD as deposited by the contractor in the above said manner the retention money shall be deducted from the running account bill at the rate of 10% of the gross value of work done by the contractor and claimed in each bill provided the total security deposit i.e. the ISD plus Retention Money shall both together not exceed 5% of the contract value. 50% of the total security deposit shall be refunded to the contractor without any interest on issue of Virtual Completion certificate by the SBI. The balance 50% of the total security deposit shall be refunded to the contractors without interest within fifteen days after the end of defects liability period provided the contractor has satisfactorily attended to all defects in accordance with the conditions of contract including site clearance and obtained 'No complaints' certificate from the Bank.

### 2.0 **Language**

The language in which the contract documents shall be drawn shall be in English.

### 3.0 **Errors, Omissions and Discrepancies**

In case of errors, omissions and/or disagreement between written and scaled dimensions on the drawings or between the drawings and specifications etc, the following order shall apply.

- i) Between scaled and written dimension (or description) on a drawing, the latter shall be adopted.
- ii) Between the written or shown description or dimensions in the drawings and the corresponding one in the specification the former shall be taken as correct.
- iii) Between written description of the item in the specifications and descriptions in bills of quantities of the same item, the latter shall be adopted.
- iv) In case of difference between rates written in figures and words, the rate in words shall prevail.
- v) Between the duplicate/subsequent copies of the tender, the original tender shall be taken as correct.

#### 4.0 **Scope of Work**

The contractor shall carry out, complete and maintain the said work in every respect strictly in accordance with this contract and with the directions of and to the satisfaction of the Bank to be communicated through the SBI. at the directions of the Bank from time to time issue further drawings and/or written instructions, details directions and explanations which are hereafter collectively referred to as Engineer instructions in regard to : the variation or modification of the design, quality or quantity of work or the addition or omission or substitution of any work, any discrepancy in the drawings or between the BOQ and/or drawings and/or specifications, the removal from the site of any material brought thereon by the contractor and the substitution of any other materials thereof, the demolition, removal and/or re-execution of any work executed by him, the dismissal from the work of any person employed/engaged thereupon.

#### 5.0 i) **Letter of Acceptance**

Within the validity period of the tender the Bank shall issue a letter of acceptance by registered post or otherwise depositing at the address of the contractor as given in the tender to enter into a Contract for the execution of the work as per the terms of the tender. The letter of acceptance shall constitute a binding contract between the SBI and the contractor.

#### ii) **Contract Agreement**

On receipt of intimation of the acceptance of tender from the SBI/Architect the successful tenderer shall be bound to implement the contract and within fifteen days thereof he shall sign an agreement in a non-judicial stamp paper of appropriate value.

#### 6.0 **Ownership of drawings**

All drawings, specifications and copies thereof furnished by the SBI are the properties of the SBI. They are not to be used on other work.

#### 7.0 **Detailed drawings and instructions**

The SBI shall furnish with reasonable promptness additional instructions by means of drawings or otherwise necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the contract documents, true developments thereof and reasonably inferable there from.

The work shall be executed in conformity therewith and the contractor prepare a detailed programme schedule indicating therein the date of start and completion of various activities on receipt of the work order and submit the same to the SBI.

#### **8.0 Copies of Agreement**

Two copies of agreement/tender document duly signed by both the parties with the drawings shall be handed over to the contractors.

#### **9.0 Liquidated Damages**

If the contractor fails to maintain the required progress in terms of clause 30 of GCC or to complete the work and clear the site including vacating their office on or before the contracted or extended date or completion without justification in support of the cause of delay, he may be called upon without prejudice to any other right of remedy available under the law to the SBI on account of such breach to pay a liquidated damages at the rate of 0.5% of the contract value per week subject to a maximum of 5% of the contract value.

#### **10.0 Materials, Appliances and Employees**

Unless or otherwise specified the contractor shall provide and pay for all materials, labour, water, power, tools, equipment transportation and any other facilities that are required for the satisfactory execution and completion of the work. Unless or otherwise specified all materials shall be new and both workmanship and materials shall be best quality. The contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him. Workman whose work or behavior is found to be unsatisfactory by the SBI he shall be removed from the site immediately.

#### **11.0 Permits, Laws and Regulations**

Permits and licenses required for the execution of the work shall be obtained by the contractor at his own expenses. The contractor shall give notices and comply with the regulations, laws, ordinances rules, applicable to the contractor. If the contractor observes any discrepancy between the drawings and specifications, he shall promptly notify the SBI in writing. If the contractor performs any act which is against the law, rules and regulations he shall meet all the costs arising therefrom and shall indemnify the SBI any legal actions arising there from.

#### **12.0 Setting out Work**

The contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions, and alignment of all parts thereof and get it approved by the SBI/SBI before proceeding with the work. If at any time any error in this respect shall appear during the progress of the works, irrespective of the fact that the layout had been approved by the SBI the contractor shall be responsible for the same and shall at his own expenses rectify such error, if so, required to satisfaction of the SBI.

#### **13.0 Protection of works and property**

The contractor shall continuously maintain adequate protection, of all his work from damage and shall protect the SBI's properties from injury or loss arising in connection with contract. He shall make good any such damage, injury, loss due to his fault or negligence except which are due to causes beyond his control.

He shall take adequate care and steps for protection of the adjacent properties. The contractor shall take all precautions for safety and protection of his employees on the works and shall comply with all applicable provisions of Government and local bodies safety laws and building codes to prevent accidents, or injuries to persons or property of about or adjacent to his place of work. The contractor shall take insurance covers as per clause 24.0 at his own cost. The policy may taken in joint names of the contractors and the SBI and the original policy may be lodged with the SBI.

#### **14.0 Inspection of Work**

The SBI or their representatives shall at all reasonable time have free access to the work site and/or to the workshop, factories or other places where materials are lying or from where they are obtained and the contractor shall give every facility to the SBI for inspection and examination and test of the materials and workmanship. No person unless authorized by the SBI shall be allowed on the work at any time.

#### **15.0 Assignment and subletting**

The whole of work included in the contract shall be executed by the contractor and he shall not directly entrust and engage or indirectly transfer assign or underlet the contract or any part or share thereof or interest therein without the written consent of the SBI and no undertaken shall relieve the contractor from the responsibility of the contractor from active superintendence of the work during its progress.

#### **16.0 Quality of Materials, Workmanship & Test**

All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with SBI/SBI instructions and shall be subject from time to time to such tests as the SBI may direct at the place of manufacture or fabrication or on the site or an approved testing laboratory. The contractor shall provide such assistance, instruments, machinery, labour and materials as are normally required for examining measuring sampling and testing any material or part of the work before incorporation in the work for testing as may be selected and required by the SBI/SBI.

#### **ii) Samples**

All samples of adequate numbers, size, shades & pattern as per specifications shall be supplied by the contractor without any extra charges. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at the site detailed literature/test certificate of the same shall be provided to the satisfaction of the SBI. Before submitting the sample/literature the contractor shall satisfy himself that the material/equipment for which he is submitting the samples/literature meet with the requirement of tender specification. Only when the samples are approved in writing by the SBI the contractor shall proceed with the procurement and installation of the particular material/equipment. The approved samples shall be signed by the SBI for identification and shall be kept on record at site office until the completion of the work for inspection/comparison at any time. The SBI shall take reasonable time to approve the sample. Any delay that might occur in approving the samples for reasons of its not meeting the specifications or other discrepancies inadequacy in furnishing samples of best qualities from various manufacturers and such other aspects causing delay on the approval of the materials/equipments etc shall be to the account of the contractor.

iii)

**Cost of tests**

- a) Test provided for in the specifications or BOQ :

The cost of making any test shall be borne by the contractor

- b) Test not provided for in the Specifications or BOQ :

If any test is ordered by the SBI which is either to be carried out by an independent person at any place other than the site or the place of manufacture or fabrication of the materials tested or any Government/approved laboratory, then the cost of such test shall be borne by the contractor.

**17.0 Obtaining Information related to execution of work**

No claim by the contractor for additional payment shall be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the work nor any misunderstanding or the obtaining incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfillment of contract.

**18.0 Contractor's superintendence**

The contractor shall give necessary personal superintendence during the execution of the works and as long, thereafter, as the SBI may consider necessary until the expiry of the defects liability period, stated hereto.

**19.0 Quantities**

- i) The bill of quantities (BOQ) unless or otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard Method of Measurements and quantities. The rate quoted shall remain valid for variation of quantity against individual item to any extent subject to maximum variation of the contract value by 25%. All the amount paid under Clause 20 hereof as well as amounts of prime cost and provisional sums, if any, shall be excluded.
- ii) Variation exceeding 25% : The items of work executed in relation to variation exceeding 25% shall be paid on the basis of provisions of clause 22(e) hereof.

**20.0 Works to be measured**

The SBI time to time intimate to the contractor that he required the work to be measured and the contractor shall forthwith attend or send a qualified representative to assist the Engineer in-charge in taking such measurements and calculation and to furnish all particulars or to give all assistance required by any of them. Such measurements shall be taken in accordance with the Mode of measurements detailed in the specifications. The contractor or his authorized representative shall sign all the pages of the measurement book in which the measurements have been recorded in token of his acceptance. All the corrections shall be duly attested by both representatives. No over writings shall be made in the M book. Should the contractor not attend or neglect or omit to depute his representative to take measurements then the measurements recorded by the representative of the Engineer in-charge. All authorized extra work, omissions and all variations made shall be included in such measurements.

**21.0 Variations**

No alteration, omission or variation ordered in writing by the SBI shall vitiate the contract. In case the SBI thinks proper at any time during the progress of works to make any alteration in, or additions to or omission from the works or any alteration in the kind or quality of the materials to be used therein, the SBI shall give notice thereof in writing to the contractor or shall confirm in writing within seven days of giving such oral instructions the contractor shall alter to, add to, or omit from as the case may be in accordance with such notice but the contractor shall not do any work extra to or make any

alteration or additions to or omissions from the works or any deviation from any of the provisions of the contract, stipulations, specifications or contract drawings without previous consent in writing of the SBI and the value of such extras, alterations, additions or omissions shall in all cases be determined by the SBI/SBI and the same shall be added to or deducted from the contract value, as the case may be.

## **22.0 Valuation of Variations**

No claim for an extra shall be allowed unless it shall have been executed under the authority of the SBI as herein mentioned. Any such extra is herein referred to as authorized extra and shall be made in accordance with the following provisions.

- a)
  - i) The net rates or prices in the contract shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced herein.
  - ii) Rates for all items, wherever possible should be derived out of the rates given in the priced BOQ.
- b) The net prices of the original tender shall determine the value of the items omitted, provided if omissions do not vary the conditions under which any remaining items of works are carried out, otherwise the prices for the same shall be valued under sub clause (c) hereunder.
- c) Where the extra works are not of similar character and/or executed under similar conditions as aforesaid or where the omissions vary the conditions under which any remaining items or works are carried out, then the contractor shall within 7 days of the receipt of the letter of acceptance inform the SBI of the rate which he intends to charge for such items of work, duly supported by analysis of the rate or rates claimed and the SBI shall fix such rate or prices as in the circumstances in his opinion are reasonable and proper, based on the market rate.
- d) Where extra work cannot be properly measured or valued the contractor shall be allowed day work prices at the net rates stated in the tender of the BOQ or, if not, so stated then in accordance with the local day work rates and wages for the district; provided that in either case, vouchers specifying the daily time (and if required by the SBI) the workman's name and materials employed be delivered for verifications to the SBI at or before the end of the week following that in which the work has been executed.

- e) It is further clarified that for all such authorized extra items where rates cannot be derived from the tender, the contractor shall submit rates duly supported by rate analysis worked on the "market rate basis" for material, labour, hire/running charges of equipment and wastages etc plus 15% towards establishment charges, contractor's overheads and profit. Such items shall not be eligible for escalation.

#### 23.0 **Final Measurement**

The measurement and valuation in respect of the contract shall be completed within one month of the virtual completion of the work.

#### 24.0 **Virtual Completion Certificate (VCC)**

On successful completion of entire works covered by the contract to the full satisfaction of the SBI, the contractor shall ensure that the following works have been completed to the satisfaction of the SBI.

- a) Clear the site of all scaffolding, wiring, pipes, surplus materials, contractor's labour, equipment and machinery.
- b) Demolish, dismantle and remove the contractor's site office, temporary works, structures including labour sheds/camps and constructions and other items and things whatsoever brought upon or erected at the site or any land allotted to the contractor by the SBI and not incorporated in the permanent works.
- c) Remove all rubbish, debris etc from the site and the land allotted to the contractor by the SBI and shall clear, level and dress, compact the site as required by the SBI.
- d) Shall put the SBI in undisputed custody and possession of the site and all land allotted by the SBI.
- e) Shall hand over the work in a peaceful manner to the SBI.
- f) All defects/imperfections have been attended and rectified as pointed out by the SBI to the full satisfaction of SBI.

Upon the satisfactory fulfillment by the contractor as stated above, the contractor shall be entitled to apply to the SBI for the certificate. If the SBI is satisfied of the completion of the work, relative to which the completion certificate has been sought, the SBI shall within fourteen (14) days of the receipt of the application for virtual completion certificate, issue a VCC in respect of the work for which the VCC has been applied.

This issuance of a VCC shall be without prejudice to the SBI's rights and contractor's liabilities under the contract including the contractor's liability for defects liability period nor shall the issuance of VCC in respect of the works or work at any site be construed as a waiver of any right or claim of the SBI against the contractor in respect of works or work at the site and in respect of which the VCC has been issued.

#### 25.0 **Work by other agencies**



The SBI/SBI reserves the rights to use premises and any portion of the site for execution of any work not included in the scope of this contract which it may desire to have carried out by other persons simultaneously and the contractor shall not only allow but also extend reasonable facilities for the execution of such work. The contractor however shall not be required to provide any plant or material for the execution of such work except by special arrangement with the SBI. Such work shall be carried out in such manners not to impede the progress of the works included in the contract.

## **26.0 Insurance of Works**

26.1 Without limiting his obligations and responsibilities under the contract the contractor shall insure in the joint names of the SBI and the contractor against all loss or damages from whatever cause arising other than the excepted risks, for which he is responsible under the terms of contract and in such a manner that the SBI and contractor are covered for the period stipulated in clause 28 of GCC and are also covered during the period of maintenance whatever cause for any loss or damage occasioned by the contractor in the course of any operations carried out by him for the purpose of complying with his obligations under following clause.

- a) The works for the time being executed to the estimated current Contract value thereof, or such additional sum as may be specified together with the materials for incorporation in the works at their replacement value.
- b) The constructional plant and other things brought on to the site by the contractor to the replacement value of such constructional plant and other things.
- c) Such insurance shall be effected with an insurer and in terms approved by the SBI which approval shall not be unreasonably withheld and the contractor shall whenever required produce to the SBI the policy of insurance and the receipts for payment of the current premiums.

## **26.2 Damage to persons and property**

The contractor shall, except if and so far as the contract provides otherwise indemnify the SBI against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and maintenance of the works and against all claims proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation of damages for or with respect to :

- a) The permanent use or occupation of land by or any part thereof.
- b) The right of SBI to execute the works or any part thereof, on, over, under, in or through any lands.
- c) Injuries or damages to persons or properties which are unavoidable result of the execution or maintenance of the works in accordance with the contract.

- d) Injuries or damage to persons or property resulting from any act or neglect of the SBI, their agents, employees or other contractors not being employed by the contractor or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the SBI, their employees, or agents or other employees, or agents or other contractors for the damage or injury.

**26.3 Contractor to indemnify SBI**

The contractor shall indemnify the SBI against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision sub-clause 26.2 of this clause.

**26.4 Contractor's superintendence**

The contractor shall fully indemnify and keep indemnified the SBI against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claim made under or action brought against SBI in respect of such matters as afore-said the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expenses to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the SBI if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the SBI in this behalf.

**26.5 Third Party Insurance**

- 26.5.1 Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under clause 26.0 of GCC shall insure against his liability for any material or physical damage, loss, or injury which may occur to any property including that of SBI, or to any person, including any employee of the SBI, by or arising out of the execution of the works or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to clause 26.0 thereof.

**26.5.2 Minimum Amount of Third Party Insurance**

Such insurance shall be effected with an insurer and in terms approved by the SBI which approval shall not be reasonably withheld and for at least the amount stated below. The contractor shall, whenever required, produce to the SBI the policy or policies of insurance cover and receipts for payment of the current premiums.

- 26.5.3 The minimum insurance cover for physical property, injury, and death is Rs.5.0 lacs per occurrence with the number of occurrences limited to four. After each occurrence contractor will pay additional premium necessary to make insurance valid for four occurrences always.

