



**CHRISTIANPADA, G.M. COLLEGE ROAD,
SAMBALPUR, ODISHA**

TENDER DOCUMENT

**FOR ELECTRICAL INSTALLATION, DATA CABLING & AIR-CONDITIONING
WORK
OF KANTAMALA BRANCH & ATM**

NAME OF THE TENDERER :

ADDRESS OF THE TENDERER :

LAST DATE OF SUBMISSION OF TENDER : 20.04.2024 UPTO 3.00

PM

DATE OF OPENING OF THE TENDER : 20.04.2024 AT 4.00 PM

ARCHITECT / CONSULTANT

Architects Creation

B-9, 2nd Floor,
Saheed Nagar,
Bhubaneswar - 07

NOTICE INVITING TENDER

Sealed item rate tenders are invited only from Contractors, empanelled by Bank of Baroda, Regional Office, Sambalpur and on behalf of

The Regional Head,
Bank of Baroda, Regional Office,
At - Christianpada, G.M. College Road,
Sambalpur, Odisha - 768001

for the following work:-

- 1) Name of the work : Electrical Installation, Data Cabling & Air-Conditioning
Work of Kantamala Branch 7 ATM of Bank of Baroda.
- 2) Place of the work : Kantamala, Odisha.
- 3) Date of Commencement of work : 7 (Seven) Calendar days from the date of issue of work-order.
- 4) Time of completion : 30 (Thirty) calendar days.
- 5) Defect Liability Period : 1 (One) Year and amount 10% of Final Bill
- 6) Earnest Money : Rs. 8608.00 (Rupees Eight Thousand Six Hundred Eight) only by crossed demand draft / Pay order of any scheduled Bank, drawn in favour of "**Bank of Baroda**" payable at **Sambalpur**. Tender without earnest money in proper form will be rejected.
- 7) Time, Date and Place of Submission of Tender : **On or before 3.00 P.M. on 20.04.2024**
At the office of :-
The Regional Head,
Bank of Baroda, Regional Office,
At - Christianpada, G.M. College Road,
Sambalpur, Odisha - 768001
- 9) Time, date and place of P.M. : The Tender will be opened first at **4.00**

opening of Tender

on **20.04.2024** at the office of :-

The Regional Head,

At - Christianpada, G.M. College Road,
Sambalpur, Odisha - 768001

- 10) Tender to be addressed to : The Regional Head,
Bank of Baroda, Regional Office,
At - Christianpada, G.M. College Road,
Sambalpur, Odisha - 768001
- 11) Validity of Tender : Three (3) calendar months from the
stipulated last date of submission of tender.
- 12) Procedure of Submission :
ENVELOPE (Single Bid system)

Envelope shall contain the following documents.

1. Forwarding letter without mentioning the cost of Tender value arrived at with quoted rates.

2. Earnest money deposit furnished in the form of Crossed Demand Draft / Banker's Cheque drawn in favour of BANK OF BARODA and payable at Sambalpur for the amount indicated in the Notice of invitation to tender.

3. Any comment which the tenderer desires to make in the form of a statement as brief as possible and with reference to the item.

4. Latest photo copies of up-to-date Income Tax clearance certificates of Last 3 years, GST Registration Certificate/acknowledgments, PAN. (Bank has the right to verify the documents in original at the time of opening of tender)

5. Valid Contractor license B/C Class in case of Civil Work) of state PWD/Irrigation/RD/ CPWD having experience of similar nature for the works. (License should be in the name of the bidder only)

(Bank has the right to verify the documents with originals at the time of opening of tender)

6. The terms and conditions which are of commercial and technical nature if any that the tenderer wishes to stipulate.

7. Photo copy of Bank Of Baroda Empanelment Letter(Category II and Above From Patna Zone) to be submitted .

8.The priced Tender Volume in duplicate- Marked 'ORIGINAL"&' DUPLICATE", on the body of the tender paper issued in which case the tender may be liable for rejection.

9 The envelope of adequate size which shall be properly sealed. This envelope which shall be endorsed on the outside face "TENDER FOR ELECTRICAL, DATA & AC WORK , **BANK OF BARODA KANTAMAL BRANCH** .

Envelope (Marked No.3) containing tender documents as mentioned here in above shall be opened in the office of THE ASST..GENERAL MANAGER, SAMBALPUR at **04.00 P.M.** **dated** 20-04-2024 in the presence of the representatives of the Architect and the Premises committee.

For,
The Regional Head,
Bank of Baroda, Regional Office,
At – Chistrianpada,
Sambalpur

SPECIAL INSTRUCTIONS

Tenders may specially note the following:-

1. The work shall be carried out by contractors by taking all necessary precautions to avoid inconvenience to the office functioning and the people working therein.
2. All major planning, cutting of wood etc., shall be done at the factory of contractor and not at the site.
3. Permissible working Hours.
 - a. The work shall be carried out at site only between to hours.
 - b. For working in extended hours or period other than specified above, specific prior approval shall be obtained from the Bank. Bank reserves full rights to accept or reject such requests from the contractor without assigning any reasons whatsoever.
 - c. No debris shall be stored/stacked in the compound area of the premises.
 - d. No movement of materials including debris into and out of the premises shall be permitted between to hours on working days. Contractor will keep the Bank advised about the movement of materials/debris.
4. Period of completion: 100% of the tender job shall have to be completed by the successful tenderer within 30 days from the date of receipt of work order.
5. Penalty for delay: If the work is not completed within the stipulated by a penalty of Rs. 500/- per day shall be payable by the contractor to the Bank for first ten days of delay and thereafter a penalty of Rs. 1000/- per day for the next 15 days. Thereafter the bank will cancel the contract unilaterally without notice to the contractor.
The performance guarantee if any would be invalid and the amount of guarantee would be collected.