**26.6 Accident or Injury to Workmen**

26.6.1 The SBI shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workmen or other person in the employment of the contractor or any sub-contractor, save and except an accident or injury resulting from any act or default of the SBI or their employees. The contractor shall indemnify and keep indemnified SBI against all such damages and compensation, save and except as aforesaid and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

**26.6.2 Insurance against accidents etc to workmen**

The contractor shall insure against such liability with an insurer approved by the SBI during the whole of the time any person employed by him on the works and shall, when required, produce to the SBI such policy of insurance and receipt for payment of the current premium. Provided always that, in respect of any persons employed by any sub-contractor the contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the sub contractor shall have insured against the liability in respect of such persons in such manner that SBI is indemnified under the policy but the contractor shall require such sub-contractor to produce to the SBI when required such policy of insurance and the receipt for the payment of the current premium.

**26.6.3 Remedy on Contractor's failure to insure**

If the contractor fails to effect and keep in force the insurance referred to above or any other insurance which he may be required to effect under the terms of contract, then and in any such case the SBI may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the SBI as aforesaid and also deduct 15% of contract value from any amount due or which may become due to the contractor, or recover the same as debt from the contractor.

26.6.4 Without prejudice to the other rights of the SBI against contractors, in respect of such default, the employer shall be entitled to deduct from any sums payable to the contractor the amount of any damages costs, charges, and other expenses paid by the SBI and which are payable by the contractors under this clause. The contractor shall upon settlement by the insurer of any claim made against the insurer pursuant to a policy taken under this clause, proceed with due diligence to rebuild or repair the works destroyed or damaged. In this event all the monies received from the insurer in respect of such damage shall be paid to the contractor and the contractor shall not be entitled to any further payment in respect of the expenditure incurred for rebuilding or repairing of the materials or goods destroyed or damaged.

**27.0 Commencement of Works**

The date of commencement of the work will be reckoned as the recorded date of handing over site by the SBI or 15 days from the date of issue of Letter of Acceptance of Bank, whichever is later.

**28.0 Time for completion**

Time is the essence of the contract and shall be strictly observed by the contractor. The entire work shall be completed within a period of **15 calendar days** from the date of commencement. If required in the contract or as directed by the SBI, the contractor shall complete certain portions of work before completion of the entire work. However the completion date shall be reckoned as the date by which the whole work is completed as per the terms of the contract.

**29.0 Extension of Time**

If, in the opinion of the SBI, the work be delayed for reasons beyond the control of the contractor, the SBI may submit a recommendation to the SBI to grant a fair and reasonable extension of time for completion of work as per the terms of contract. If the contractor needs an extension of time for the completion of work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion as stipulated in the contract, the contractor shall apply to the SBI through the SBI in writing at least 30 days before the expiry of the scheduled time and while applying for extension of time he shall furnish the reasons in detail and his justification if any, for the delays. The SBI shall submit their recommendations to the SBI in the prescribed format for granting extension of time. While granting extension of time the contractor shall be informed the period extended time which will qualify for levy of liquidated damages. For the balance period in excess of original stipulated period and duly sanctioned extension of time by the SBI the provision of liquidated damages as stated under clause 9 of GCC shall become applicable. Further contract shall remain in force even for the period beyond the due date of completion irrespective whether the extension is granted or not.

**30.0 Rate of progress**

Whole of the materials, plant and labour to be provided by the contractor and the mode, manner and speed of execution and maintenance of the works are to be of a kind and conducted in a manner to the satisfaction of the SBI. Should the rate of progress of the work or any part thereof be at any time be in the opinion of the Engineer too slow to ensure the completion of the whole of the work by the prescribed time or extended time for completion the SBI shall thereupon take such steps as considered necessary by the SBI to expedite progress so as to complete the works by the prescribed time or extended time. Such communications from the SBI neither shall relieve the contractor from fulfilling obligations under the contract nor he will be entitled to raise any claims arising out of such directions.

### 31.0 **Work during nights and holidays**

Subject to any provision to the contrary contained in the contract no permanent work shall save as herein provided be carried on during the night or on holidays without the permission in writing of the SBI, save when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the work in which case the contractor shall immediately advise the SBI. However the provision of the clause shall not be applicable in the case of any work which becomes essential to carry by rotary or double shifts in order to achieve the progress and quality of the part of the works being technically required/ continued with the prior approval of the SBI at no extra cost to the SBI.

All work at night after obtaining approval from competent authorities shall be carried out without unreasonable noise and disturbance.

### 32.0 **No compensation for restrictions of work**

If at any time after acceptance of the tender SBI shall decide to abandon or reduce the scope of work for any reason whatsoever and hence not require the whole or any part of the work to be carried out, the SBI shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work fully but which he did not derive in consequence of the foreclosure of the whole or part of the work.

Provided that the contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the site of the work by the contractor and rendered surplus as a result of the abandonment, curtailment of the work or any portion thereof and then taken back by the contractor, provided however that the SBI shall have in such cases the option of taking over all or any such materials at their purchase price or a local current rate whichever is less.

In case of such stores having been issued from SBI stores and returned by the contractor to stores, credit shall be given to him at the rates not exceeding those at which were originally issued to the contractor after taking into consideration and deduction for claims on account of any deterioration or damage while in the custody of the contractor and in this respect the decision of SBI shall be final.

### 33.0 **Suspension of work**

- i) The contractor shall, on receipt of the order in writing of the SBI (whose decision shall be final and binding on the contractor) suspend the progress of works or any part thereof for such time and in such manner as Bank may consider necessary so as not cause any damage or injury to the work already done or endanger the safety thereof for any of following reasons.
  - a) On account any default on the part of the contractor, or
  - b) For proper execution of the works or part thereof for reasons other than the default of the contractor, or
  - c) For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the SBI.

- ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above :

The contractor shall be entitled to an extension of time equal to the period of every such suspension. No compensation whatsoever shall be paid on this account.

#### 34.0 **Action when the whole security deposit is forfeited**

In any case in which under any clause or clauses of this contract, the Contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit the SBI shall have the power to adopt any of the following course as they may deem best suited to the interest of the SBI.

- a) To rescind the contract (of which rescission notice in writing to the contractor by the SBI shall be conclusive evidence) and in which case the security deposit of the contractor shall be forfeited and be absolutely at the disposal of SBI.
- b) To employ labour paid by the SBI 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 materials (the cost of such labour and materials as worked out by the SBI shall be final and conclusive against the contractor) and crediting him with the value of the work done, in all respects in the same manner and at the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract the certificate of SBI as to the value of work done shall be final and conclusive against the contractor.
- c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted, out of his hands, and to give it to another contractor to complete in which case any expenses 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 the certificates in writing of the SBI shall be final and conclusive) shall be borne by original contractor and may be deducted from any money due to him by SBI under the contract or otherwise, or from his security deposit or the proceeds of sale thereof, or sufficient part thereof.

In the event of any of above courses being adopted by the SBI the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any material or entered into any engagements or make any advances on account of, or with a view to the execution of the work or the performance of the contract and in case the contract shall be rescinded under the provision aforesaid, the contractor shall not be entitled to recover or to be paid any sum or any work thereto for actually performed under this contract, unless, and until the SBI will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

#### 35.0 **Owner's Right to Terminate the Contract**

If the contractor being an individual or a firm commit any 'Act of Insolvency' or shall be adjusted an insolvent or being an incorporated company shall have an order for compulsory winding up voluntarily or subject to the supervision of Government and of the Official Assignee of the liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him to do so, to show to the reasonable satisfaction of the SBI that he is able to carry out and fulfill the contract, and to give security therefore if so required by the SBI.

Or if the contractor (whether an individual firm or incorporated Company) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of the contractor.

Or shall assign or sublet this contract without the consent in writing of the SBI or shall charge or encumber this contract or any payment due to which may become due to the contractor there under.

- a) Has abandoned the contract; or
- b) Has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 14 days after receiving from the SBI written notice to proceed, or
- c) Has failed to proceed with the works with such diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or has failed to remove the materials from the site or to pull down and replace work within seven days after written notice from the SBI that the said materials were condemned and rejected by the SBI under these conditions; or has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contract to be observed and performed by the contractor for seven days after written notice shall have been given to the contractor to observe or perform the same or has to the detriment of good workmanship or in defiance of the SBI's instructions to the contrary subject any part of the contract. Then and in any of said cases

the SBI and or the SBI, may not withstanding any previous waiver, after giving seven days notice in writing to the contractor, determine the contract, but without thereby affecting the powers of the SBI or the SBI or the obligation and liabilities of the contractor the whole of which shall continue in force as fully as if the contract had not been so determined and as if the works subsequently had been executed by or on behalf of the contractor. And, further the SBI, their agents or employees may enter upon and take possession of the work and all plants, tools, scaffoldings, materials, sheds, machineries lying upon the premises or on the adjoining lands or roads, use the same by means of their own employees or workmen in carrying on and completing the work or by engaging any other contractors or persons to complete the work and the contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for completing and finishing or using the materials and plant for the works.

When the works shall be completed or as soon thereafter as convenient the SBI or the SBI shall give a notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within 14 days after receipt thereof by him the SBI sell the same by public auction after due publication and shall adjust the amount realized by such auction. The contractor shall have no right to question any of the act of the SBI incidental to the sale of the materials etc.

### 36.0 **Certificate of Payment**

The contractor shall be entitled under the certificates to be issued by the SBI to the contractor within 10 working days from the date of certificate to the payment from SBI from time to time. The SBI shall recover the statutory recoveries and other dues including the retention amount from the certificate of payment.

Provided always that the issue of any certificate by the SBI during the progress of works or completion shall not have effect as certificate of satisfaction or relieve the contractor from his liability under clause.

The SBI shall have power to withhold the certificate if the work or any part thereof is not carried out to their satisfaction.

The SBI may by any certificate make any corrections required in previous certificate.

The SBI shall modify the certificate of payment as issued by the SBI from time to time while making the payment.

The contractor shall submit interim bills only after taking actual measurements and properly recorded in the Measurement book (M.B).

The contractor shall not submit interim bills when the approximate value of work done by him is less than Rs.5.0 lacs and the minimum interval between two such bills shall be one month.

The final bill may be submitted by contractor within a period of one month from the date of virtual completion and SBI shall issue the certificate of payment within a period of two months. The SBI shall pay the amount within a period of three months from the date of issue of certificate provided there is no dispute in respect of rates and quantities.

The contractor shall submit the interim bills in the prescribed format with all details.

### 37.0 **Settlement of Disputes and Arbitration**

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship of materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or the execution or failure to execute the same, whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter :



- i) If the contractor considers that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the Architect or in case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract or raise any dispute, the Contractor shall forthwith give notice in writing of his claim, or dispute to **The Regional Manager, State Bank of India, Regional Business Office - II, Gorakhpur - 273016** and endorse a copy of the same to the Architect, within 30 days from the date of disallowance thereof or the date of deduction or recovery. The said notice shall give full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the Bank be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the **The Regional Manager, State Bank of India, Regional Business Office - II, Gorakhpur - 273016** in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claim not notified to the **The Regional Manager, State Bank of India, Regional Business Office - II, Gorakhpur - 273016** in writing in the manner and within the time aforesaid.
- ii) **The Regional Manager, State Bank of India, Regional Business Office - II, Gorakhpur - 273016** shall give his decision in writing on the claims notified by the contractor. The contractor may within 30 days of the receipt of the decision of **The Regional Manager, State Bank of India, Regional Business Office - II, Gorakhpur - 273001** submit his claims to the conciliating authority namely the Circle Development Officer, State Bank of India, Local Head Office, Lucknow-226001 for conciliation along with all details and copies of correspondence exchanged between him and the Assistant General Manager (P & E).
- iii) If the conciliation proceedings are terminated without settlement of the disputes, the contractor shall, within a period of 30 days of termination thereof shall give a notice to the concerned Chief General Manager of the Bank for appointment of an arbitrator to adjudicate the notified claims falling which the claims of the contractor shall be deemed to have been considered absolutely barred and waived.
- iv) Except where the decision has become final, binding and conclusive in terms of the contract, all disputes or differences arising out of the notified claims of the contractor as aforesaid and all claims of the Bank shall be referred for adjudication through arbitration by the Sole Arbitrator appointed by the Chief General Manager. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid by the said Chief General Manager. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.

It is also a term of this contract that no person other than a person appointed by such Chief General Manager aforesaid should act as arbitrator.

The conciliation and arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made thereunder.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

#### **38.0 Water Supply**

The contractor shall make his own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions :

- i) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the SBI.
- ii) The contractor shall make alternative arrangements for the supply of water if the arrangement made by the contractor for procurement of water in the opinion of the SBI is unsatisfactory.

38.1 The contractor shall construct temporary well/tube well in SBI land for taking water for construction purposes only after obtaining permission in writing from the SBI. The contractor has to make his own arrangements for drawing and distributing the water at his own cost. He has to make necessary arrangements, to avoid any accidents or damages caused due to construction and subsequent maintenance of the wells. He has to obtain necessary approvals from local authorities, if required, at his own cost. He shall restore the ground to its original condition after wells are dismantled on completion of work or hand over the well to the SBI without any compensation as directed by the SBI.

#### **39.0 Power Supply**

The contractor shall make his own arrangements for power and supply/distribution system for driving plant or machinery for the work and for lighting purpose at his own cost. The cost of running and maintenance of the plants are to be included in his tender prices. He shall pay all fees and charges required for the power supply and include the same in his tendered rates and hold the owner free from all such costs. He has to obtain necessary approval from the appropriate authorities, if required.

#### **40.0 Treasure Trove etc**

Any treasure trove, coin or object antique which may be found on the site shall be the property of SBI and shall be handed over to the Bank immediately.

#### **41.0 Method of Measurement**

Unless otherwise mentioned in the schedule of quantities or in mode of measurement, the measurement will be on the net quantities or work produced in accordance with up to date. Rules laid down by the Bureau of Indian Standards. In the event any dispute/disagreement the decision of the SBI shall be final and binding on the contractor.

#### 42.0 **Maintenance of Registers**

The contractor shall maintain the following registers as per the enclosed proforma at site of work and should produce the same for inspection of SBI/SBI whenever desired by them. The contractor shall also maintain the records/registers as required by the local authorities/Government from time to time.

- i) Register for secured advance
- ii) Register for hindrance to work
- iii) Register for running account bill
- iv) Register for labour

#### 43.0 **Price Variation**

Not Applicable

#### 44.0 **Force Majeure**

44.1 Neither contractor not SBI shall be considered in default in performance of their obligations if such performance is prevented or delayed by events such as war, hostilities revolution, riots, civil commotion, strikes, lockout, conflagrations, epidemics, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of god or for any other cause beyond the reasonable control of the party 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 party to the contract, if it is not possible to serve a notice, within the shortest possible period without delay.

44.2 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.

44.3 From the date of occurrence of a case of force majeure obligations of the party affected shall be suspended during the continuance of any inability so caused. With the cause itself and inability resulting therefrom having been removed, the agreed time of completion of the respective obligations under this agreement shall stand extended by a period equal to the period of delay occasioned by such events.

44.4 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 mutually decide regarding the future execution of this agreement.

#### 45.0 **Local Laws, Acts, Regulations**

The contractor shall strictly adhere to all prevailing labour laws inclusive of contract labour (regulation and abolition act of 1970) and other safety regulations. The contractor shall comply with the provision of all labour legislation including the latest requirements of all the Acts, laws, any other regulations that are applicable to the execution of the project.

- i) Minimum Wages Act, 1948 (Amended)
- ii) Payment of Wages Act 1936 (Amended)
- iii) Workmen's Compensation Act 1923 (Amended)
- iv) Contract Labour Regulation and Abolition Act 1970 and Central Rules 1971 (Amended)
- v) Apprentice Act 1961 (Amended)
- vi) Industrial Employment (Standing Order) Act 1946 (Amended)
- vii) Personal Injuries (Compensation Insurance) Act 1963 and any other modifications
- viii) Employees' Provident Fund and Miscellaneous Provisions Act 1952 and amendment thereof
- ix) Shop and Establishment Act
- x) Any other Act or enactment relating thereto and rules framed there under from time to time.

#### 46.0 **Accidents**

The contractor shall immediately on occurrence of any accident at or about the site or in connection with the execution of the work report such accident to the SBI. The contractor shall also report immediately to the competent authority whenever such report is required to be lodged by the law and take appropriate actions thereof.

## **SPECIAL CONDITIONS OF CONTRACT**

### **1.0 Scope of Work**

The scope of work is to carry out Electrical installation works including dismantling of existing old light fittings and electrical switch gears at **Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur.**

### **2.0 Address of Site**

The site is located at **Motiram Adda Branch (65081) under RBO-II, AO Gorakhpur**

### **3.0 Dimensions and Levels**

All dimensions and levels shown on the drawing shall be verified by the contractor on the site and he will be held responsible for the accuracy and maintenance of all the dimensions and the levels. Figured dimensions are in all cases to be accepted and no dimension shall be scaled. Large scale details shall take precedence over small-scale drawings. In case of discrepancy the contractor shall ask for clarification from the SBI before proceeding with the work.

### **4.0 Notice of Operation**

The contractor shall not carryout any important operation without the Consent in writing from the SBI.

### **5.0 Construction Records**

The contractor shall keep and provide to the SBI full and accurate records of the dimensions and positions of all new work and any other information necessary to prepare complete drawings recording details of the work as constructed.

### **6.0 Safety of Adjacent Structures and Trees**

The contractor shall provide and erect to the approval of the SBI such supports as may be required to protect effectively all structures and protective guards to trees which may be endangered by the execution of the works or otherwise take such permanent measures as may be required by the Architect to protect the trees and structures.

### **7.0 Temporary Works**

Before any temporary works are commenced the contractor shall submit at least 7 days in advance to the SBI for approval complete drawings of all temporary works he may require for the execution of the works. The contractor shall carry out the modifications relating to strength, if required by the SBI may require in accordance with the conditions of contract at his own cost. The contractor shall be solely responsible for the stability and safety of all temporary works and unfinished works and for the quality of the permanent works resulting from the arrangement eventually adopted for their execution.

## **8.0 Work Programme**

As soon as the contract is awarded, a suitable programme of work preferably in the form of Bar chart shall be drawn up for computation of the different stages of the work, so as to ensure its completion within the allotted period of time. This programme shall be submitted by the contractor in consultation with Architect/PMC or Site Engineer.

## **9.0 Temporary Roads**

The contractor shall provide access roads to the site from the nearest main road at no extra cost and as directed by the SBI. The contractor shall also be responsible for proper maintenance of this access road and would take all care to see that existing services, if any, are maintained in working order at his own cost. The laying and maintaining the temporary roads within the site area shall be the contractor's responsibility and the contractor shall take such measures that are necessary and as directed by the SBI.

## **10.0 Water, Power and Other Facilities**

- a) The rate quoted by the contractor shall include all expenses that are required for providing all the water required for the work and the contractor shall make his own arrangements for the supply of good quality water suitable for the construction and good quality drinking water for their workers. If necessary the contractor has to sink a tube well/open well and bring water by means of tankers at his own cost for the purpose. The SBI will not be liable to pay any charges in connection with the above.
- b) The rate quoted in the tender shall include the expenses for obtaining and maintaining power connections and shall pay for the consumption charges.
- c) The contractors for other trades directly appointed by the SBI shall be entitled to take power and water connections from the temporary water and power supply obtained by the civil contractor. However the concerned contractor shall make their own arrangements to draw the supply and pay directly the actual consumption charges at mutually agreed rates between them. All municipal charges for drainage and water connection for construction purposes shall be borne by the contractor and charges payable for permanent connections, if any, shall be initially paid by the contractor and the SBI will reimburse the amount on production of receipts.
- d) The SBI as well as the SBI shall give all possible assistance to the contractors to obtain the requisite permission from the various authorities, but the responsibility for obtaining the same in time shall be of the contractor.

## **11.0 Office Accommodation**

- a) The contractor shall provide and maintain all necessary offices, workshops, stores, shelters, sanitary facilities, canteens and other temporary structures for themselves in connection with the work at the site at their own cost after getting the approval from the SBI.
- b) A site office for the use of SBI/SBI shall be provided by the contractor at his own expenses.

- c) All temporary buildings and facilities as mentioned above shall be removed on completion of the work or at any other earlier date as directed by the Engineer.

All the expenses for obtaining statutory approvals and maintenance of the above facilities as well as running expenses shall be borne by the contractor at no extra cost. It is also the responsibility of the contractor to obtain statutory approvals for providing the above facilities.

#### **12.0 Facilities for contractor's employees**

The contractor shall make his own arrangement for the housing and welfare of his staff and workmen including adequate drinking water facilities. The contractor shall also make the arrangements at his own cost for transport where necessary for his staff and workmen to and from site of work at his own cost.

#### **13.0 Lighting of Works**

The contractor shall at all times provide adequate and approved lighting as required for the proper execution and supervision and inspection of work.

#### **14.0 Fire Fighting Arrangement**

- i) The contractor shall provide suitable arrangement for fire fighting at his own cost. For this purpose he shall provide requisite number of fire extinguishers and adequate number of buckets, some of which are to be always kept filled with sand and some with water. These equipments shall be provided at suitable prominent and easily accessible places and shall be properly maintained.
- ii) Any deficiency in the fire safety or unsafe conditions shall be corrected by the contractor at his own cost and to the approval of the relevant authorities. The contractor shall make the following arrangements at his own cost but not limited to the following :
  - a) Proper handling, storage and disposal of combustible materials and waste.
  - b) Work operations which can create fire hazards.
  - c) Access for fire fighting equipment
  - d) Type, number and location of containers for the removal of surplus materials and rubbish.
  - e) Type, size, number and location of the fire extinguishers or other fire fighting equipment.
  - f) General house keeping.

### **15.0 Site Order Book**

A site order book shall be maintained at site for the purpose of quick communication between the SBI. Any communication relating to the works may be conveyed through records in the site order book and signed by the Owner/Architects/Site Engineer. Such a communication from one party to the other shall be deemed to have been adequately served in terms of contract. Each site order book shall have machine numbered pages in triplicate and shall be carefully maintained and preserved by the contractor and shall be made available to the SBI as and when demanded. Any instruction which the SBI may like to issue to the contractor or the contractor may like to bring to the SBI two copies of such instructions shall be taken from the site order book and one copy will be handed over to the party against proper acknowledgment and the second copy will be retained for their record.

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### **16.0 Temporary Fencing/Barricading**

The contractor shall provide and maintain a suitable temporary fencing/barricading and gate at his cost to adequately enclose all boundaries of the site for the protection of the public and for the proper execution and security of the work and in accordance with the requirement of the SBI and regulations of local authorities. These shall be altered, relocated and adopted from time to time as necessary and removed on completion of the work.

### **17.0 Site Meetings**

Site meetings will be held to review the progress and quality evaluation. The contractor shall depute a senior representative along with the site representative and other staff of approved sub-contractors and suppliers as required to the site meetings and ensure all follow up actions. Any additional review meetings shall be held if required by the SBI.

### **18.0 Disposal of Refuse**

The contractor shall cart away all debris, refuse etc arising from the work from the site and deposit the same as directed by the SBI at his own cost. It is the responsibility of the contractor to obtain from the local authorities concerned to the effect that all rubbish arising out of contractor's activities at the construction site or any other off-site activities borrow pits has been properly disposed off.

### **19.0 Contractor to verify site measurement**

The contractor shall check and verify all site measurements whenever requested by other specialists contractors or other sub contractors to enable them to prepare their own shop drawings and pass on the information with sufficient promptness as will not in any way delay the works.

### **20.0 As Built Drawings**



- i) For the drawings issued to the contractor by the SBI.

The SBI will issue drawings to the Contractor for the items for which some changes have been made from the approved drawings as instructed by the SBI/SBI. The contractor will make the changes made on these copies and return these copies to the SBI for their approval. In case any revision is required or the corrections are not properly marked the SBIs will point out the discrepancies to the contractor.

The contractor will have to incorporate these corrections and/or attend to discrepancies either on the copies as directed by the SBI and resubmit to him for approval. The SBI will return one copy duly approved by him.

- ii) For the Drawings prepared by the Contractor

The contractor will modify the drawing prepared by him whenever the changes are made by the SBI/SBI and submit two copies of such modified drawings to the SBI for approval. The SBI shall return one copy of the approved drawing to the contractor.

#### **21.0 Approved Make**

The contractor shall provide all materials from the list of approved makes. The SBI/Bank may approve any make/agency within the approved list as given in the tender.

#### **22.0 Procurement of Materials**

The contractor shall make his own arrangements to procure all the required materials for the work. All wastages and losses in weight shall be to the contractor's account.

#### **23.0 Excise Duty, Taxes, Levies etc**

The contractor shall pay and be responsible for payment of all taxes, duties, levies, royalties, fees, cess or charges in respect of the works including but not limited to sales tax, tax on works contract excise duty, and octroi, payable in respect of materials, equipment plant and other things required for the contractor. All of the aforesaid taxes, duties, levies, fees and charges shall be to the contractor's account and the SBI shall not be required to pay any additional or extra amount on this account. Variation of taxes, duties, fees, levies etc if any, till completion of work shall be deemed to be included in the quoted rates and no extra amount on this account. Variation of taxes, duties, fees, levies etc if any, till completion of work shall be deemed to be included in the quoted rates and no extra claim on this account will in any case be entertained. If a new tax or duty or levy or cess or royalty or octroi is imposed under as statute or law during the currency of contract the same shall be borne by the contractor.

#### **24.0 Acceptance of Tender**

The SBI shall have the right to reject any or all tenders without assigning any reason. They are not to bound to accept the lowest or any tender and the tenderer or tenderers shall have no right to question the acts of the SBI. However adequate transparency would be maintained by the SBI.

#### **25.0 Government and Local Rules**

The contractor shall conform to the provisions of all local Bye-laws and Acts relating to the work and to the Regulations etc of the Government and Local Authorities and of any company with whose system the structure is proposed to be connected. The contractor shall give all notices required by said Act, Rules, Regulations and Bye-laws etc and pay all fees payable to such authority/authorities for execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc and shall indemnify the Owner against such liabilities and shall defend all actions arising from such claims or liabilities.

#### **26.0 Possession Prior to Completion**

The Owner shall have the right to take possession of or use any completed or partially completed part of the work. Such possession or use shall not be an acceptance of any work not completed in accordance with the contract Agreement.

#### **27.0 Tools, Storage of Materials, Protective Works and Site Office Requirements**

The contractor shall provide, fix up and maintain in an approved position proper office accommodation for the contractor's representative and staff which offices shall be open at all reasonable hours to receive instruction notices or communications and for storage of tools, etc and clear away the same on completion of the works and make good all work disturbed.

All drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved varnish. They are to be protected from ravages of termites, ants, and other insects and made available to the Owner/Architects for inspection or such other purposes they may require.

The contractor shall provide at his own cost all artificial light required to complete the work within the specified time.

The contractor shall provide a suitable temporary hut for the watchmen and clear away the same when no longer required and to provide all necessary attendance, lights etc required.

The contractor shall arrange for temporary latrines for the use of workers and field staff and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and shall cause such latrines and soil to be cleared away whenever necessary and shall make good all the works disturbed by these convenience.

Every precaution shall be taken by the contractor to prevent the breeding of mosquitoes on the works during the construction, and all receptacles, cistern, water tanks etc used for the storage of water must be suitably protected against breeding of mosquitoes. The contractor shall indemnify the Owner against any breach of rules in respect of anti-malarial measures.

The contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed on any boarding gantry, building structure other than those approved by the Owner.

**Protective Measures :** The contractor from time to time of being placed possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on Sundays and other holidays.

Contractor shall indemnify the Owner against any possible damage to the building, roads, or members of the public in course of execution of the work.

The contractor shall provide necessary temporary enclosures, gates, entrances etc for the protection of the work and materials and for altering and adopting the same as may be required and removing on completion of the works and making good all works disturbed.

**Storage of Materials :** The contractor shall provide and maintain proper sheds for the proper storage and adequate protection of materials etc and other work that may be executed on the site including the tools and materials of nominated sub-contractors and remove same on completion.

Cement godown shall be constructed for storing cement. The structure shall be waterproof from all the sides & top. Cement should be stored one feet above the ground level and have pucca raised floor.

So also, steel materials are to be stored above the ground level to prevent the same from getting rusted.

**Tools :**

All measuring tapes shall be of steel. Suitable scaffolding and ladders that may be required for safe working and taking measurement shall be supplied by the contractor.

The mistries and the supervisors on the works shall always carry with them a one metre or two metre steel tape, a measuring tape of 30 metres, a spirit level, a plumb bob and a square and shall check the work to see that the work is being done according to the drawing and specifications. Electrical Mistries and Supervisors shall also carry one test lamp with leads and one neon tester and necessary working instruments. The Site Engineer will use any or all measuring instruments or tools belonging to the contractors as he chooses for checking the works executed or being executed on the contract.

The contractor should cover in his rates for making provisions for all reasonable facilities for the use of his scaffolding, tools and plant etc by nominated sub-contractors for their work.

## **28.0 Datum**

The average ground level will be considered as the crown of the nearest road, which should be taken as "Datum" which is however, subject to final confirmation by the Owner/Architects. All levels shown in the drawings are to be strictly adhered to.

### **29.0 Removal of Improper Work**

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

### **30.0 Dismissal of Workmen**

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

### **31.0 Concealed Work**

The contractor shall give not less than 5 days notice to the Owner/Architects whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial. In default whereof the same shall, at the opinion of the Owner/Architect be either opened up for measurement at the contractor's expense or no payment may be made for such materials. Should any dispute or differences arise after the execution of any work as to measurements etc or other matters which cannot be conveniently tested or checked, the notes of the Owner/Architects shall be accepted as correct and binding on the contractor. The Owner/Architect be either opened up for measurement at the contractor's expense or no payment may be made for such materials. Should any dispute or differences arise after the execution of any work as to measurements etc or other matters which cannot be conveniently tested or checked, the notes of the Owner/Architects shall be accepted as correct and binding on the contractor.

### **32.0 Substitution**

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

### **33.0 Inspection on Completion**

The whole of the work will be thoroughly inspected by the contractor and deficiencies and defects put right. On completion of such inspection the contractor shall inform the Owner that he has completed the work and it is ready for inspection.

#### **34.0 Defects after Completion**

The contractor shall make good at his own cost and to the satisfaction of the Owner all defects and other faults which may appear within 12 months after completion of the work. In default, the Owner may employ other persons to amend and make good such damages, defects etc. Expenses consequent thereon or incidental thereto shall be recoverable from the contractor by the Owner from any money due to the contractor. In the event of the amount being insufficient the Owner may recover the balance from the contractor, from the amount retained under Clause No. 1 (Total Security Deposit) of General Conditions of Contract together with any expenses the Owner may have incurred in connection therewith.

#### **35.0 Idle Labour**

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

#### **36.0 Guarantee for the Specialised Works**

Wherever provision for submission of a guarantee has been advised, the same shall be submitted from the specialised agency along with a counter guarantee by the main contractor engaged for the work. The guarantee shall be furnished on a non-judicial stamp paper of appropriate value. If the contractor is required to submit guarantee/ guarantees for any item/items for a period of more than 12 months, the guarantee/ guarantees in case of those items shall remain valid even after expiry of the defect liability period of 12 months as stipulated in the contract.

#### **37.0 Declaration**

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

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

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Signature of Tenderer

Witness :

Address :

Date :

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## **ADDITIONAL CONDITIONS FOR ELECTRICAL INSTALLATION**

### **1.0 General Requirements**

The installation shall generally be carried out in conformity with the requirements of the Indian Electricity Act, 1910 as amended upto date and the Indian Electricity Rules, 1956 framed there under, the relevant regulations of the Electric Supply Authority concerned, and also with the specifications laid down in the Indian Standard I.S. 732-1963 Code of Practice (revised) for Electrical Wiring Installations (System voltage not exceeding 650 volts) and I.S. 2309-1969 Code of Practice for the protection of Buildings and Allied Structures against lightning. The wiring shall also be according to the specifications of Local Authority and as per N.E.C.

Electrical Installation work shall be carried out only by Contractor/Contractors holding valid contractors' license issued by the concerned State Government as applicable to the voltage grade and nature of electrical installation work in accordance with Rule 45 of Indian Electricity Rules, 1956 with its latest amendments. The work shall also be carried out under the direct supervision of a person holding a certificate of competency and by a person holding License/ permit issued or recognised by the concerned State Government.

### **2.0 Materials**

All materials, fittings, appliances, used in electrical installations, shall conform to Indian Standard Specifications wherever these exist. A list of approved materials is attached afterwards. Materials not included in the list shall be got approved by Owner/ Architects/ Engineer-in-Charge prior to actual use.

### **3.0 Eligibility, Licence, Supervision**

Only Contractor having valid contractors' licence, issued by the concerned State Government, for doing the category of work as per tender shall be eligible for award of contract. A xerox copy of such licence shall be enclosed with the contract offer.

All work shall be carried out under direct supervision of Licensed Electrical Supervisor and Tradesman, certified by Electrical Authority for the requisite part.

The Contractor shall ensure that all the above statutory licenses are renewed before they lapse, during tenure of this work..

Owner shall have the right to call for verification of all licenses as and when felt necessary by them or their authorised representative.

The licensed supervisor shall be available at site at all reasonable hours to receive instruction from the Owner/ Architects/Engineer.

### **4.0 Insurance**

Contractors rates should include for necessary Insurance Policies on Companies approved by the Owner to cover all risks against theft, fire hazard, workmen compensation, injury to persons animals things etc during the progress of the work as detailed in Conditions of Contract and produce all such documents for Architects' verification before submission to the Owner. For further clarification in this respect please refer to Clauses No. 26 of the General Conditions of Contract.

## **5.0 Site Condition**

The contractor should inspect the work site, where the works under this contract are to be carried out, and obtain for himself at his own responsibility all the information which may be necessary for the purpose of the successful execution of the contract

He must also make himself conversant with all the local conditions, means of access to the site of work, nature, extent of transport facilities & character of the work and supply of materials, conditions affecting labour and other matters that may affect his tender.