Instructions for Filling/Submitting Tenders:

1. The tender should be submitted only in the prescribed tender schedule form supplied by the Architect. (Reference to receipt of the Earnest Money deposit in demand draft. Particulars should be furnished at the bottom of the tender form. The receipt should be carefully preserved by the Tenderers and it is required to be returned at the time of claims for refund. In case the receipt is lost or misplaced, Indemnity Bond on stamp paper of Rs.10/- will have to be submitted at the time of claiming for refund).
2. The tenderer should study all the tender documents carefully and understand the tender contract conditions, drawings, and specifications etc., before quoting. If there are any doubts, they should get clarifications in writing but this shall not be a justification for submission of late tender or extension of opening date. Tender should be strictly in accordance with Architects' drawings, specifications and other tender documents.
3. The tenderer should visit the site and acquaint himself with the site conditions before quoting. He is also expected to know about the availability of water supply, electricity supply, approach road, construction materials as per consultant's specifications and any other ancillary facilities since these are to be provided/arranged by him (unless otherwise specified) at his cost to execute the works. All the above factors must be taken into account in the rates quoted.
4. The tenderer should quote his rates for all items in the tender schedule. All the rates given in the tender schedule should be expressed both in figures and words, and where there is a difference between the two, the rates given in words will be taken as authentic. Should there be any discrepancy between unit rate and amount, the unit rate will be considered as the correct one.
5. As per the works contract Clause No.14 contractors shall be bound to pay all taxes.
6. All tenders should be submitted in cover (sealed with lac.) boldly super scribed on the outer cover with the worded **"Technical Bid."**

7. All entries in tenderer documents should be handwritten in ink. All corrections should be attested under the full signature of the contractor. Corrections where necessary should be made by scoring the wrong word figures by drawing a line across them and attesting these with the full signature of the contractor. These shall not be erased or overwritten.
8. Every page of the tenderer document should be duly signed by the tenderer at the end of last entry thereon. One set of drawings should be signed and returned by the contractors along with tender documents.
9. Rates:- The quoted rates should be inclusive of all equipments, materials, leads, labour, octroi duties, turnover tax, Excise, Customs etc. but exclusive of GST, required in connection with the completion of work to the entire satisfaction of the Corporation and Consultants. All the materials are to be supplied by the contractor unless otherwise stated. No claim for upward revision of rates will be allowed on account of any increase in tax, duty etc.
10. The quoted rates shall be valid for a period of six months from the date of opening of the tender. No upward revision of rates will be accepted after opening of the tender. If the Tenderer fails to accept the work order, if placed at his originally quoted rates, or subsequently negotiated rates, as the case may be, the earnest money will be forfeited. Once the quotations are accepted and the work order placed on the successful tendered, the rates shall be valid till the entire work is 100% complete.
11. Tenderer shall quote his rates for all items of work described in the bills of quantities, irrespective of whether they are main items or alternate items. The Bank reserves to itself the right to adopt any of the alternate items, either in scrutinizing and deciding upon the tender or later when the works are being executed.

Acceptance of Tender by BANK OF BARODA.

12. Incomplete tenders, conditional tenders, tenders received late or tenders not conforming to the terms and conditions prescribed in the tender documents or not accompanied by the requisite earnest money will be rejected. The bank is not bound to accept the lowest tender and reserves the right to reject any or every tenders without assigning any reason whatsoever and/or to carry out negotiations with the tenderers in the manner considered suitable by the Bank.
13. Tenderers may have to attend the concerned office of the Bank for negotiations/clarifications required by them in respect of their quotations without any commitment on the part of the Bank.
14. In case of negotiations, the tenderer should send the confirmation of successful negotiations so as to reach the Bank within three days from the date of negotiation failing which the Bank reserves the right to ignore the quotation.

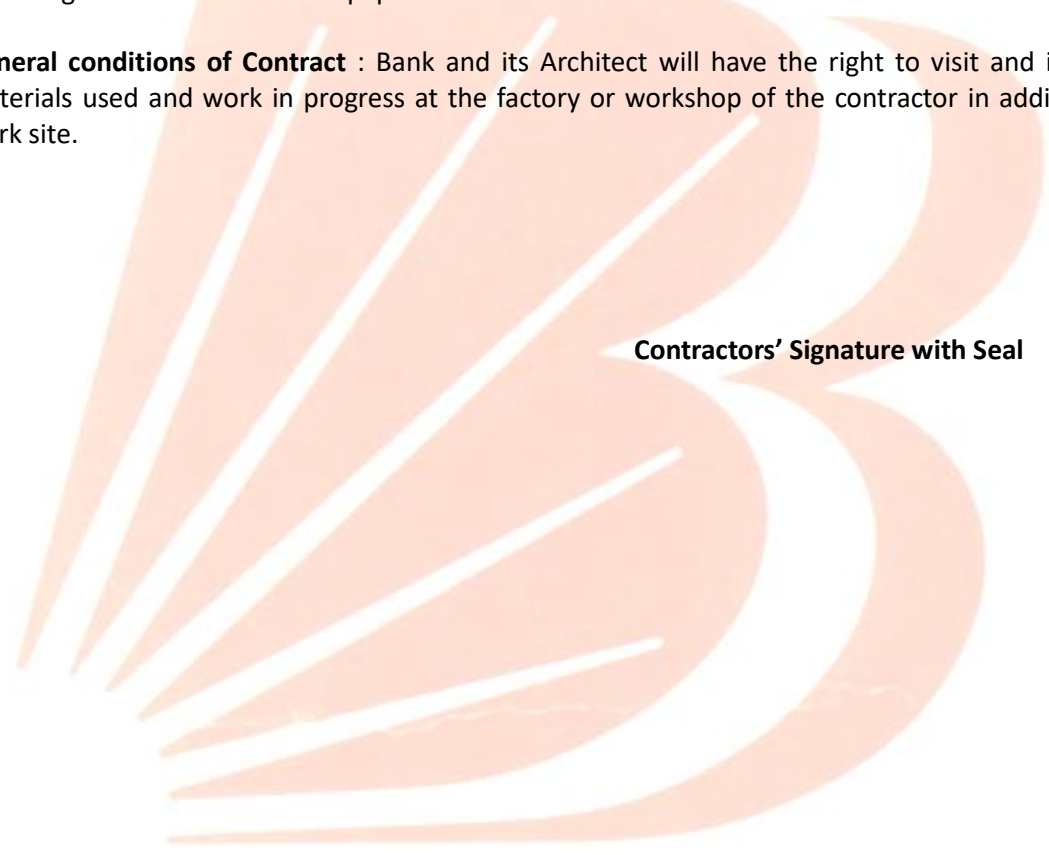
Acceptance of Work Order by Tenderer.

15. After communicating Banks acceptance of the Contractor's tender, if the contractor fails to return the duplicate copy of work order and agreement duly signed in token of their acceptance within 3 days, the Earnest money deposit will be forfeited by the Bank.

Execution of Agreement.

16. On acceptance of the quotation, the successful tenderer will have to execute an agreement with the Bank, covering all aspects of the contract in the standard form immediately before the commencement of work. The tenderer will have to give 10% of work order as security deposit either in form of bank draft or Bank guarantee.

17. Then the party signing the tender is not the sole proprietor, the necessary power of attorney authorizing the party to act on behalf of the proprietor and organization should be produced before signing the agreement.
18. **Payment of Bills:** No advance payment will be made. You will not ask for payment of Running Bill. Full and Final Bill will be paid to you after completion of the work to the satisfaction of Architect/Bank. You must ensure that there will be no compromise in Quality of Work. Payment will not be released if the work is not found Satisfactory. 10% of the bill amount payable will be retained with the bank as security deposit for defect liability for a period of one year and IT deduction for considering part payment as above.
19. **Insurance:** Till the tendered job is totally completed and handed over to the bank after satisfactory completion the contractor shall keep all the materials and equipment's etc. at his sole risk and responsibility a shall keep them insured at his cost and risks. Bank will not be responsible for any loss or damage to the materials or equipment's of the contractor.
20. **General conditions of Contract :** Bank and its Architect will have the right to visit and inspect the materials used and work in progress at the factory or workshop of the contractor in addition to the work site.



Contractors' Signature with Seal

GENERAL CONDITIONS OF CONTRACT

1. The work shall be executed strictly according to the drawings and specification attached in addition to general specifications/and approval, site direction of the Architect.
2. 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 or materials used for 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 works, or the execution or failure to executor the same whether arising during the progress of the work or after the completion of abandonment there of shall be referred to the Architect and the Architects decision shall be final and binding to the contractor.
3. All work executed shall be paid for according to measurements taken by or under the order of the Architect, in the presence of Bank's representative and not according to the quantity given in any estimate.
4. If the contractor or his workers or servants shall break deface, injure or destroy any portion of the building where the work is being executed, the contractor shall make good the same at his own cost and expense. The site is to be left clean in all respect after completion of works.
5. No laborer below the age of eighteen years shall be employed on the work site.
6. Any material (controlled or decontrolled) required for the work shall have to be arranged by the contractor except otherwise mentioned.
7. The work is to be completed within 30 Days, which will commence from the day of issue of work order.
8. Sample of all tenders shall be brought by the contractor at site and shall be approved with endorsement by the Architect and shall remain in safe custody at site, till the completion of the job and shall be made available to the Banker's representative/Architect or his representative whenever required.
9. Any change of materials/color/texture/brand other than what is specified in the conditions shall not be done without the written approval from the Architect. If violated, Architect can reject the items and no payment shall be made over that item.

Instruction for filling /submitting Tenders:

1. The tender should be submitted only in the prescribed tender schedule form supplied by the Architect. (Performance in receipt of the Earnest money deposited in demand draft. Particulars should be furnished at the bottom of the tender form. The receipt should be carefully preserved by the tenderers and it is required to be returned at the time of claims for refund. In case the receipt is lost or misplaced, Indemnity Bond on stamp paper of Rs.10/- will have to be submitted at the time of claiming for refund.)
2. The tenderer should study all the tender documents carefully and understand the tender contract conditions, drawing, and specifications etc., before quoting. If there are any doubts, they should get clarifications in writing but this shall not be a justification for submission of late tender or extension of opening date. Tender should be strictly in accordance with Architects drawings, Specifications and other tender documents.