The work shall be carried out in coordination with the interior decoration work of the building using modular type furniture, partitions, false ceilings with recessed type wireways, cabling and earthing arrangements and installation of modular type switches, socket outlets and other terminal outlets required for telephone (Internal & External), Computer terminals etc.

## **6.0 Contractor to Ensure**

Notwithstanding whatever has been stated elsewhere the contractor will take action as follows :

- a) The agreement is to be executed as per tender terms within 30 days of the date of the work order.
- b) The initial formalities as per tender are to be completed within 30 days of the work order.
- c) Various insurance policies as per tender are to be effected within 30 days of the work order.
- d) Valid Labour licenses are to be submitted before commencement of work.

The contractor is to note that in case he fails to attend to any of the above, the Owner may take action as per tender terms and the Owner will be within his rights to forfeit the E.M.D and cancel the work order.

## **7.0 Contractor to Provide**

The contractor will have to arrange for the work to be supervised by a whole time licensed Supervisor holding requisite part, who will be available at all reasonable hours at site to receive instructions from the Owner/Architects/Engineer.

The contractor shall provide and maintain proper shed/storage space for storage and protection of tools, materials etc and arrange for watchmen for protection of materials and executed work.

The mistries and supervisors of the contractor shall always carry with them measuring tape (30 metres) one test lamp with leads and one neon tester and make available to the Architects/Owner/ Engineer all the measuring instrument and tools that are required for checking the work.



The contractor shall keep one copy of all drawings and specifications of the work at the site in good order to be available to the Owner and its Architects and for their respective representatives for inspection or for such other purpose the Owner or its Architect may require.

The concealed conduits in slabs are to be firmly tied down using 22 gauge M.S. binding wire before casting of slabs. The conduits in wall chases are to be fixed using approved staples. The chasing of walls is to be done preferably using a cutting machine electrically operated. No bends will be used for the drops in slabs or beams but the pipe will be given the required bend/shape using bending machine at site, to suit the site conditions.

The contractor shall maintain a Site Instruction Book wherein the directions or instructions given at site by the Owner/Architect will be recorded (except where such directions or instruction are given by separate letters) and he will carry out the directions/ instruction recorded in the Site Instruction Book and signed by the Owner/Architect/Site Engineer.

#### **8.0 Deviations from Specifications & Drawings**

In the tendering stage, no deviations shall be permitted.

During actual installation, the Owner or their authorised representative shall check progress and carryout inspection on work done as well as equipment brought to site. Any work/ equipment found at variance from those specified, shall be rectified/replaced as to be instructed to the contractor.

Any deviation permitted by the Owner during the course of work shall be written by the authorised representative, in Site Order Book to be maintained at site by the contractor.

#### **9.0 Procurement of Steel**

The Electrical Contractor will have to procure steel for his requirement on his own and in his own cost. No extra cost whatsoever shall be made to the contractor other than those specified in the schedule of work.

#### **10.0 Procurement of Cement**

The Electrical Contractor will have to procure cement for his requirement on his own and in his own cost. No extra cost whatsoever shall be made to the contractor other than those specified in the tender schedule of work.

#### **11.0 Protection of Work and Property**

The contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with this contract. He shall make good any such damage, injury or loss, except due to causes beyond the contractor's control, and not due to his fault or negligence. He shall take adequate care and steps for the protection of the adjacent property. The contractor shall take all necessary precautions for the safety and protection of his employees on the works and shall comply with all applicable provisions of Government and Municipal safety laws and building codes to prevent accidents, or injury to persons or property on, about or adjacent to his premises where the works are being performed.

## **12.0 Scaffolding**

The contractor shall make his own arrangement for provisions of necessary scaffolding for the work and include the same in the rates quoted by them. No additional cost shall be payable other than specified in the specified tender schedule.

## **13.0 Wires & Cables**

All wires and cables to be used in electrical wiring shall have ISI marking on it.

## **14.0 Conduits**

The conduits to be used in wiring shall conform to I.S 9537 (Part-II)-1981 or latest in all respects and shall have ISI marking on it.

## **15.0 Prices**

The rates quoted by the Contractor shall be inclusive of all taxes and duties including Sales Tax on works contract and shall be firm throughout the tenure of the contract (including extension of time granted, if any) and will not be subject to any fluctuations due to increase in cost of materials, labour, excise duty, octroi, sales tax etc. However, PVA clause as stated elsewhere (Clause-43 of G.C.C) will not be in force and applicable.

## **16.0 Order of Precedence in case of Variance**

If the stipulation of the various contract documents be at Variance in any respect one will override the other only (in so far as they are at variance) in the order of Precedence given below :

- i) Notice Inviting Tender
- ii) Schedule of Items
- iii) Technical Specification
- iv) Special Condition
- v) General Conditions of Contract.

## **17.0 Date of Commencement and Completion**

The date of commencement will be the date on which the contractor is instructed to take possession of site.

The date of completion will be **21 calendar days** as per completion period indicated in the Summary of Schedule of Items or N.I.T or General Conditions of Contract.

## **18.0 Co-operation/Co-ordination**

If due to negligence, non-cooperation, non coordination of the contractor executed work of other agency/contractor suffers damage, loss, etc, the damage, loss etc will be got rectified by the Site Engineer and the cost will be recovered from the defaulting contractor. The decision of the Site Engineer/Architect/Owner in the matter will be final and binding on the contractor.

## **19.0 Payment**

With in 30 days from date of receipt of bill.

## **20.0 Test Certificate**

- 20.1** The Electrical contractor shall have to furnish manufacturer's test certificates, if asked by the Architect, for particular material/materials brought at site for incorporation in work.
- 20.2** The Contractor shall have to carry out insulation tests, continuity tests, earth resistance test and any other tests required as per specification and furnish test certificates to Owner/Architect the same in quadruplicate duly signed by them with their licence no supervisors licence no and his signature certifying the above.
- 20.3** Certificates of High Voltage Insulation Tests, Conductivity Tests and any other tests required as per specifications are to be procured and furnished by the Electrical Contractor. The contractor will have to get the metal conduit pipes tested as per IS specifications from an approved test laboratory and use them at site only if the pipes pass the tests. The testing will be done by the contractor at his cost. Samples for testing will be drawn jointly by the Owner's Engineer/Architects/PMC representative and Contractor's representative. For other items like Cables, Copper Wires etc manufacturer's test certificate/ISI Certificate will be submitted by the contractor for each lot of materials delivered at site.

## **21.0 Licensees Requirements etc**

The contractor should ensure that all installations conform to Local/Statutory Regulations and requirements. In case of any deficiency/discrepancy or contradictions found in the Technical Specifications or Schedule of Items, these shall be immediately brought to the notice of the Owner/Architect and the same should be got modified before execution of the work.

## **22.0 Effecting Connection & Commissioning, Electrical Inspection etc**

- 22.1** The Owner will apply for Service Connection. However, all the necessary forms required for Electrical Service Connection and Electrical Inspection etc are to be collected/arranged and to be filled up by the contractor and submitted to Authority after due endorsement by the Owner along with necessary fees, if required. Owner will reimburse the necessary/statutory fees paid by the Contractor on his behalf, on production of the money receipt of the Inspecting Authority/ Authority.
- 22.2** The contractor will have to carry out the formalities with the Licensee including negotiations for the same with licenses for the subject installation, as necessary.
- 22.3** The Contractor has to take all initiative/responsibility towards approval of the electrical installation and permission to switch on power supply and get the installation passed by the Electrical Inspector/Local Authority in all respects including any variations, alterations, and modifications after instructions of Licensee/Inspector/Authority, if any for permanent energisation. All the above are in the Contractor's scope of work and the necessary cost for the same should be included in the rates quoted by them. No other payment shall be made whatsoever in this connection except the payment of the statutory fees against production of documentary evidences only.
- 22.4** The Contractor shall submit to the Electrical Authority necessary Test Forms, Electrical Layout Drawings, Single Line Diagram, etc as required, for approval and permanent energisation of the installation without delay.

## **23.0 Handing Over/Taking Over**

The assets will be taken over from the contractor within about one month after the issue of completion certificate by the Owner/Architect. The contractor shall be responsible for the installation and its maintenance in all its aspect and respects until the installation is taken over by the Owner or his authorised representative. In case the handing over/taking over is delayed, extra financial implications for providing security etc by the contractor shall be considered separately on the merits of the case.

23.1 Handing and taking over report and inventories/statements (in quadruplicate) at the time of handing over shall be prepared. The reports and inventories shall be signed by :

- a) The contractor (only the relevant papers)
- b) The site engineer, and
- c) Competent Authority in the Bank

The following inventories/statements shall be prepared :

- i) Inventory of Electrical fittings and fixtures (Lights/ Fans/Panels/ DBs/Switches/ Plug Sockets etc.
- ii) Information folders & test reports for installations like electrical, pumps.
- iii) Surplus electrical goods including (fans, tubes, lights etc) pending further instruction for disposal from higher authorities.
- iv) Information folders & test reports for electrical installations.
- v) Warranties issued by suppliers/manufactures of electrical equipments.
- vi) The Engineer on behalf of the Bank associated with this operation, shall be apprised of the importance to carry out periodic inspections (at two months interval) for defects not rectified or fresh ones that crop up and issuing notices for this rectification to concerned contractor(s) and final inspection just before the expiry of the defects liability period.

## **24.0 Extension of Completion Time**

Whenever the contracted work is not likely to be completed within the contract period due to non availability of site clearance, suitable extension shall be prayed from the Owner well ahead on the prescribed proforma as per tender terms stated elsewhere.

## **25.0 Completion Drawing**

On completion of work, the contractor shall submit three copies of ammonia print along with one tracing/reproducible transparency for each "as-built" drawings as detailed in the specifications, along with final bill, if not submitted earlier :

1. Electrical Layout Drawing for each floor indicating location of electrical points, switch boards, Distribution boards, Main switch board , socket outlets, power points, telephone points (Internal & external), computer terminals, UPS & raw power supply terminals, floor wire, starting from the point of supply to the terminals including earthing as necessary.
2. Plan with cable routes for L.T Panels, switches, MCB DBs (UPS & Raw power etc), telephone lines from CT boxes to terminals, computer lines from HUB etc.
3. Control schematic diagram drawings.
4. Single Line Diagrams with bill of quantities, cable schedule etc.

#### **26.0 Safety Code – Electrical Installation**

The Safety Code will be as per Indian Electricity Rules 1956 and subsequent amendments made upto date, and as per various prevailing I.S. Codes of Practice for Electrical Installation.

Temporary Electrical Wiring shall be done in the manner as advised by the Owner/Architect with necessary supports when drawn overhead and proper clamping/fixing and should conform to requirement of Indian Electricity Rules, various I.S. Codes of Practice for Electrical Installation and Local Regulations.

#### **27.0 Deduction of Income Tax**

Deduction of Income Tax from the Contractor's bills shall made as laid down in Memo No. 275/19/72 ITO dated 29.5.72 of the Ministry of Finance (Department of Revenue and Insurance), Government of India with its amendment, if any.

Works contract tax as per the present provision shall be recovered from all payments. Revision of tax/duty structures or fresh imposition thereof shall be liable for deduction from the R.A bills or any amount due to the contractor.

### **SAFETY CODE**

1. First aid appliances including adequate supply of sterilized dressing and cotton wool shall be kept in a readily accessible place.
2. An injured person shall be taken to a public hospital without loss of time, in case where the injury necessitates hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from the ground.
4. No portable single ladder shall be over 8 metres in length. The width between the side rails shall not be less than 30 cm (clear) and the distance between two adjacent rungs shall not be more than 30 cm. When a ladder is used an extra mazdoor shall engaged for holding ladder.
5. The excavated material shall not be placed within 1.5 metres of the edge of the trench of the half of the depth of trench whichever is more. All trenches and excavation shall be provided with necessary fencing and lighting.
6. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or rails whose minimum height shall be one metre.
7. NO floor, roof or other part of the structure shall be so overloaded with debris or materials as to render it unsafe.
8. Workers employed on mixing and handling material such as asphalt, cement mortar of concrete and lime mortar shall be provided with protective footwear and rubber hand-glove.
9. Those engaged in welding works shall be provided with welder's protective eyeshield and gloves.
10.
  - i) No paint containing lead or lead products shall be used except in the form of paste and readymade paint.
  - ii) Suitable facemasks should be supplied for use by the workers when the paints applied in the form of spray or surface having lead paint dry rubbed and scrapped.
11. Overalls shall be supplied by the Contractor to the painters and adequate facilities shall provided to enable the working painters to wash during the periods of cessation of work.
12. Hoisting machines and tackle used in the works, including their attachments, anchored and supports shall be in perfect condition.
13. The ropes used in hoisting or lowering material or as a means of suspension shall be durable quality and adequate strength and free from defects.

### RUNNING A/C BILL

- i) Name of Contractor/Agency :
- ii) Name of Work :
- iii) Sr No. of this bill :
- iv) No. and date of previous bill :
- v) Reference to Agreement No. :
- vi) Date of written order to commence :
- vii) Date of completion as per agreement

Sl. No.	Item Description	Unit	Rate (Rs.)	As per tender	
				Qty	Amount (Rs.)
1	2	3	4	5	

Upto Previous R/A Bill		Upto Date (Gross)		Present Bill		Remarks
Qty	Amount (Rs)	Qty	Amount (Rs.)	Qty	Amount (Rs.)	
6		7		8		9

- Note :
1. If part rate is allowed for any item, it should be indicated with reasons for allowing such a rate.
  2. If adhoc payment is made, it should be mentioned specifically.

Net value since  
previous bill

**II – ACCOUNT OF SECURED ADVANCE, IF ADMISSIBLE ON  
MATERIALS HELD AT SITE BY THE CONTRACTOR**

No. 1	Item 2	Quantity 3	Unit 4	Amount 5	Remarks 6
----------	-----------	---------------	-----------	-------------	--------------

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Total Value of materials at site

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Secured Advance @ .....% of above value

---

B

Certified (i) that the materials mentioned above have actually been brought by the contractor to the site of the work and no advance on any quantity of any of this item is outstanding on their security, (ii) that the materials are of imperishable nature and are all required by the contractor for use in the work in connection with the items for which rates of finished work have been agreed upon.

---

Dated signature of Site Engineer preparing the bill

---

Designation

---

Dated signature of Bank's Architects

---

(Name of the Architects)

---



---

Dated signature of Contractor



### **III. CERTIFICATE**

The measurements on the basis of which the above entries for the Running Bill No. \_\_\_\_\_ were made have been taken jointly on \_\_\_\_\_ and are recorded at pages \_\_\_\_\_ to \_\_\_\_\_ of measurement book No. \_\_\_\_\_ .

\_\_\_\_\_  
Signature and date of  
contractor

\_\_\_\_\_  
Signature and date of  
Architect's representa-  
tive (seal)

\_\_\_\_\_  
Signature and date of  
Site Engineer

The work recorded in the above mentioned measurements has been done at the site satisfactorily as per tender drawings, conditions and specifications.

Architect

Site Engineer/  
Bank's Engineer

### MEMORANDUM FOR PAYMENT

R. BILL NO. \_\_\_\_\_

1. Total amount due since previous bill (D)  
(A+B) Rs. \_\_\_\_\_
  2. PVA on account of escalation in price of  
steel, cement and other materials and la-  
bour as detailed in separate statement en-  
closed Rs. \_\_\_\_\_
  3. Deductions :
    - i) Secured Advance paid in the previous R.A.  
Bill Rs. \_\_\_\_\_
    - ii) Retention money on value of works as per  
accepted tenders : upto date amount Rs. \_\_\_\_\_  
  
Less : Already recovered (-) Rs. \_\_\_\_\_  
  
Balance to be recovered Rs. \_\_\_\_\_ (-) Rs. \_\_\_\_\_
    - iii) Mobilisation advance, if any
    - a) Outstanding amount (Principal + Interest)  
as on date Rs. \_\_\_\_\_
    - b) To be recovered in this bill Rs. \_\_\_\_\_
    - iv) Any other departmental material cost to  
be recovered as per contract, if any Rs. \_\_\_\_\_
    - v) Any other departmental service charges  
to be recovered if any, as per contract  
(water, power etc) Enclose statement Rs. \_\_\_\_\_
  - Total deduction as per contractor Rs. \_\_\_\_\_ (-) Rs. \_\_\_\_\_
  - Net amount payable as per Contract (E-F) Rs. \_\_\_\_\_ Rs. \_\_\_\_\_ (G)
- (Rupees ..... ) in words

The bill amounting to .....(both figures and words) has been scrutinized by me after due test check of the measurement of works as required and is recommended for payment.