3. The tenderer should visit the site and acquaint himself with the site conditions before quoting. He is also expected to know about the availability of water supply, electricity supply, approach road, construction materials as per Consultant's specifications and any other ancillary facilities since these are to be provided/arranged by him (unless otherwise specified) at his cost to execute the works. All the above factors must be taken into account in the rates quoted.
4. The tenderer should quote his rates for all items in the tender schedule. All the rates given in the tender schedule should be expressed both in figures and words, and where there is a difference between the two, the rates given in words will be taken as authentic. Should there be any discrepancy between unit rate and amount, the unit rate will be considered as the correct one.

As per the works contract Clause No.14 Contractors shall be bound to pay all taxes.

5. All tenders should be submitted in cover (sealed with lac) boldly super scribed on the outer cover with the worked "Technical Bid."
6. All entries in tender documents should be handwritten in ink. All corrections should be attested under the full signature of the contractor, corrections where necessary should be made by scoring the worrying words/figures by drawing a line across them and attesting these with the full signature of the contractor. These shall not be erased or overwritten.
7. Every page of the tender documents shall be signed by the tenderer at the end of last entry thereon. One complete set of drawings should be signed and returned by the contractor with tender documents.
8. Rates:- The quoted rates should be inclusive of all equipment's, materials, leads, labour, octroi duties, sales tax on work's contract, turnover tax, Excise, Customs etc. but exclusive of GST, required in connection with the completion of work to the entire satisfaction of the Corporation and Consultants. All the materials are to be supplied by the contractor unless otherwise stated. No claim for upward revision of rates will be allowed on account of any increase in tax, duty etc
9. The quoted rates shall be valid for a period for a period of three months from the date of opening of the tender. No upward revision of rates will be accepted after opening of the tender.

Acceptance of tender by BANK OF BARODA.

10. Incomplete tenders, conditional tenders, tenders received late or tenders not conforming to the terms and conditions prescribed in the tender documents or not accompanied by the requisite earnest money will be rejected. The bank is not bound to accept the lowest tender and reserves the right to reject any or every tenders without assigning any reason whatsoever.

Acceptance of work order by Tenderer.

11. After communicating Banks acceptance of the contractor's tender, if the contractor fails to return the duplicate copy of work order and agreement duly signed in token of their acceptance within 7 days, the earnest money deposit will be forfeited by the Bank.

Execution of Agreement.

12. On acceptance of the quotation, the successful tenderer will have to execute an agreement with the BANK OF BARODA, covering all aspects of the contract in the standard form immediately before the commencement of work. The format of which is enclosed herewith.

13. Then the party signing the tender is not the sole proprietor, the necessary power of attorney authorizing the party to act on behalf of the proprietor or organization should be produced before signing the agreement.
14. **Insurance:** Till the tendered job is totally completed and the completion certificate is obtained from the Architect and handed over the bank the contractor shall keep all the material and equipment's etc. at his sole risk and responsibility shall keep them insured at his cost and risks. Bank will not be responsible for any loss or damage to the materials or equipment's of the contractor.
15. During the construction period Bank and its Architect will have the right to visit and inspect the materials used and work in progress at the factory or workshop of the contractor in addition to the work site.
16. As because the work has to be carried out after the banking hours at the Bank premises the contractor shall take into account necessary expenses as required and shall not claim the right to work during the office hours of the Bank.
17. Program of works: Program of works shall be submitted by the contractor in the prescribed format and co-ordination check list given by the Architect. No work shall be carried out deviating this program.
18. Site meeting/review of the progress of work: Every week on a fixed date and time the contractor or his authorized representative shall be present in person, to note down instructions given in such meetings.

SAFETY CODE :

1. These shall be maintained in a readily accessible place, first-aid appliances including adequate supply of sterilized dressing and cottonwood.
2. An injured person shall be taken to a public Hospital without loss of time, in cases where the injury necessitates Hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from ground.
4. No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm (clear) and the distance between the adjacent rungs shall not be more than 30 cm. When a ladder is used, an extra Mazdoor shall be engaged for holding the ladder.
5. Every opening in the floor of a building or in the working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one meter.
6. No floor, roof or other part of the structure shall be so over loaded with debris or materials as to render it unsafe.
7. Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
8. No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.
9. Suitable facemasks should be supplied for use by the workers when paint is applied in the form of spray or surface having lead paint dry rubbed and scrapped.

10. Over all shall be supplied by the Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the periods of execution.

TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATIONS FOR CONCEALED CONDUIT LAYING

1. Type and size of Conduit :

All conduit pipe shall be screwed type, solid drawn or welded and with black stove enameled surface or galvanized 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 20mm in dia shall be used, unless specified.

2. Accessories : Only screwed type of accessories are to be used.

3. Conduit Joints :

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

4. Protection against dampness and rust :

In order to minimize 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 pointed with anti-corrosive preservative.

5. 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.

6. Maximum capacity of conduits for drawing in of PVC insulated cables shall be as follows

650/1100V PVC	in 20mm dia	in 25mm dia
copper wire	conduit	conduit
1.5 Sq.mm	4 Nos.	10 Nos.
2.5 Sq.mm	4 Nos.	10 Nos.
4.0 Sq.mm	3 Nos.	8 Nos.
6.0 Sq.mm	2 Nos.	6 Nos.
10 Sq.mm	--	4 Nos.
16 Sq.mm	--	2 Nos.

7. Fish Wire :

18 S.W.G. G.I. wire shall be used and it shall protrude the conduit ends by 9 inches.

8. Conduit laying in floor/roof slabs before casting :

PVC/Polythene/G.I. conduit shall be laid straight as far as practicable and properly placed including binding with the steel reinforcement rods with 22 SWG G.I. 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 deadened socket or otherwise so that any foreign matter cannot 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 pre laid 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 C.I./G.I. 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 Bank's Engineer/Architect when the conduits are laid and bound to steel reinforcement rods, before he can release the work for casting of floor/roof.