\_\_\_\_\_  
Dated signature of Bank's Engineer

In charge of the project

STATUTORY DEDUCTIONS :

1. Total amount due (E)	Rs. _____
2. Less : Income Tax Payable	Rs. _____
Net Payable	Rs. _____

The figure given in the Memorandum for Payment has been verified and the bill passed for payment  
Rs..... (Words and figures)

Date :

\_\_\_\_\_  
Signature of Premises Officer

### PROFORMA OF CERTIFICATE OF PAYMENT BY ARCHITECTS

Certificate No. Interim/	Dated																												
Client :	Project No.	Building Work/Interior Work																											
	Particulars :																												
Contractor :	Contract/Letter NO.	Dated :																											
	Contractor's Bill No.	Dated :																											
<p>This is to certify that the amount given below (*) is due to your Contractors for the work done by them and/or against materials delivered at site and/or for advance towards contract on the above referred project.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Advance against contract</td> <td style="width: 10%; text-align: right;">Rs.</td> <td style="width: 20%; border-bottom: 1px solid black;"></td> </tr> <tr> <td>Less : Advance adjusted to-date</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Balance Advance</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Advance against material delivered at site</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Amount of work done to-date</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Total</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Less : Retention on work done</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Less : Previously certified upto</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>PRESENT CERTIFICATE (*)</td> <td style="text-align: right;">Rs.</td> <td style="border-bottom: 1px solid black;"></td> </tr> </table> <p>RUPEES .....</p> <p>The cost of cement or any other material supplied by you or payments made by you directly, if any and not covered herein above, should be adjusted before making the payment of the certified amount (*)</p> <p>Necessary Deduction U/S 194C of the Income Tax 1961 and sales tax may be made before paying the above certified amount.</p> <p>By a copy of this letter, we are intimating the Contractors to call on you for the necessary payment.</p>			Advance against contract	Rs.		Less : Advance adjusted to-date	Rs.		Balance Advance	Rs.		Advance against material delivered at site	Rs.		Amount of work done to-date	Rs.		Total	Rs.		Less : Retention on work done	Rs.		Less : Previously certified upto	Rs.		PRESENT CERTIFICATE (*)	Rs.	
Advance against contract	Rs.																												
Less : Advance adjusted to-date	Rs.																												
Balance Advance	Rs.																												
Advance against material delivered at site	Rs.																												
Amount of work done to-date	Rs.																												
Total	Rs.																												
Less : Retention on work done	Rs.																												
Less : Previously certified upto	Rs.																												
PRESENT CERTIFICATE (*)	Rs.																												
Remarks, if any :																													
The details of Insurance Policy are given in the next page.																													
Signature of Architects _____																													
Enclosures : Bill																													

Client's Copy

### DETAILS OF INSURANCE POLICIES

Type of policies	Name of Insurance	Amount Rs.	Policy No.	Validity
CAR Policy including 3 <sup>rd</sup> Party liability				

Workmen's Compensation

Remarks :

1. This is only an 'on-account' payment and is not to be interpreted either as approval of work, materials brought or affixed at site or for that matter approval of any sort.
2. The quantum of work done and materials delivered at site have been certified by .....
3. Should you wish to audit such work, kindly contact the undersigned and oblige.

\_\_\_\_\_  
Architects

### PROFORMA OF HINDRANCE REGISTER

Name of Work : Date of state of work :

Name of Contractor : Period of completion :

Agreement No. : Date of completion :

Sr. No.	Nature of hindrance	Date of occur- rence of hin- drance	Date of which hin- drance was removed	Period of hindrance	Signature SE/PE	Remarks
1	2	3	4	5	6	7

---

SE = Site Engineer  
PE = Project Engineer

### PROFORMA FOR APPLICATION BY CONTRACTOR FOR EXTENSION OF TIME

1. Name of the Contractor
2. Name of the work as given in the Agreement
3. Agreement WO
4. Tender amount
5. Date of commencement of work
6. Period allowed for completion as per agreement
7. Date of completion as per agreement
8. Period for which extension of time has been given

Dated      Month      Year

- a) 1<sup>st</sup> extension vide Bank's Letter No.
  - b) 2<sup>nd</sup> extension vide Bank's Letter No.
  - c) 3<sup>rd</sup> Extension vide Bank's Letter NO.
- 
9. Reasons for which extensions have been previously given (copies of the previous applications should be attached)
  10. Period for which extension is applied for and the reasons thereof including hindrances, time for extra work assigned, if any etc.

Signature of Contractor

## **MAINTENANCE OF RECORDS**

### **A. Registers at the site office of the Bank's Engineer :**

1. Measurement Books
2. Drawings register
3. Materials at site register
4. Hindrance Register
5. File and Register for Extra/Variation Items
6. Site Order Book (In triplicate)
7. Site Visit & Instructions Register
8. Certified true copies of the contracts



## **TECHNICAL SPECIFICATION FOR ELECTRICAL WIRING**

### **1.0 GENERAL REQUIREMENTS**

The installation shall generally be carried out in conforming with the requirements of the Indian Electricity Act, 1910 as amended up to date and the Indian Electricity Rules, 1956 framed there under, the relevant regulations of the Electric Supply Authority concerned, and also with the specifications laid down in the Indian Standard I.S. 732 - 1963 Code of Practice (Revised) for Electrical Wiring Installations (system voltage not exceeding 650 volts) and I.S. 2309-1969 Code of Practice for the protection of Buildings and Allied Structure against Lightning and IS 3043 - Indian code of Practice for Earthing. The wiring shall also be according to the I.S specifications, NEC, Local Government Body.

Only the contractor having valid Electrical Contractor Licence of the state shall be eligible to execute the same. The contractor shall be responsible for renewal of the same at the appropriate time.

### **2.0 MATERIALS**

All materials, fittings, appliances, used in electrical installations, shall conform to Indian Standard Specifications wherever these exist. A list of approved materials is attached afterwards. Materials not included in the list shall be got approved by the Architects/Engineer-in-Charge/Owner prior to actual use.

### **3.0 MAIN SWITCH GEAR**

Iron clad switch fuse and isolator units should conform to relevant I.S. Standard. The quick make and break mechanism shall be self interlocked with the cover. In "Off" position there must be two breaks per pole.

Main switch gear shall be properly earthed with two numbers conductors if M.V and one number of L.V.

### **4.0 BUSBAR CHAMBER (B.B.C)**

This shall be totally enclosed, metal clad type fabricated from rust proofed 16 SWG sheet steel on angle iron frame and provided with sheet steel or cast iron detachable front cover and undrilled detachable end plates, suitable for mounting on wall or angle iron floor stand and painted with high quality enamel paint. G.I. bolts and nuts shall be used for assembly with suitable packing materials to ensure dust proof finish. Meters shall be provided on suitable sheet steel boxes. Switch shall be provided with cable end boxes as required.

The depth of B.B.C. shall be 250 mm (minimum). Minimum clearance of phase bars to earth shall be 25 mm and between bus bars shall be minimum 32 mm.

H.C. (High conductivity) copper busbars properly tinned are to be rated at 1000 Amps. per sq. in and Aluminium bus bars (wrought aluminium alloy strip) conforming to relevant I.S. specification at 800 Amps per sq in.

Neutral Busbars are to be rated to carry 100% of phase current upto 200A and 60% for higher. These shall be mounted on DMC/SMC supports of proper dielectric and mechanical strength and shall be appropriately colour coded for identification of Phase with PVC sleeves of 1.1 KV grade throughout the length.

Lettering shall be done for identification of switches as directed. The contractor shall submit fully dimensioned drawing of the board with the physical position of the switches and other components to the Architects for their approval before the same is fabricated.

There shall be two nos of Earth Terminals. Suitable Danger Board shall be provided.

#### **5.0 INTERCONNECTION IN B.B.C, SWITCH FUSE, METERS**

For ratings above 150 Amps these shall consist of insulated copper strips of adequate section considering current density as specified in Clause 4 above. For rating below 150 Amps PVC copper cable tails of appropriate size, terminating in tinned copper sockets may be used considering 1.5 Amp/sq. mm for copper & 1.0 Amp/sq.mm for aluminium. The above are to be enclosed either in sheet metal trunking or conduits so that no part is exposed.

#### **6.0 DISTRIBUTION BOARDS**

These totally enclosed metal clad type Distribution Boards with hinged lids shall be in accordance with I.S. 2147 - 1952 and 2675 - 1966 and B.S. 214 and shall be of welded construction and fabricated from rust proofed sheet steel and finished with anticorrosive stove enamel paint and have provision for fixing on wall and have earthing terminals/terminals.

Power Distribution Boards (400 volts TPN) shall be constructed from 16 SWG sheet steel and Branch Distribution Boards (230 volts SPN from 18 SWG sheet steel).

The MCB shall be mounted on Din rails supports of proper dielectric & mechanical strength. If fuses/fuse banks are used these shall be mounted on moulded DMC/SMC or ebonite supports of proper dielectric and mechanical strength. TPN units should have phase separation barriers.

Cables shall be connected to a terminal by crimped lugs.

Where two or more B.D.B's feeding low voltage circuits are fed from different phases of a medium voltage supply, these B.D.B's shall be installed atleast two metres apart or otherwise in a different direction to prevent access to the both DBs at a time.

All three phase power distribution boards shall be properly earthed with two number 10 S.W.G galvanised iron wires and provided with suitable Danger Board. All SPN B.D.B's shall be properly earthed with one number 10 SWG galvanised iron wire each or with insulated copper PVC wire of adequate ratings in case of concealed wiring as per the specifications.

#### **7.0 SWITCHES**

All switches for lights, fans and plug points shall be piano type switches, unless specified otherwise.

#### **8.0 CABLES AND CONDUCTORS**

All cables shall conform to I.S-692, IS-7098, IS-1554 (Part-I) 1964 and IS 694-1990 or latest. Conductors of all cables except for flexible cables, shall be of aluminium, unless specified otherwise.

## **9.0 FLEXIBLE CABLES**

Conductors of flexible cables shall be of copper. The minimum size of core acceptable is 1.50 sq.mm.

## **10.0 INSTALLATION OF MAIN SWITCH BOARD, BDB'S MAINS, SUB-MAINS, DISTRIBUTION WIRING TO INDIVIDUAL POINTS**

The exact positions of all main switch board, BDB's and all runs of mains and submains, and distribution wirings to individual points including the exact position of all light fittings and switch boards shall be first marked on the buildings and shall be approved by the Engineer-in-Charge before actual commencement of the work.

The D.Bs shall generally be installed at a height of 2.13 m (7 ft) from floor level.

## **11.0 INSTALLATION OF SWITCH BOARDS**

These shall be installed at a height of 1.3 mtrs (4'-3") and above the floor level.

## **12.0 INSTALLATION OF CEILING FANS**

Unless otherwise specified all ceiling fans shall be hung not less than 2.75 M (9 ft) above floor. The suspension and clamp shall be painted with approved paint without involving extra cost.

## **13.0 INSTALLATION OF FLUORESCENT LIGHT FITTINGS :**

Where these are suspended from ceiling by two down rods, or fixed to ceiling/beam directly, at least one fixing to the ceiling/beam shall be made with Mechanical/Metal fasteners. Electrical drill only shall be used while making holes for the fasteners which shall be capable of sustaining at least 15 kg of dead weight.

The down rods and accessories shall be painted with approved paint without involving extra cost.

Unless otherwise specified these should be suspended 2.60 M (8'-6") above the floor or as per direction of Owner/Architect to match interiors.

## **14.0 INSTALLATION OF EXHAUST FANS**

Exhaust Fans shall be fitted by means of rag bolts embedded or on suitable size block board (12 mm thick) in the wall/window panels. The required holes in the wall shall be made and finished neatly with cement plaster and brought to the original finish of the wall. In case of block board mounting all fixing, cutting shall be made by the electrical contractor in coordination with civil/interior decoration contractor without extra cost.

## **15.0 INSTALLATION OF SOCKET OUTLETS**

No socket outlet shall be provided in the bath room at the height less than 130 cms (4'-3") from the floor.

No switches shall be provided inside the bath rooms, unless approved by the Engineer-in-Charge.

Socket outlet at locations other than bath rooms shall be either 25 cms (10") or 130 cms (4'-3") from the floor.

## **16.0 INSTALLATION OF ELECTRIC MOTORS**

Electric Motors shall be earthed either with 2 numbers SWG 6 G.I. wires, if M.V. and 1 number if L.V. or insulated copper PVC wires of adequate sizes as approved by Owner/Architects without any extra cost to the Owner.

## **17.0 TESTING OF INSTALLATION**

Before a completed installation or an addition to an existing installation is put into service, the following tests shall be carried out by the contractor in presence of the Engineer-in-Charge/Owner/Architects.

### **a) Polarity of switches**

It must be ensured by test that all single pole switches have been fitted on the live side of the circuits they control.

### **b) Insulation Test**

- i) By applying a 500 volt megger between earth and the whole system of conductors or any section thereof, with all fuses in place and all switches closed, all lamps in position or both poles of installation otherwise electrically connected together :- The result in megohm shall not be less than 50 divided by the number of points on the circuit, and should not be less than 1 megohm.
- ii) Between all conductors connected to one phase and all such conductors connected to the neutral or to the other phase conductors of the supply after removing all metallic connections between the two poles of the installation and switching on all switches. The insulation resistance shall be as in (i) above.

### **c) Earth continuity Test**

The earth continuity conductor including metal conduits, and metal sheaths of cables in all cases shall be tested for electrical continuity. Electrical resistance of the above along with the earthing lead but excluding any resistance of 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.

### **d) Earth Resistance Test**

To ensure effectiveness of installation earth, the value of earth resistance shall be within 5 ohm for installation capacity upto 5 KW and one ohm for installation of higher capacity.

- 18.0** The completed work will be taken over only if the results obtained in above tests are within the limits mentioned above, and in accordance with I.E. Rules.

On completion of the installation work, a certificate shall be furnished by the contractor, countersigned by the certified supervisor under whose direct supervision the installation

was carried out. This certificate shall be in a prescribed form as required by the local Electric Supply Authority. The installation shall not be considered as complete unless the installation is got inspected and passed by the Electrical Inspector, Directorate of Electrical Safety, of the local State Government/Authority. The contractor shall have to take all initiatives and follow up the matter at his own cost for early approval of the installation for permanent energisation of the installation from the Directorate of Electrical Safety, of the local State Govt/Authority. No extra amount will be paid on this account. However statutory fees, if any, will be reimbursed to the contractor on production of documentary evidences/official money receipts.

**19.0 SPECIAL SPECIFICATIONS**

- a) Before fixing all switches, fittings etc. these should be produced before Engineer-in-Charge and get approved.
- b) All metal switch boards and switch/regulator boxes to be used in work shall be painted with two coats of anti rust primer (red oxide paint) prior to erection. After erection these shall be again painted with two coats of enamel paint of approved quality and shade.
- c) Before execution of any portion of conduit work for wiring a neat proper layout should be made out by the contractor and got approved from the Engineer-in-Charge. For this purpose contractor is advised to get acquainted with the layout drawings.
- d) While laying the conduits for concealed wiring in the ceilings/beams/columns/walls/ partitions/modular furniture etc, the contractor must ensure that all the inlets and both ends of the conduits are plugged to stop entry of foreign materials so that no difficulty arises during drawing of wires later .
- e) Damage to any fitting during erection and before handing over the installation by contractor shall be set right or replaced by the contractor at his own cost.
- f) Caution Board of proper size wherever required, shall be provided, as per I.E.E. regulations for which no extra payment will be admissible.
- g) Any repairs done to wall etc. should match with the surrounding surface otherwise same will be got done through Building Contractor at the cost of the Electrical Contractor.
- h) Earthing Installation shall be done in the presence of Engineer-in-Charge or his representative.
- i) The installations should not be energized without adequate earthing.

- j) The I.C. switches and Distribution Fuse Boards shall be provided with neat lettering in block letters with paint for identification of the I.C. switches and for the points connected to each fuse way of the D.B's for which no extra payment will be admissible.

k) Completion Drawings

The contractor shall be required to submit along with Final bill, the undernoted drawings on tracing papers, along with three copies of Ammonia print each.

1. Plan (as per structural drawing) of each floor (not less than 1:100 metric scale) showing :-

- i) Location of Main Switch Board, Distribution boards (with the circuit numbers controlled by them).
- ii) The runs of mains and submains.
- iii) Location of lights, fans, wall sockets, other power consuming devices together with type of fittings and fixtures including circuit numbers.
- iv) Position of Lightning Conductors and route of running conductor.
- v) Position of Earthing Stations for light and power and Lightning Conductor Installation.
- vi) Following information are to be given on all the drawings :
  - a) Name of work with job no. Accepted Tender No.
  - b) Date of completion
  - c) Name of Place
  - d) Name and Signature of Contractor
  - e) Scale of Drawings.

2 Schematic lines layout diagram of each floor showing (i) Layout and connections of Main and Sub-board, B.D.B. having descriptions of the size, capacity, type and their numbers, the system and the source of supply, (ii) Location, Size, Type, length of main and sub main cables (iii) Loading of each B.D.B. indication of phases, Departmental mark on each B.D.B and switchgear.

The drawings shall be very neatly drawn and submitted properly without folding them.