9. Connector Boxes, Draw-in-Boxes, Junction Boxes :

These shall be manufactured 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".

10. Fan Hook Boxes :

These shall be 125mm X 125mm X 75mm deep, constructed from 16 SWG M.S. sheet, and provided with one 12mm dia M.S. rod 300mm long.

TECHNICAL SPECIFICATION FOR ELECTRICAL WIRING

1. 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 thereunder, 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 specifications of P.W.D. of the Local Government.

2. 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 afterwords. Materials not included in the list shall be got approved by the Architects/Owner prior to actual use.

3. MAIN SWITCH GEAR

Iron clad switch fuse and isolator units should conform to B.S. 861 (I.S. 2510-1954). The quick made 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. BURSAR 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 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 and boxes as required.

The depth of B.B.C. shall be 150mm (minimum). Minimum clearance of phase bars to earth shall be 25mm and between bus bars shall be minimum 32mm.

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 60% of phase current. These shall be carried on glazed porcelain supports of proper dielectric and mechanical strength and shall be appropriately colour coded for identification of Phase.

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 numbers of Earth Terminals. Suitable Danger Board shall be provided.

5. INTERCONNECTION B.B.C. & SWITCH FUSE, METERS

For ratings above 150 Amps these shall consist of insulated copper strips to adequate section. For rating below 150 Amps PVC copper cable tails of appropriate size, terminating in tinned copper sockets may be used. The above are to be enclosed either in sheet metal trunking or conduits so that no part is exposed.

6. 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 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.

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 minimum ratings of phase and neutral busbars shall be 67% of the total rating of fuse ways. Above 32 Amps Neutral Busbars may be half the size of the Phase Bus bars.

The fuses shall be mounted on glazed porcelain supports of proper dielectric and mechanical strength. TPN units should have phase separation barriers between fuse banks.

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 at least two metres apart.

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 Boards. All SPN B.D.B.'s shall be properly earthed with one number 10 SWG galvanised iron wire each.

7. CABLES AND CONDUCTORS

All cables shall conform to relevant Indian Standard. Conductors of all cables except for flexible cables, shall be of aluminum, unless specified otherwise.

8. 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.

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 cut 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.

9. 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.

10. SPECIAL SPECIFICATIONS

a) Before fixing all switches, fittings etc. 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 they shall be again painted with two coats of enamel paint of approved quality.
 - c) Before execution of any portion of conduit work for wiring 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 of the Consultant/Architect.
 - d) While laying the conduits for concealed wiring in the ceiling or in the beams and columns and before casting the contractor must ensure that all the inlets and both ends of the conduits are plugged by means of dead end socket so that no foreign matter can enter the conduits and choke them.
 - 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 installation 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
 - l) The Contractor shall be required to submit along with Final bill, the under noted controlled by them).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) Locations 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.
- and giving the following information on the plans :-
- a) Name of work with job no. Accepted Tender No.
 - b) Date of completion.
 - c) Name of the Place.
 - d) Name and Signature of the 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 in 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 CABLE INSTALLATIONS

1. 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 under ground cables (upto including 33 KV).

2. Laying of Cables

a) Direct in Ground

Trenches shall be 750mm deep (minimum) for LT Cables and 1.2 M (4'-0") deep minimum for HT Cables from ground level and trenching work shall including 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 leveled and filled with a 75mm 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 75mm (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 75mm (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/ceilings/structure, unless specified otherwise, with M.S. brackets and suitable clamps or over claw type aluminium cleats fixed on M.S. brackets, paced not more than 450mm 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 individuals core of multicore cables should never be bent so that the radius is less than 15 times the diameters over the insulation.

No Cable jointing is allowed between two terminals points.

3. Cable Jointing

All cable joints shall be carried out by experienced and Licensed 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 accessories and other associated materials shall conform to Indian Standard Specification where applicable. Proper earthing of cable glands and armoured shall be included in the job.

4. 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. 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. Earthing Electrode

The earthing electrode shall be galvanised steel pipe of Class B medium quality - 40mm dia bore and 3.04 M (10') long. A hole shall be provided at 100mm (4") from the top end to receive a 13mm (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') 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. bolt nut and double washers. The earth lead conductor shall be protected mechanically by means of a continuous length of G.I. pipe (Class A) having 13mm (1/2") inside diameter upto a height of 0.60 M (2') above ground and the same shall be completely filled with bitumen compound and topped upto overflowing.

2. Masonry Inspection pit

The inspection pit for the earth station shall be approx. 0.56 M X 0.56 M (1'-10" X 1'-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 19mm (3/4") thick and neatly cemented 1.60mm (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. Locations 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. 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 30mm 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 6mm from wall with spacing insulators with at least the numbers 13mm (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.

5. Value of Earth Resistance

In case of installations where the load does not exceed 5 K.W. the resistance to earth shall on no account exceed 5 K.W. the resistance shall not exceed 1 ohm.

For sub-station, the value is 1 ohm.

For L.C. installations, the value is 1 ohm.

TECHNICAL SPECIFICATIONS FOR L.C. INSTALLATION

Specifications :

The installation shall conform to I.S. : 2309-1969 as amended up to date.

1. Conductor for L.C. System

It shall be well galvanised No. 7/8 SWG G.I. stranded wire galvanising conforming to B.S. 728/1961) unless specified otherwise. The conductor shall be well annealed and flexible. There shall be no joints in any conductor between terminal ends.

2. Air Terminals

Air Terminal shall be single prong type constructed of 15mm N.B. (Class-B) medium quality G.I. pipe 30 cm long with a screwed G.I. solid conical cap 100mm long (overall) on top and shall have a screwed

galvanised M.S. flange 75mm dia X 6mm thick at bottom end and shall be grouted on the parapet, roof, etc with rag bolts in cement mortar unless specified otherwise.

3. Conductors on Parapet

The conductors shall be coursed along ridges, parapets, edges of the flat roof, over flat roof where necessary in such a way as to joint each air terminals to the rest. The conductors shall be fixed securely with proper saddles spaced not more than 2 ft. (0.6 M) apart.

4. Vertical Down Conductors

The conductors, direct from test point shall be connected to parapet conductors or air terminals and shall be coursed through shortest possible routes without abrupt turns or kinks. While passing through cornices, these shall pass through G.I. pipe (Class-B) having adequate bore. These conductor shall be fixed securely with proper saddles spaced not more than 2' ft. (0.6 M) apart.

5. Protection Against Damage and corrosion

No upturns are permitted and any bend necessary shall have a permissible radius. The end of G.I. pipe protections on wall shall be properly sealed with bitumen compound to prevent corrosion.

6. Metallic Objects near conductors

The conductors shall be so laid as to maintain a separation distance exceeding 2 Metres (6'-6") between (a) any electric conductor running in parallel, (b) metallic objects, viz. iron girders, water tanks, iron stair case, water/gas pipes inside or by the side of the building.

All the external metallic objects viz. water tanks, gutters, rain water down pipes, water mains, etc. shall be bonded to the nearest conductor by means of a short tail.

7. Joints & Bonds

All joints between conductors shall be made after cleaning and tinning the ends of conductors to be joined, binding them together for about 100mm (4") with No. 14 SWG G.I. wire and then welding.

Joint between Air Terminals and conductors shall be made with proper lugs duly fixed to conductors and bolts, nuts washers etc.

Bonding shall be as short as possible. All joints & Bends are to be mechanically and electrically sound.

8. Earth Stations :

Similar to Installation earths as specified elsewhere. Minimum number of earth station is two.

9. Installation Tests :

After completion of works the ohmic resistance of L.C. installation complete with air terminals (without earth connection) shall be measured from the highest point and this shall be a fraction of one ohm.

The resistance to earth of individual earth stations shall be tested by earth testing megger and must not exceed 1.0 ohms.

The above tests shall be made in the presence of the representative of the Engineer-in-charge/Architects and the results recorded.

10. Completion Drawings :

This shall be submitted along with the final bill

SCHEDULE OF QUANTITIES

PREAMBLE

1. The quoted rates shall include clearing site from all shrubs, vegetation, bushes, trees before commencement of work even if not otherwise specified. Trees with a girth of above 4500mm measured 300mm above G.L. shall be cut with prior approval from the Owner/Consultant.
2. The quoted rates shall be deemed inclusive of costs of all labour, materials, tools, plants, equipments, scaffolding, curing cost, all lead & lifts, all taxes, duties, octroi even if these are not otherwise mentioned in items.
3. Products with I.S.I. stamping, if available shall be used with prior approval of the Consultant/Employer reserves the right to select any particular brand between different I.S.I. stamped products of the same category.
4. The quoted rates shall include for keeping pockets, holes, chases, etc., in concrete/masonry for running of Conduit etc.

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 plants, workman's shed, temporary offices, cleaning site, scaffolding upto required height etc. The description of each item shall unless otherwise stated be held to include conveyance, 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 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 all 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 rate mentioned in works 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 Architect/Employer detailed analysis of any or all rates shall be bound to recognise Contractor's Analysis.
4. Contractor should note that their rates should be inclusive of all attendance on their sub-contractors & also for making good any holes and chases left by the Sub-Contractor before the builder's 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 or restriction.
6. The Contractor shall have to carry out all connected work within the boundary of proposed work and inside the building if ordered to do so by the Architect/Employer 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/Employer immediately and shall get the same rectified before proceeding on.

8. The rate quoted for installation work shall include the necessary requirements of Indian Electricity Act and Rules in force at the time of carrying out work.
9. All materials which shall be used in the work 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.
10. General spirit of the technical specification and method of measurement shall be laid down in the latest edition of I.S. Code of Practice. Rates quoted for all items shall include for the cost of supplying labour 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 in the Schedule of Items.