3. Cable route should be marked on site plan with measurements from permanent structures.

## **TECHNICAL SPECIFICATION FOR CONDUIT WIRING SYSTEM**

### **1.0 TYPE AND SIZE OF CONDUIT**

All conduit pipe shall be screwed type, solid drawn or welded and with black stove enamelled surface or galvanised and of thickness conforming to IS : 9537 Part II of 1981 (or latest revision) in all respects. The conduits are to be free from burrs and internal roughness. No conduits less than 20 mm in dia shall be used, unless specified.

### **2.0 ACCESSORIES**

Only screwed type of accessories are to be used.

### **3.0 CONDUIT JOINTS**

The conduit shall be properly earthed. In long distance straight runs of conduit inspection type screwed couplers are to be provided at reasonable intervals on running threads with couplers and jamnuts. Threads on conduit pipes in all cases shall be between 13 mm to 27 mm long sufficient to accommodate pipes to full threaded portion of couplers or accessories. Cut end of conduit pipes shall have no sharp edges or any burrs left to avoid damage to insulation of conductor while pulling them through such pipes.

### **4.0 PROTECTION AGAINST DAMPNESS AND RUST**

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

To protect against rust the outer surface of the conduit and accessories shall be painted and the bare thread portion is to be painted with anti-corrosive preservative.

### **5.0 FIXING OF CONDUITS**

Conduit pipes shall be fixed by heavy gauge saddles and or fibre/metal fasteners as applicable, secured to wall/ceiling by screws driven into synthetic fibre plugs or rawl plugs or phil plugs at an interval of not more than 76 cm apart for vertical run and 60 cm apart for horizontal run. But on either side of couplers or bend of similar fittings-saddle shall be fixed at a distance of 30 cm from the centre of such fittings. The minimum thickness for saddles shall be 24 SWG for conduits upto 25 mm dia, and 20 SWG for larger sizes.

### **6.0 BENDS IN CONDUITS**

All necessary bends in the system including diversion shall be done by bending the pipes, or by inserting suitable inspection type bends, elbows or similar fittings, or by fixing cast iron inspection boxes whichever is most suitable.

### **7.0 OUTLETS**

All outlets for fittings, switches etc. shall be fixed on boxes of suitable metal for either surface mounting system or flush mounting system. In case of cast iron boxes the wall thickness shall be at least 3 mm and in case of welded mild steel sheet box the wall thickness shall not be less than 16 gauge. Except where otherwise stated 3 mm thick insulated laminated sheets shall be fixed on the front with screws. Where conduits are terminated special care shall be taken in employing double jam nuts, for securely fixing conduits to outlets so as to prevent any possibility of damages to cables when drawn.

#### **8.0 CABLES TO BE USED**

Unless stated otherwise only single core FRLS Type PVC insulated cables of approved manufactures shall be used for wiring in conduit system. The number of single core cables drawn in one conduit shall not be greater than maximum set out in Table II of Indian Standard (I.S. 732-1963) Code of Practice (Revised) for electrical wiring installation (system voltage not exceeding 650 volts).

#### **9.0 LOOPING IN SYSTEM**

Distribution wiring in conduit to light, fan plug points etc shall be done in looping system. In this system no joints or connections shall be made anywhere of the system except at terminating points such as at terminals of switches, ceiling roses, etc and in case of socket outlets at the socket terminals.

#### **10.0 EARTHING CONTINUITY WIRES**

All three pin 6 Amps plug points and metallic fan regulator cover should be provided with earthing attachment by NO. 14 SWG G.I. wires for surface wiring and 1 no. 1.5 Sq.mm PVC insulated copper wire for concealed wiring, unless specified otherwise.

Three pin 16 Amps power plug point should be provided with earthing attachment by No. 14 SWG G.I. wire for surface wiring and 1 no. 2.5 sq.mm PVC insulated copper wire for concealed wiring, unless specified otherwise.

Conduits and accessories for surface distribution wiring should be provided with earthing attachment by 14 SWG G.I. wire, unless specified otherwise.

For looping earthing G.I. wire shall be run on conduits being fixed with saddles. This wire shall not be normally visible after installation when run with the conduit. Where the wire has to be taken without the conduits this will be fixed with 'U' nails at 2' feet intervals.

#### **11.0 PAINTING**

Conduit and all conduit fittings and accessories shall be painted with two coats matt paint. Painting of conduits shall be done to harmonize with colour of bearing surface, i.e. wall, joists, trusses etc. after installation and as approved by the Engineer-in-Charge.



## **TECHNICAL SPECIFICATION FOR CONCEALED CONDUIT WIRING SYSTEM**

- 1.0** Concealed conduit wiring system shall comply with all requirements for surface conduit wiring system as specified above and in addition conform to the requirements specified below :

**2.0 MAKING OF CHASE**

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

**3.0 FIXING OF CONDUIT IN CHASE**

The conduit shall be fixed by means of staples, J-Hooks or by means of saddles not more than 60 cm apart. Fixing of standard bends or elbows shall be avoided as far as possible with a long radius bend which will permit easy drawing in of conductors. All threaded joints of metallic conduits shall be treated with some approved preservative to secure protection against rust.

**4.0 INSPECTION BOXES**

Suitable inspection boxes shall be provided when necessary to permit periodical inspection and to facilitate removal of wires. These shall be mounted flush with wall.

For longer runs of conduit involving more than one bend, one inspection box/draw-in box shall be used after one bend.

**5.0 TYPES OF ACCESSORIES TO BE USED**

All outlets such as switches, socket outlets, shall be flush mounting type with cast iron or MS boxes with a cover of approved insulating material. The switches and other outlets shall be mounted on such boxes as would be approved. The metal box shall be efficiently earthed with conduit by means of earthing attachment with suitable size of PVC insulated copper wires, running inside the conduit.

**6.0 CONDUITS**

- i) Steel-Black enamelled thread type M.S. conduits with thickness conforming to IS 9537 Part II of 1981 (or latest revision) with heavy duty accessories and FRLS type PVC conduits conforming to IS 9537 Part-III of 1981 (or latest revision) with PVC accessories shall be used as applicable and specified in BOQ.

For roof slabs - These shall be pre-laid during casting of floor/roof slab. No. of wires drawn through the same shall not exceed the number of specified I.S. Code.

For vertical drops in wall to switch boards - Minimum size shall be 20 mm.

- ii) Maximum capacity of conduits for drawing in of PVC insulated cables shall be as follows :

650/1100V PVC copper wire	In 20 mm dia conduit	In 25 mm dia conduit	In 32 mm dia conduit
1.5 sq.mm	4 Nos	8 Nos	12 Nos
2.5 sq.mm	3 Nos	6 Nos	10 Nos
4.0 sq.mm	2 Nos	6 Nos	8 Nos
6.0 sq.mm	-	5 Nos	7 Nos
10.0 sq.mm	-	3 Nos	5 Nos

Maximum number of PVC insulated 650/1100V grade aluminium/copper conductor cable are as per CPWD General Specification of Electrical Works Part-I (Internal), Page 41, 1994.

**TABLE-I**

**Maximum number of PVC insulated 650/1100V grade aluminium/copper conductor cable conforming to IS 694-1990**

Nominal Cross Sectional Area of Conductor in sq.mm	20 mm		25 mm		32 mm		38 mm		51 mm		64 mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1.50	5	4	10	8	18	12	-	-	-	-	-	-
2.50	5	3	8	6	12	10	-	-	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-	-	-
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	6	9	7
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

- Note :
1. The above tables shows the maximum capacity of conduits for a simultaneous drawing in of cables.
  2. The columns headed 'S' apply to runs of conduits which have distance not exceeding 4.25 m between draw in boxes and which do not deflect from the straight by an angle of more than 15 degrees. The columns headed 'B' apply to runs of conduit which deflect from the straight by an angle of more than 15 degrees.
  3. Conduit sizes are the nominal external diameters.

## **7.0 FISH WIRE**

18 SWG GI wire shall be used and it shall protrude the conduit ends by 9 inches.

## **8.0 CONDUIT LAYING IN FLOOR/ROOF SLABS BEFORE CASTING**

PVC/Polythene/GI conduit shall be laid straight as far as practicable and properly placed including binding with the steel reinforcement rods with 22 SWG GI wire so that proper positions of conduits are maintained.

While laying the conduits for concealed wiring in the ceiling or in the beams and columns and before casting, the contractor shall ensure that both ends of the conduit are plugged by means of dead-end socket or otherwise so that any foreign matter can not enter the conduit and choke them.

All precaution must be taken while laying the conduits on the slabs, R.C. walls, columns etc. and the contractor shall rectify at his own cost if any defects are found during process of drawing cables through the concealed prelaidd conduits.

Each PVC/polythene conduit shall be provided with protruding length of not less than 9 inches on free end of the conduits.

There shall be no intermediate joints in one straight run of conduit.

All ceiling outlets shall be terminated in a round CI/GI circular box/deep box to suit standard size ceiling rose or/and rectangular C.I./M.S. junction box or Fan Hook Box as the case may be.

It will be mandatory for the contractor to get the layouts approved by the Engineer-in-Charge/Architect when the conduits are laid and bound to steel reinforcement rods, before he can release the work for casting of floor/roof.

## **9.0 CONDUCTOR BOXES, DRAW-IN-BOXES : JUNCTION BOXES**

These shall be constructed from 16 SWG M.S. sheet and have M.S. cover. Minimum size for connector boxes is 6" x 4" and for Draw-in-Boxes 4" x 4" where steel conduits are used and it shall be M S or PVC with bakelite cover (3 mm thick) with PVC conduits wherever specified.

## **10.0 FAN HOOK BOXES**

These shall be 100 mm (4") dia x 75 mm (3") deep, constructed from 16 SWG M.S. sheet, and provided with one 12 mm dia M.S. rod 300 mm (12" long).

## **11.0 PAINTING**

Outside of wall switch boards, connector boxes & draw-in-boxes and other C.I./M.S. accessories shall be painted with two coats of anti-rust paint in addition to other painting instruction given elsewhere.

## **TECHNICAL SPECIFICATION FOR CABLE INSTALLATIONS**

### **1.0 GENERAL**

All HV Cables ( upto 33 KV earthed system) shall be either paper insulated SL type or XLPE insulated aluminium conductor cable conforming to I.S. 692 and I.S. 7098 respectively.

All Medium Voltage and Low Voltage PVC insulated and armoured/unarmoured cables shall conform to IS 1554 Part-I-1964 and of 1,100 volt grade.

Old and used cables must not be used for installation. Only one make of cable shall be used. All cables brought to site must be tested and got approved by the Engineer-in-Charge before these can be laid. The cables shall be despatched to site on wooden drums with ends sealed. Exact lengths shall be determined by the Contractor after measurement at site.

The underground installation of cables shall be generally conforming to I.S. 1255-1967, Code of Practice for installation and maintenance of underground cables (upto including 33 KV).

### **2.0 LAYING OF CABLES**

#### **a) Direct in Ground**

Trenches shall be 750 mm deep (minimum) for LT Cables and 1.2 M (4'-0") deep (minimum) for HT Cables from ground level and trenching work shall include all pumping and bailing out water. These trenches shall be wide enough to accommodate all the cables with brick separations as per the requirements specified in the relevant I.S.

When more than one multicore cable is to be laid in the same trench, a minimum horizontal interaxial spacing between cables will be as per relevant I.S.

After excavation of the trench of proper size, the bottom of the trench shall be dressed and levelled and filled with a 75 mm layer of fine sand. The cable shall then be laid with bricks on both sides of the cable continuously. After having the space within the bricks, filled and packed upto a level of 75 mm (3") above top of cable with fine sand, the top layer of bricks shall be placed side by side in continuous series as protective cover. Total No. of bricks required being 16 per metre run. The remainder of the trench shall be filled with riddled soil, well rammed and watered to a level of 75 mm (3") above surrounding ground level. The ground level surface of the whole trench route shall be restored properly after completion of cable laying.

#### **b) Inside Building**

Cables shall be laid on walls/ceiling/structure, unless specified otherwise, with M.S. brackets and suitable clamps or over claw type aluminium cleats fixed on M.S. brackets, spaced not more than 450 mm apart. G.I Bolts of suitable sizes are to be grouted on the wall properly for fixing the brackets.

- c) Minimum bending radius permissible is 12D for MV Cables and 20D for HV cables. At joints and terminations, the individual core of multicore cables should never be bent so that the radius is less than 15 times the diameter over the insulation.

No cable jointing is allowed between two terminal points.

### **3.0 CABLE JOINTING**

All cable joints shall be carried out by experienced and Licenced jointers under strict supervision. Electro plated brass cable glands, aluminium/tinned copper cable sockets and approved jointing materials must be used. The price for cable jointing and finishing the ends of the cable shall include all materials and shall also provide for tools and plants for the work. The cable armouring is to be properly terminated. All cable accessories and other associated materials shall conform to Indian Standard Specification where applicable. Proper earthing of cable glands and armouring shall be included in the job.

### **4.0 TESTING OF CABLES**

All cables shall be tested for insulation resistance with megger - 5,000V constant pressure megger insulation tester for HT Cables and 1,000 V constant pressure megger for MV Cables, before installation.

After installation and end termination, the cables shall be again subjected to the above test. Insulation value for HT Cables shall not be less than 100 megohms and for MV Cables 1.0 megohm.

After laying and jointing, the HV Cables shall be subjected to high voltage pressure test before commissioning, the test voltage being as specified in I.S.1255-1967 or latest.

### **5.0 TESTING OF INSTALLATION**

Before the completed installation is put into service or handed over to Owner, the installation is to be subjected to the above tests to the satisfaction of the Engineer-in-Charge. The completed work will be taken over only if the results are acceptable to the Architects/Owner.

## **TECHNICAL SPECIFICATION FOR EARTHING INSTALLATION**

The installation shall generally conform to IS 3043 - Indian Standard Code of Practice for Earthing, as amended upto date.

### **1.0 EARTHING**

#### **a) Pipe Electrode**

The earthing electrode shall be galvanised steel pipe of Class B medium quality - 50 mm (2") dia bore and 3.04 M (10') long. A hole shall be provided at 100 mm (4") from the top end to receive a 13 mm (1/2") dia galvanised bolt and the bottom end shall be chisel cut for easy penetration into soil.

A suitable trench shall be excavated about 0.45 M (1'-6") deep and the pipe electrode driven to an average depth of 3.35 M (11'-0") below ground level. The top end of the electrode shall be at an average depth of 0.30 M (1'-0") below the ground surface.

Alternate layers of Charcoal or Salt and Coke to be provided for Electrode as per I.S. Code of Practice unless specified otherwise.

One no. 6 SWG G.I. wire (unless otherwise specified) shall be connected securely on the properly cleaned surface at the top end of pipe electrode by means of a 100 mm (4") long x 13 mm (1/2") dia G.I. bolts, double nuts and double washers. The earth lead conductor shall be protected mechanically by means of a continuous length of G.I. pipe (Class A) having 13 mm (1/2") inside diameter upto a height of 0.60 M (2'-0") above ground and the same shall be completely filled with bitumen compound and topped upto overflowing.

#### **b) Plate Electrode**

Where plate electrode for earthing is to be employed, the size of the plate shall not be less than 0.6 m x 0.6 m x 6.3 mm thickness for G.I plate and 0.6 m x 0.6 m x 3.15 mm thickness in case of copper plate.

The plate shall be buried vertically with the top at a minimum of 4.0 M below the ground level for sandy soil and 2.0 M below the ground level for normal soil. In order to place the same at the prescribed depth, the dimension of pit to be excavated shall be 0.9 m x 0.9 m x 3 M deep. The plate shall be placed in position by the contractor only after the inspection of excavated pit and approval is obtained from the Architect/Engineer.

One no. 50 mm x 6 mm G.I flat (for electrical installation) or one no. 25 mm x 6 mm GI flat (for Lighting conductor) should be connected to the plate at two points by means of 65 mm long 12 mm dia galv bolts, nuts and galv washers. In case of copper plate copper flat of not less than 32 mm x 6.0 mm shall be used as the earth lead. Brass bolts, nuts and washers shall be used for fixing. All other details shall be in accordance with IS 3043-1987. No joint on the earth lead conductor is permitted. Every care be taken to ensure that the ends of the wire/flats have been securely clamped by the bolt on cleaned surface of the plate and established a good electrical contact.

After placing the plate the earth lead conductor shall be protected by means of a continuous length of G.I pipe (Class-B) having 50 mm dia bore or depending upon the size of the lead, right from the plate upto a height of 0.60 metre (2 ft) above ground level. The whole length of pipe shall be filled with bituminous compound of approved make and brand. The molten compound shall be poured from the top end the pipe and topped upto overflowing.

The plate electrode shall have a 50 mm galvanized iron water pipe buried vertically and adjacent to the electrode and reaching upto the center of the plate. The upper end of the pipe shall be at least 5 cm above the bottom of the inspection pit and with wire mesh, funnel, etc as per IS specification.

## **2.0 MASONRY INSPECTION PIT**

The inspection pit for the earth station shall be approx 0.56 M x 0.56 M (1'-10"x1'-10") outside dimensions and approx 0.45 M (1'-6") deep when completed, having 5" thick cement brick work with 1st class bricks in cement mortar (6:1) both inside and outside plastered 19 mm (3/4") thick and neatly cemented 1.60 mm (1/16") thick, both inside, outside and top. The opening on top shall be provided with a C.I. ring with lockable cover fixed flush with ground surface.