SUGGESTIVE LIST OF MATERIALS AND THEIR MANUFACTURERS FOR ELECTRICAL WORK

- | | | | |
|-----|---|---|---|
| 1. | Switch fuse with H.R.C. fuse | : | ALSTOM / CROMPTON / L&T / SIEMENS
/ HAVELLS |
| 2. | Switch fuse with rewirable type
fuses | : | ALSTOM / ENGLISH ELECTRIC / L & T
CROMPTON / SIEMENS / HAVELLS |
| 3. | Isolator | : | ALSTOM / ENGLISH ELECTRIC / L&T /
CROMPTON / SIEMENS / CRABTREE (xpro) |
| 4. | Splitter Switch | : | -do- |
| 5. | Iron clad change-over switch | : | -do- (Havells) |
| 6. | 1.10 K. V. grade PVC insulated
armored aluminium cables, STI PVC | : | CCI / GLOSTER / FINOLEX / HAVELLS |
| 7. | 440 V/1.10 K.V. grade PVC insulated
& unsheathed / copper wire, PVC
insulated and flexible cords FR & HR
PVC | : | FINOLEX / ANCHOR / HAVELLS |
| 8. | Steel conduit pipes and Accessories
Black enameled | : | 1st class as per IS.9537
Part-II, 1981 (Pipe samples to be approved)
1st class G.I. Pipe Galvanized
-do- |
| 9. | PVC / Polythene pipes | : | 1st class pipe (ISI Mark)
(Heavy Type) |
| 10. | G.I. Pipe | : | -do- |
| 11. | 30A/60A DP molded Isolating switch | : | ANCHOR / G.E.C. / L & T |
| 12. | Miniature Circuit Breaker / M.C.B.
Type Isolator with factory made D.B.
Board | : | MDS / L&T / SIEMENS / LEGRAND
/ CRABTREE (xpro) / / ELCB |
| 13. | Voltmeter / Ammeter / Selection switch
Bakelite cover | : | L & T / AE |
| 14. | 15 Amp. / 5 Amp. piano key type
switch & Flushed type plug socket | : | ANCHOR / CONA / REO - HAVELLS |
| 15. | Ceiling Rose / Angle Holders | : | ANCHOR / CONA / REO – HAVELLS |
| 16. | Telephone Wire Holder | : | FINOLEX / INCAB / HAVELLS |

17.	Luminous indicating type buzzer with cancellation push	:	ANCHOR / HAVELS / CRABTREE (xpro)
18.	Buzzer	:	HAVELS / CRABTREE / ATHENA
19.	15 Amp. / 5 Amp. / Modular type Switches and sockets over PVC/ G.I. metallic boxes	:	- do -
20.	Call bell / Alarm bell	:	ELLORA / ANCHOR / HAVELS
21.	Bulk head light fittings	:	G.E.C. / CROMPTON / BAJAJ / PHILIPS / HAVELS
22.	Fluorescent & M.V. light	:	PHILIPS / G.E.C. / BAJAJ / CROMPTON / HAVELS
23.	Ceiling Fan / Wall Bracket Fan	:	G.E.C. / CROMPTON / KHAITAN/ USHA / ANCHOR / ALMONARD / HAVELS
24.	Exhaust Fan	:	BAJAJ / USHA / ALMONARD / HAVELS
25.	Paint	:	Shalimar / Jenson & Nicholson / Tata British paint
26.	Mirror Optics Lights	:	Phillips / ECG / Decon / Anchor / Oasis / HAVELS
27.	LED Down Lighters (Surface / Recessed)	:	Phillips / JAQUAR / NIRVANA
28.	150KVA, 11/0.4 KV	:	OEU / KT PVT. LYD / ALPHA DYN-11, ONAN Type cooling
29.	Data wire & Accessories	:	D-Link / SYSMAX
30.	Automatic A. C. starter	:	GEC / L& T / HAVELS – CRABTREE
31.	Air-Curtain	:	ALMONARD
32.	TIMER SWITCH	:	CRABTREE (XPRO) (HAVELS)

**BILL OF QUANTITIES OF ELECTRICAL INSTALLATION, DATA CABLING &
AIR-CONDITIONING WORK OF KANTAMALA BRANCH & ATM OF
BANK OF BARODA**

SUMMARY

<u>DESCRIPTION</u>	<u>AMOUNT (Rs)</u>
Section – A – Electrical Installation Work of Branch	Rs.
Section - B – Data Cabling Work	Rs.
Section - C – Electrical Installation Work of ATM	Rs.
Section - D – Air-Conditioning Work	Rs.
Total	Rs.

**BILL OF QUANTITIES OF ELECTRICAL INSTALLATION & DATA CABLING WORK OF
KANTAMALA BRANCH OF BANK OF BARODA**

Sl. No.	Particulars	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
	Section - A - Electrical Installation Work				
1	Main Panel Board				
	Supplying, fabrication and installation of L.T. Distribution panel Box, wall mounting type made out of CRCA M.S. Sheet of thickness 18 SWG with provision for neoprene rubber gasket at all joints/doors etc. to make the panel dust, vermin and water proof. The clearance between phase to phase of the Bus-Bar and phase to earth shall be 25.4 mm. (minimum) and between Neutral and earth shall be 19mm. (Minimum) and connections from Bus Bar to Cut-outs / Switches / MCB's / Meters etc. shall be shrouded / insulated in order to avoid accidental touch and all the Bus Bars shall be suitable colour coded. All Cable entry shall be from the bottom and all cable exists shall be from the top only. The connection from the Bus-Bar chamber to the Meters shall be through M.S. conduit pipes welded at the base of the box and the doors of all meter chambers and the Bus-Bar chambers shall have provision for sealing so as to make them tamper proof.				
	The width of the cable alley wherever required shall be a minimum of 150 mm. The panel shall be treated with acid and thoroughly washed and dried before painting to remove all rust and dust and then in two coats of Anti-corrosive red oxide metal primer painted and two coats of smoke grey enamel paint. The door shall have hinges and suitable thumb screws/panel locks and danger plates of appropriate rating. The drawing of the panel shall be made by the fabricator basing on the single line diagram provided before fabrication of the panel and the same shall be approved.				