All the excavations shall be duly back filled, dressed and rammed.

## **3.0 LOCATION FOR EARTH ELECTRODES**

Electrodes shall be buried at least 2 M (6'-6") away from the building pole or object to be earthed. However, earthing electrodes for L.C. installations should be as close to the down conductors as possible.

Electrodes, when installed in parallel, shall not be placed less than 2 M (6'-6") apart and preferably placed at distances greater than twice their lengths.

## **4.0 EARTH BUSBAR**

### **a) Galvanised M.S. Flat**

The busbar shall be of suitable size and length, as specified in the Schedule of Items, heavily galvanised and having adequate number of drilled and tapped holes 30 mm apart, complete with G.I. bolts, nuts, washers for securely connecting the earth leads and earth continuity conductors. The busbar shall be fixed on wall, having clearance of 6 mm from wall with spacing insulators with at least 13 mm (1/2") G.I. rag bolts spaced about 0.46 M (1'-6") apart.

### **b) Copper Flats :**

To be used, as specified, in the Schedule of Items, where earthing requirements are more stringent. Brass bolts, nuts washers shall be used for connections.

## **LIST OF MATERIALS OF APPROVED MAKES/BRAND**

The contractor shall use materials in their works subject to inspection prior to dispatch, by Owner or his authorised representative of any materials, as deemed necessary in accordance with the following list. All materials not otherwise specified shall be in accordance with the latest Indian Standard Specification, where such exists and subject to prior approval of Owner/Architect. The contractor shall be bound to offer sample of materials, which are claimed to be conforming to I S Specifications, for testing at an approved Test Laboratory as and when directed by Owner/Architect.

Contractor shall purchase all materials from the makers or their authorized stockists only. Necessary documentary evidences must be produced to the Owner or their authorised representative on demand. Contractor shall be bound to supply items of any make of the items as per the choice of the Owner/Architect.

Sl.No.	Description	Make
1.	LT Switch Board Panel/ APFC	: Locally fabricated LT Panel with all components of from SIEMENS/ L&T/ GE/ ABB/ Schneider/ LEGRAND/hager/ INDOASIAN-optium only.
2.	CFS/Switch Fuse with HRC fuses	: L&T/ SIEMENS/ GE/ ABB/ Schneider/ Anchor
3.	Changeover (ATS with handle/ Manual) switch	: SOCOMEC / L&T/ SIEMENS/ GE/ ABB/ Schneider/ hager
4.	MCCB and Accessories	: L&T(D-Sine) / Legrand (DPX3)/ SIEMENS (VLseries)/ HAGER h3+/ Schneider Electric (ACTI-9(N)/ Easy-Pact CVS) / ABB (Emax) / hager/ INDOASIAN-optium
5.	MCCB/MCB Distribution Board (IP54)	: L&T (Exora)/ Legrand (Ekinox)/ SIEMENS -ALPHA/ HAGER/ Schneider Electric ACTI-9(N)/ ABB/ hager (novella+)/ INDOASIAN-optipro
6.	RCBO, RCCB, MCB & MCB Isolator	: L&T(Exora) Legrand (DX3)/ SIEMENS (Betaguard)/ HAGER/ Schneider Electric ACTI-9(N)/ ABB S200M/ hager/ INDOASIAN-optipro
7.	ACBs with Display	: L&T (U-Power-OMEGA)/ Legrand (DMX3MP4)/ SIEMENS (3WL-ETU45B)/ Schneider Electric (Masterpact MVS)/ ABB (Emax)PR122/ hager (hw)
8.	Current Transformers	: AE/ KAPPA/ Rishabh/ L & T
9.	KWH Meter/ Analogic/ Digital Mechanical (A/V/F/PF/KWh/kVAH/kVAH)	: GE /ABB (M1M12)/Secure /Selec / SCHNEIDER – (6400NG+)/ SIEMENS
10.	Ammeter & Volt Meter (Analog)	: AE/ Rishabh/ MECO/ ENERCON/ L & T
11.	Selector Switch for Volt-meter/Ammeter	: Kaycee/ L & T (Slazer) / Siemens/ ABB/ Rishabh
12.	Contactors and Timer (Modular Type)	: Legrand / SIEMENS/ L&T/ ABB/ Selec/ BCH/Schneider Electric
13.	PVC Terminals	: ESSEN/ ELMEX/ L&T
14.	1.1 KV grade PVC/XLPE aluminium/copper conductor cable (armoured/unarmoured)	: GLOSTER / FINOLEX / POLYCAB / KEI / HAVELL'S
15.	1100V grade PVC insulated and sheathed and PVC insulated copper conductor wire/flexible wire	: FINOLEX/ POLYCAB/ HAVELL'S/ RR-KABEL / NATIONAL/ KEI



16.	Telephone Wire	:	RR-KABEL / RAJANIGANDHA / DELTON / POLYCAB
17.	Cable Lag	:	Dowells/ Comet/ Braco
18.	Cable Gland	:	Dowells/ Comet/ Braco
19.	Steel Conduit (ISI/4768 Part 2 2003 confirm marked) Black enameled/galvanized	:	BEC/ NIC/ AKG/ RM-CON
20.	PVC Conduits (MMS)/Channels and accessories	:	BEC/ Norpack/ Precision/ Polycab/ CAP/AKG.
21.	G I Pipe	:	TATA/ ITC/ BST/ Jindal
22.	Ceiling Rose (3 Plate)	:	Anchor/ Precision/ SSK/ Rider
23.	20A, 2 Pin and scrapping earth type switch socket and plug socket	:	Legrand/ MK/ Havell's/ ABB/ L & T/ Schneider
24.	Holder	:	Kay/MMP/EPP/Anchor/Precision/SSK
25.	Modular Type Switch/Socket/ M.S box/plate	:	MK-Blenze, eq. HONEYWELL (Orna)/ ABB – Chiara/ Legrand - Myrius /Crabtree-Athena / hager-insysta/ Schneider Electric – Livia/ INDOASIAN-ELVERA.
26.	RJ-11 Socket Outlet (Modular)	:	MK-Blenze, eq. HONEYWELL (Orna)/ ABB – Chiara/ Legrand - Myrius /Crabtree-Athena / hager-insysta/ Schneider Electric – Livia/ INDOASIAN-ELVERA.
27.	Indication Lamp (LED Type)	:	Schneider Electric/ Legrand/ L&T/ Siemens
28.	Buzzer/Call Bell	:	Bajaj/ Anchor/ Crabtree/ Rider
29.	Bulk Head Light Fittings	:	Philips/ GEC/ Crompton/ Bajaj
30.	LED Light Fittings	:	Philips/ Wipro/ Jaquar/ Bajaj
31.	Wall/ Ceiling/ Exhaust Fans	:	Crompton/ Bajaj/ Havells/ Usha/ Orient/ Almonard
32.	Cable Tray and Accessories	:	Cablofil (Legrand)/ TATA Steel/ Jindal/ Profab/ Indiana/ Asian Ancillary Corporation/ Metalemms Or Equivalent Reputed Make (GI hot double dip)
33.	Scrapped earth type socket	:	Legrand/ABB/ Schneider/ hager
34.	Contactore type DOL/Star-Delta Starter	:	SIEMENS/ L&T/ CROMPTON GREAVES/ GE
35.	Paint	:	Shalimar Paint Colour & Varnish Co Ltd/Jenson & Nicholson (I) Ltd/ British Paint (I) Ltd/ Berger/Asian
36.	Contactore	:	BCH/ ABB/ Schneider Electric (EasyPact TVS)/ L&T/ hager
37.	Capacitor & Relay	:	Epcos/ ABB/ L&T/ SIEMENS/ Schneider Electric/ hager

**ESTIMATED BILL OF QUANTITY FOR ELECTRICAL INSTALLATIONS  
WORK AT STATE BANK OF INDIA, MOTIRAM ADDA BRANCH (NEW - SHIFT-  
ING - 65081) UNDER RBO-II – AO : Gorakhpur**

Sr No.		Item Description	Unit	Qty.
		<b>SECTION-I- INTERNAL ELECTRICAL WORKS, WIRING FOR UPS AND AC</b>		
A	Design	Supply, installation, testing and commissioning ( SITC) of new fully compartmentalised, wall/ Floor mounted, if floor mounted than stand should be made of MS channel/angle grouted to floor with the panel 450 mm above ground level, bottom/top cable entry, front operating, dead back main electrical panel made of 16g CRCA sheet steel painted with one coat of red oxide primer and two coat of outdoor type synthetic enamel paint (spray painted) after de greasing, de rusting and phosphading, with two earth studs, 30X6 mm G.I. Earth bus, SMC/DMC insulator as required and comprising of the following:		
	Incoming	(i) One 4P, 415 V, 250A, 35 KA breaking capacity MCCB with adjustable thermal and fixed magnetic release.  (Mains I/C)  (ii) One 4 pole, 415V, onload, 200A, changeover switch with rotary handle. (Generator I/C)  (iii) Set of CTs having 500/5 A CT ratio and 0-500V Multi functional Digital Meter (A/V/F/PF/KW/KWH/KVAH - ABB M1M12/ Schneider 6500 NG+) and LED indicating lamp for each phase. (Mains I/C)		
	Outgoing	(i) One 415V, 4P, 100A, 25KA breaking capacity MCCB (AC) and Connection to this MCCB is to be done after the main incomer MCCB and before changeover. (One for AC in common hall)  (ii) Four nos. 415V, 4P, 100A, 25KA breaking capacity MCCB with adjustable thermal and fixed magnetic release out going. (One for UPS, One for power, One for ATM and One for L&F)  (iii) Three no. 415V, 4P, 63A, 10 KA breaking capacity MCB (Two for light, AC in BM chamber and One for Signage)  (iv) Two no. 230V, DP, 40A, MCB C-series, 10 KA breaking capacity (One for glow sign board and one spare) Two  Bus bar chamber with R,Y,B and N bus bars made of 25X10 mm Aluminium (Indal, Hindalco, Balco)(one for AC MCCB before Changeover and one for rest of the panel)		
	Design Specification	Danger plate should be provided. All MCCB should be with external rotary handle, separator sheet and spreader terminals. Minimum phase to phase distance 32 mm, phase to neutral and earth 26 mm. Metallic partition should be provided between adjacent cubical/compartment. Cubical should be made of vermin and dust proof by means of suitable gasket around all door/covers removable gland plates to be provided. All bus bar should be sleeved by heat shrinkable PVC red, yellow, blue and black coloured. All wiring to be done by PVC insulated 1100V grade copper flexible conductor wire of following size. CT circuit : 2.5 sq. mm		

		<p>PT circuit : 1.5 sq. mm all wires to be provided with appropriate crimping type lugs/ferrules for termination.</p> <p>Protection shrouds to be provided on incoming side of incomer and on normally live parts when cubical door is opened. Bakelite barriers of 4 mm thickness shall be provided on incoming and outgoing side of incomer.</p> <p>Approval of general layout, manufacturing and single line diagram drawings from consultant/Bank's Engineer is required before commencing manufacture and the panel should be tested in the presence of Consultant/Bank's Engineer at manufacturer's premises before dispatch to site along with HV withstand and insulation resistance test reports.</p>	Set	1
		<p>L T Switch Board Panel Approve make: Locally fabricated LT Panel with all components of S. No. 01 of SIEMENS/ GE/ ABB/ Hager/ Schneider/ LEGRAND Make.</p>		
2		<p>Supply &amp; installation on angle iron frame of 4-way TPN distribution board double door comprising incomer 63 A 4P RCCB 300 mA and with 03 Nos 40 A and 09 Nos 6-32 A SPMCBs as outgoing. All MCB to be of C series, 10 kA with blanking plates for blank slots; if required. Complete connection testing etc. in all respect (TPN-DB for Raw Power/ AC circuit).</p>	Set	1
3		<p>Supply &amp; installation on angle iron frame of 4-way TPN distribution board double door (MS/ Metal) comprising with 63 A 4P-MCB 10 KA incomer and 4 X 40 A SP MCB and 8 nos. 6-32 A outgoing, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates (One UPS TPN-DB to be provided in UPS Room).</p>	Set	1
4		<p>Supply &amp; installation on angle iron frame of 4-way TPN distribution board double door (MS/ Metal) comprising with 63 A FP - MCB 10 KA incomer and 2 X 40 A SPMCBs and 8 nos. 6-32 A outgoing, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates (One For ATM Lobby - 02 Nos. 25A-SPMCBs for AC power circuit. 02 Nos. 40Amp SPMCBs for UPS power, MCB of rating 6A for light circuits and 25A for power/raw power circuit</p>	Set	1
5		<p>Providing &amp; installation on angle iron frame of 8 (2 + 6) way SPN distribution board (MS/ Metal) with metallic cover/ Door comprising of one 40 Amp in coming DP-RCCB and 06 nos. 6A-25A, 10kA out going SPMCB All MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect. (DBs for Light &amp; Fan circuit, 6A SP-MCB for Light &amp; Fan circuits)</p>	Set	3
6		<p>Providing &amp; installation on angle iron frame of 8 (2 + 6) way SPN distribution board (MS/ Metal) with metallic cover/door comprising of one 40 Amp in coming DP-MCB and 06 nos. 6A-25A, 10kA out going SPMCB All MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect. (01 DB for UPS circuit, 10A SP-MCB for UPS circuits)</p>	Set	2
7		<p>Providing &amp; installation on angle iron frame of 6 (2 + 4) way SPN distribution board (MS/ Metal) with metallic cover/door comprising of one 32 Amp in-coming DP-MCB and 04 nos. 6A-25A, 10kA out going SPMCB All MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect. (01 DB for UPS circuit, 10A SP-MCB for UPS circuits - ATM LOBBY)</p>	Set	1
8		<p>Providing &amp; installation on angle iron frame of 6 (2 + 4) way SPN distribution board (MS/ Metal) with metallic cover/door comprising of one 32 Amp in-coming DP-RCCB and 04 nos. 6A-25A, 10kA out going SPMCB All</p>	Set	2

		MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect. (01 DB for Light & Fan circuit, 6A SP-MCB for Light & Fan circuits)		
9		Supply & installation on angle iron frame of 8 (2 + 6) way SPN distribution board double door (MS/ Metal) comprising with <b>One 40 AMP DP MCB-type Changeover/ ACCL (30Amp Mains &amp; 30 Amp Gen.)</b> for UPS incomer and 2 nos. 100mA, 40A RCCB outgoing for both UPS, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates; if required. (One for ATM eLobby & One for Branch UPS Room)	Set	2
10	I	Supply & installation of <b>05 Nos. 25/32 Amp, 100 MA DP RCCB</b> 10 KA, in a suitable SNP-DB/ TPN-DB MS box, Double Door to be connected before the AC stabilizer, complete testing fixing/ installation complete in all respect (Branch ACs).	Set	1
	II	Supply & installation of <b>02 Nos. 25/32 Amp, 100 MA DP RCCB</b> 10 KA, in a suitable SNP-DB/ TPN-DB MS box, Double Door to be connected before the AC stabilizer, complete testing fixing/ installation complete in all respect (ATM Lobby - ACs).	Set	1
11		Supply & installation on angle iron frame of manufactures sheet steel 20/ 25A socket board with cover and 2 pole & earth metal plug and socket /Modular socket board and 25/32 Amp SP-MCB complete in all respect for air conditioners. (BM Cabin/ Lunch Room/ ATM eLobby - ACs)	Nos.	5
12		<b>DISTRIBUTION CABLE:</b>		
		<b>SUPPLY AND LAYING OF CABLE::</b>  Supplying and laying of 1.1 KV grade aluminium conductor, PVC/XLPE insulated and sheathed, armoured cables of following sizes conforming to IS:1554 (Part-I) underground or on surface with one 8 SWG G.I. earth continuity wire all along the run with MS painted saddle and clamps made of 6 mm thick MS flat.		
	a.	3.5 core X 70 sq.mm. For main incoming from PuVVNL Pole.	Mtr.	50
	b.	3.5 core X 35 sq.mm.(AC and Generator)	Mtr.	55
	c.	3.5 core X 25 sq.mm. (UPS DB/Light/Power/ ATM eLobby)	Mtr.	60
13		<b>CABLE TERMINATION:</b>		
		End termination of 1100 V grade, armoured Al cable of following sizes using Dowells make Cu lugs and double compression brass cable gland where required.		
	a.	3.5 core X 70 sq.mm.	Set	4
	b.	3.5 X 35 sq.mm. (AC)	Set	8
	c.	3.5 X 25 sq.mm. (UPS DB/Light/Power)	Set	10
14		Supply & instalation of HRC fuse unit (03) 200 A and 01 No. 200 AMP with Neutral link near main Energy meter & near Generator set on suitable wooden board (porcelain kit-kat fuse unit) with connection etc.	Nos.	2
15		Supply and fixing MS danger notice board.	No.s	1
16		Wiring for two indication lamps from UPS output DP/ DB critical/ non critical circuits in separate PVC conduits with 3 Watt LED lamp, holder in a suitable box with connections/ testing etc. complete in all respect in UPS room. (One for Branch ATM & One for Branch)	No.s	2
17		Supply, installation, testing and commissioning of power point for glow sign board with 3 X 2.5 sq.mm. Cu wire for	No.s	1

		phase, neutral and earth in PVC conduit including all accessories boxes as required with 25 Amp DPMCB with MS box etc. complete in all respect.		
18		Supply, installation, testing and commissioning (SITC) of 2 X 6.0 + 1 X 6.0 sq.mm., 1100 V grade, FRLS, multi strand copper conductor PVC insulated wire in medium duty rigid or flexible PVC conduit as required preferably concealed in floor/ wall including chase cutting and making good of damages/ surface including connections, complete in all respect (For incommer of SPN-DBs).	Mtr.	195
19		Supply, installation, testing and commissioning (SITC) of 2 X 4.0 + 1 X 4.0 sq.mm. 1100 V grade, FRLS, multi strand copper conductor PVC insulated wire in medium duty rigid or flexible PVC conduit as required preferably concealed in floor/wall including chase cutting and making good of damages or on surface including connections, complete in all respects (From RCCB/ SPMCB to Hi-wall Split AC Box SP MCB/ Power Point).	Mtr.	210
20		Supply and fixing of 04 Nos 10 Amp Switch and 04 Nos. modular type Per point 16/6 Amp socket 5pin (8-Module For Sockets & 4-Module for Controlling Switch - UPS) on suitable modular plate and manufacturers steel box including circuit wiring from SPNDB to computer socket board With FRLS 2.5sqmm PVC copper wire with 1100v grade flexible / stranded wires for Phase neutral and earth in PVC conduit on surface and floor concealed up to computer socket boards complete with MS saddle, fixing,connection, testing / commissioning in all respect for system/prn room on counters, tables, wall, as required by the Office.(One power board with 3		
	a.	<b>Primary Points</b>	Points	12
	b.	Same as above but looped from the above 1 <sup>st</sup> Point to 2 <sup>nd</sup> point.	Points	10
21		Supply and burying of safe Earthing Electrode T-19 (hot dip Galvanised), Length 3000 mm, outer pipe 50 mm, inner pipe 25, Terminal Dia 12 mm, outer GI pipe of 16 SWG and inner GI pipe of 12 SWG with Hot dip Galvanization up to 100 micron filled with crystalline conductive mixture (CCM) having Anti-corrosive & conductive property with 50 Kgs activated soil (BFC) capable of reducing the soil resistivity with good mixture of retaining capacity along with CI Box with hinged cover and masonry housing (from electrode terminal to SW board, cost of GI strip will be extra). GI strip directly to be connected from GI pipe with double nut bolt and spring washer. Make: As approved in UPPWD & CPRI certified. (one for 2 + 8 way TPN DB in system room, one for panel safety and 02 for UPS body/ isolation transformer, one earthing to be used for genset neutral).	Set	5
	a.	SITC of 25 X 3 mm GI Strip concealed on wall/ floor up to 1 <sup>st</sup> per meter point complete in all respect.	Mtr	50
	b.	Providing & installation of 1 X 10 sq.mm. PVC insulated copper wire in 20 mm PVC pipe from earth station to UPS room complete in all respect including fixing with nut and bolts (concealed on wall/ floor).	Mtr	120
22		Distribution wiring including circuit wiring from TPND/SPNDBs to switch boards with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 2.5 sq.mm. for P, N & E in ISI marked PVC conduit and point wiring from switch board to point outlet with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. for P, N & E in ISI marked PVC conduit with		

		<p>same make accessories in concealed/ surface or in double lock PVC casing/ capping and with modular type switches in metallic modular box, front plate, cover plate, 3 plate ceiling rose, angular holder, with two internal earthing terminals/ studs for earthing. Junction boxes to be covered with ISI mark 3 mm thick phenolic laminated sheet cover, brass screws and cup washers for cover fixing PVC conduit and other accessories.</p> <p>(i) All switch boards and regulators to be modular type, MS box should be 16 swg with 3 mm thick ISI marked phenolic laminated cover, brass screws and cup washers and Modular type 6/10 A switch/socket. (ii) Point wiring should be inclusive of continuous wire length (P, N &amp; E) upto connection block of light fitting/fans. However, if there are more one light/fan point on one switch board than Neutral and Earth can be looped from one point to another point upto the 8 points/fittings with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. Beyond eight point new wire from the switch board is to be provided (iii) Provision for fan regulators shall be electronic step type 400 W rating. (iv) Ceiling fan point shall be provided with regulators wherever specified. The switch boards to be considered accordingly.</p>		
	a.	One Light point controlled by one switch	No.s	70
	b.	Two Light point controlled by one switch	No.s	10
	c.	Call bell point (With supply and fixing of Anchor make call bell)	No.s	2
	d.	Ceiling fan point	No.s	6
	e.	Supply & installation of 3 pin 6 A socket outlet point including socket and controlling switch (On switch board/ Workstation- looped from raw power provided on counter).	No.s	16
	f.	Supply & installation of 3 pin 6 A socket outlet point including socket and controlling switch (socket away from switch board for wall fan).	No.s	10
23		<p>Supply, installation, testing and commissioning of power point having one No. 16 A modular switch and 16 Amp modular socket, modular board with FRLS 4 sq.mm. Cu wire for phase and neutral and 2.5 sq.mm. Cu wire for earth in PVC conduit including all accessories, boxes as required, maximum Point on one circuit should not exceed Two. Circuit to be connected from PDB, controlled by each point with each switch testing/ commissioning in all respect. Cu wire of PVC 1100 V grade insulated for phase, neutral and earth, concealed properly. Wiring to commence from DB to switch board and then to the point including connection testing etc. all complete in PVC conduit (concealed on wall/ floor and making good the same). Item to include supply &amp; installation of modular board, 15/20 Amp switches, sockets etc. complete for power board.</p> <p>(3-MODULE - RAW POWER - BM/CM Cabin, Lunch Room, Canteen &amp; Hall to be mounted on Wall)</p>		
	a.	Primary Point	Points	8
	b.	Secondary Point C Looped Point	Points	4
24		Supply, installation, testing and Commissioning of power point having Two nos. 6/10 A modular switch and		

		<p>two nos. 6/10 Amp modular socket, modular metal board with FRLS 2.5 sqmm cu wire for phase and neutral and 2.5sqmm cu wire for earth in medium duty PVC conduit including all accessories boxex as required,</p> <p>Maximum Point on one circuit should not exceed Two. For air purifier, TV, for office area, UPS room, guard room &amp; entrance room at suitable place. (Record &amp; stationary room to be connected through a lead or 3x1.5sqmm pvc copper wire in a thick PVC pipe to out side with 15Amp socket this will be paid extra) or as required by Office at suitable place) Circuit to be connected from lighting TPNCB, controlled by each point with each switch testing/ commissioning in all respect. Cu wire of PVC 1100V grade insulated for phase, neutral and earth, concealed properly. Wiring to commence from lighting TPNCB/Fuse unit to switch board and then to the point connection testing etc in all respect as per Office requirement. In PVC conduit (concealed on wall/floor and making good the same). Item include supply &amp; Installation of modular MS board, 6/10Amp switches, Sockets etc. complete for power board. (RAW POWER - 06 MODULE- One at Each Counter)</p>		
	a.	Primary Point	Points	16
	b.	Same as above but looped from the above 1 <sup>st</sup> Point to 2 <sup>nd</sup> point.	Points	6
25		Supply & installation of Wiring from TPNCB to isolation transformer/ Stabilizer and to UPS I/P (and earthing as provided) with 03 PVC copper wires of size point 10 sq.mm. for Phase & neutral in 20 mm PVC conduit, wire to be of 1100 V grade insulated with copper conductor. complete with ms saddle/ fixing/ connection testing commissioning etc. (UPS input/output).	Mtr.	20
26		Supply & fixing, light, Fan & sw, socket point in System/UPS room/Printer room at suitable place as required by the branch, (03 point from UPS SPNCB/ DPMCB for Main Hall and one point in UPS room, one in BM Chamber complete testing, commissioning in all respect with 1.5 sqmm PVC 1100v grade copper insulated wire for phase, Neutral and earth (if required)in PVC conduit (concealed on wall/floor and making the same). Item include	Points	5
27		Supply of company made 40 A Single Phase, 230 Volt analog time switch panel (TIMER), in manufacturer sheet steel panel, fully pre wired with all components like time switch, MCB, contactor, selector switch, indicating lamp etc. (One for ATM Lobby)	Set	1
28		Preparation of Single line Diagram(SLD) as build drawing as per actual work done.	No.s	1
29		Supply & Installation of Strong room, record room and locker room to be connected through a lead or 3X2.5sq mm PVC copper wire in a thick PVC FLEXI pipe to out side with 16/ 20 Amp socket (in side to be connected directly with proper connection – out side with power point.	No.s	4
30		Dismantle, shifting and re-installation of existing TPN-DBs, SPN-DBs & Wall/ Ceiling Fans in the new premises; complete in all respect.	No.s	5
		<b>SUB TOTAL SECTION-I: INTERNAL ELECTRICAL WORKS, WIRING FOR UPS AND AC</b>		
<b>B</b>		<b>SECTION-II: SUPPLY ITEMS</b>		
1		Supply & installation of 600 mm X 600 mm in false ceiling, full panel, 30-36 W LED light fixture suitable for recess mounting complete in all respects with LEDs, driver, diffuser, housing complete in all respects.	No.s	26
2		Supply & installation of LED in false ceiling, round/ square, recess mounting Warm White/ NW, 10-12 W downlighter	No.s	30

		complete with LED, driver etc.		
3		Supply & installation of LED flexi strip light of 5 mtrs. Length in 15 - 25 W with driver.	No.s	15
4		Supply & installation of LED on wall/ ceiling, 1200 mm, 1 X 20 W batten type light fitting complete with LED tubular lamp with driver, complete in all respects.	No.s	14
5		Supply & installation of Philips Occupancy sensor for light operation of BM Chamber/ Washrooms, control circuit, complete in all respects. (BM Cabin)	No.s	1
6		Supply & installation of 450 mm sweep, oscillating type, wall mounting multi speed Metal Body Metal Blades Three Pin; if available wall fan with motor, wire guard, control, complete in all respects.	No.s	6
7		Supply & installation of Heavy duty industrial type 230/ 250 mm metal body exhaust fan 1400 RPM (for UPS / Wash Rooms)	No.s	5
8		Supply & installation of LED on wall/ceiling, 600mm, 10 W batten type light fitting complete with LED tubular lamp with driver, complete in all respects.	No.s	5
9		Supply & installation of 1200 mm sweep 5-Star, Brushless Direct Current (BLDC) ceiling fan metal body, metal blades etc. (Cash/ UPS/ Locker/ Lunch/ Record/ Stationary Room)	No.s	5
10		Supply & installation of spot light type LED in false ceiling/Cove, round/ square, recess mounting Warm White/ NW, 3 Watt downlighter complete with LED, driver etc.	No.s	6

### **NOTES TO SCHEDULE OF ITEMS**

1. Tenderers shall include in their rates quoted charges for preliminary and general items required for the execution of work such as tools and plant, workman's shed, temporary offices, clearing, site, scaffolding upto required height etc. The description of each item shall, unless otherwise stated be held to include conveyance and delivery, unloading, storing, fabrication, hoisting, all labour and finishing to required shape and size, setting, fitting and fixing in position, straight cutting and waste, return of packings, overheads, profits and other incidental charges. All measurements of cutting shall unless otherwise stated, be held to include the consequent waste.
2. The rates quoted by the Contractor should cover for work at any height for all the items of work under this contract. List of materials will not form a criterion for any extra payment, unless otherwise stated in the particular item.  
  
In the event of arithmetical error/errors being discovered in the contractor's tender, the rates mentioned in words in the Tender copy marked 'Original' will only be taken as bonafide.
3. Contractor should note that the tender is strictly on item rate basis and their attention is drawn to the fact that their rates for each and every item should be correct, workable and self supporting. If called upon by the Architects/Owner detailed analysis of any or all rates shall be submitted. The Architects/Owner shall not be bound to recognise Contractor's analysis.



4. Contractors should note that their rates should be inclusive of all attendance on their sub-contractors and also for making good any holes and chases left by the sub-contractors before the builders' work is completed.
5. The contractor shall be responsible for procuring all required materials sufficiently in advance and see that the work is never hindered for want of materials or due to any other reason including skilled labour or restrictions.
6. 6. The contractor shall have to carry out all connected work within the boundary of the proposed work and inside the building if ordered to do so by the Architect/Owner at the rates quoted in the Schedule of Items.
7. The contractor is to study architectural and electrical drawings before commencing any work. In case of discrepancy the contractor must report to the Architect/Owner immediately and shall get the same rectified before proceeding on.
8. The rates quoted for installation work shall include the necessary requirements of Indian Electricity Act and Rules as well as NEC in force at the time of carrying out work.
9. All materials which shall be used in the work shall be as per specifications and must be from the list of the approved materials as mentioned in the specifications. Samples of materials proposed to be used shall be submitted for approval and nothing shall be used which are not approved. Employer have got right to select any "make" of the approved list and tenderer shall have to supplying the same without any price implication.
10. Workmanship of panels, installation of cables, etc should be proper.
11. Distribution Boards of reputed manufacturers specified in the list should be used instead of locally fabricated ones.
12. Cables wherever laid in trenches should be arranged in proper formation and preferably with minimum axial spacing of 150 mm between the cables.
13. On one and the same control board two circuits of two phases from the same T.P. Distribution Board should not be brought.
14. The rates for service connection charges include the cost of metering connection of PVC cables, Cable sockets, etc.
15. Distribution wiring shall include circuit wiring. No extra payment shall be made for circuit wiring.
16. Rates quoted for point wiring of PVC wires on surface shall include cost of switches, three plate ceiling roses etc. on wooden board or partly concealed as stated in the Schedule of Items including earthing. No extra cost for switches, ceiling roses, boards etc. shall be allowed.
17. Rates for conduit/pipe laying in roof/floor slab before casting shall include the cost of conduits/pipes, junction boxes, bends, circular boxes, deep boxes, etc as necessary. No extra cost for the above shall be allowed.

18. Rates quoted for point wiring in surface conduit/concealed conduit will include switches, etc on M.S Board, three plate ceiling roses, circular boxes, deep boxes, junction boxes etc as specified and as necessary including earthing. No extra cost for switches, ceiling roses, boards etc. shall be allowed.
19. The rates for erection of ceiling fan and fluorescent fittings must include the cost of supplying down rod as necessary and flexible wire, connection charges, earthing of fans and metallic fixtures, fixing of Resistance type/Electronic type regulator as necessary and testing etc. If necessary fans with down rod and fittings may be supplied by the Owner.
20. The rates for plug socket point wiring shall include the cost of socket-outlet, plug top and control switch in box and necessary connection charge including earthing as specified.
21. The rates for fittings shall include cost of supply and fixing of fittings, lamps, etc. and connection and testing charge.
22. The rates for cable-laying shall include the cost of cable trenches with tiles, sands etc. and also the cost of saddle clamp (in case of surface wiring), providing G.I. pipes under road-crossing, drain, etc. necessary clamps etc.
23. The rates for cable jointing shall include the cost of labour and materials include gland, cable box clamp, etc and armour/gland- earthing suitably as specified.
24. The rates for cable connection charges include the cost of making connection of cables, cable sockets etc wherever required.
25. Cost of Danger board/Caution Notice shall be included in the testing, commission item.
26. The rates for earthing shall include the cost of jointing earth wire with busbar by means of cable sockets, etc. and cost of earthing with specified earth wire. No deviation from the specification for earthing work including earth stations will be accepted. Cost of required Caution Notices should be included in the rates of earthing.
27. Tenderer shall note that the light fittings, ceiling fans, exhaust fans etc to be used in bulk quantities shall be supplied by the purchaser as "free issue" for installation/execution purposes at one point at site. All the subsequent strong, security, protection installation/erection, testing/commissioning will be within the scope of the successful tenderer till the entire installation is handed over to the purchaser. Tenderer shall include all the necessary cost for the above and no extra cost will be paid on this account.
28. Stroning and protection of all materials at site fill erection, commissioning and handing over shall be at the responsibility of successful tenderer without any extra cost.
29. The wiring includes painting of installations with two coats of approved paints, and painting should match with the interior decoration of wall and ceiling. No extra charge for painting shall be entertained.
30. General spirit of the technical specification and method of measurement shall be as laid down in the latest edition of I.S. Code of Practice and stipulated in I.E. Rules.

Rates quoted for all items shall include for the cost of supplying, laying and materials fixing and/or erection complete with all the appliances necessary for the proper execution and carrying out of the work to the truest sense of drawing and specification though this may not be mentioned in particular item of work in the Schedule of Items.

**-End-**