	Incoming:				
	63 Amp TPN SFU with HRC fuse - 1 set				
	VAF Electronic Digital Meter - 1 set				
	100/5 C.T. - 1 set				
	63 Amp TPN Electrolytic Copper Bus - 1 set				
	With Outgoing:				
	40 Amp TPN MCB - 1 No.				
	32 Amp DP MCB - 10 No.				
		Set	1.00		
	(Rate in words)				
2	Computer DB				
	Computer Terminal DB (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including, making good to all damages with following arrangements:-				
	Incoming : 25 amp. DP MCB - 1 No.				
	Outgoing : 10 amp. SP MCB - 10 Nos.	Set	1.00		
	(Rate in words)				
3	Light DB				
	Light DB (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including, making good to all damages with following arrangements:-				
	Incoming : 25 amp. DP MCB - 1 No.				
	Outgoing : 6 amp. SP MCB - 6 Nos.	Set	1.00		
	(Rate in words)				
4	UPS Input DB				
	UPS Input DB for single phase UPS (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including making good to all damages with following arrangements:-				
	Incoming : 40 amp. DP MCB - 1 No.				
	Outgoing : 20 amp. DP MCB - 2 Nos.	Set	1.00		

	(Rate in words)				
5	UPS Output DB				
	UPS Output DB for single phase UPS (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including making good to all damages with following arrangements:-				
	Incoming : 32 amp. DP MCB - 1 No.				
	Outgoing : 25 amp. DP MCB - 2 Nos.	Set	1.00		
	(Rate in words)				
6	Sub-Main Wiring				
	Supplying and laying partly recessed (concealed) in wall and partly on surface of the R.C.C. ceiling / under false ceiling of Sub-Main and computer wiring drawn in 25 mm. outer diameter M.S. conduit pipe as per IS: 9537 (Part-II) with two runs of single core PVC insulated un-sheathed cable of copper conductor of size as specified below of 650/1100 Volt grade with running earth continuity wire of insulated (250/650) Volt grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG). with Circuit wiring. Air Conditioner point, power plug point and hall for taking connection to computers as detailed below.				
(a)	From UPS output DB to computer DB (4.0 Sqmm x 2 + 2.5 Sqmm. X 1) PVC single core copper wire.	Rft	30.00		
	(Rate in words)				
(b)	From L.T. panel to UPS input / Light DB / Raw Power and also to AC (2 Sqmm x 6 + 2.5 Sqmm. X 1) PVC single core copper wire.	Rft	130.00		
	(Rate in words)				
(c)	From computer terminal DB to computer terminal and from LDB to Raw power (2.5 Sqmm. X 2 + 1 Sqmm. X 1) PVC Single core copper wire.	Rft	220.00		
	(Rate in words)				
7	AC Industrial Socket				

	Supply and installation of AC Power unit comprises of 20 Amp metal clad plug socket with plug 20 Amp MCB and indicator. (Havells Make)	Nos.	3.00		
	(Rate in words)				
8	Point Wiring				
	Recessed (concealed) wiring to new light, fan, exhaust fan etc. point described below in 25 mm. outer diameter M.S. Conduit pipe as per IS:9537 (Part-II) with single core PVC insulated, unsheathed cable of copper conductor of size 1.5 Sqmm. (22/0.3 mm.) for point wiring and 2.5 Sqmm. box, junction box, switch board etc. of 650/1100 volt grade with fixing of company made Galvanized Boxes of 50 mm. deep of appropriate size inside the wall, 5 Amps. 230/250 Volts modular clip-in type switches, Angle batten holder/Batten holder/Ceiling rose (as required), 25/50 mm. deep R.J. Box with 3 mm. thick Bakelite cover of the required sizes on R.J. box switch box, junction box etc. and earth continually wire of insulated (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG)				
(a)	With one 5 Amp switch controlling two nos. of light points.	Pts.	7.00		
	(Rate in words)				
(b)	With one 5 Amp switch controlling one no. of points.	Pts.	7.00		
	(Rate in words)				
9	Computer Terminal				
	Supplying and fixing recessed modular clip-in type Computer terminals having 3 nos. of 6 Amp. Switches, 3 nos. of 6 Amp. Sockets and 1 no. of indicator to be fixed on galvanized boxes of company made.	Sets.	5.00		
	(Rate in words)				
10	Printer Terminal & Raw Power				

	Supplying and fixing recessed modular clip-in-type terminals having 1 No. of 16 Amp. Switch-1 with 5 in one 16 Amp. Socket and 1 no. of indicator to be fixed on galvanized boxes of company made.	Sets.	5.00		
	(Rate in words)				
11	5A Plug Socket				
	Recessed (concealed) wiring to 5 Amp. 250 Volts 2/3 Pin wall socket with Switch as detailed below in 25 mm. outer diameter M.S. conduit pipe as per IS:9537 (Part-II) with single core PVC insulated, un-sheathed cable of copper conductor of size 1.5 Sq. mm. x 2 (220/0.3 mm.) for point wiring and 2.5 Sq.mm. (36/0.3mm) for Circuit wiring drawn from B.D.B. to loop-in-box, junction box, switch board etc. of 650/1100 Volts grade modular clip-in-type Switches and sockets, G.I. company make boards of appropriate size inside the wall and earth continuity wire of insulated (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG)				
(a)	In existing switch Board	Pts.	2.00		
	(Rate in words)				
(b)	On separate board	Pts.	8.00		
	(Rate in words)				
12	Earthing				
	Supplying all materials & making earthing with 600 x 600 x 3 mm. copper plate & 40 mm. dia 2.5 mtr. Long G.I. pipe for watering, brick masonry chamber 300 x 300, charcoal & salt etc. all as per I.E. rule including duly painted M.S. cover with locking arrangement all complete.	Sets.	2.00		
	(Rate in words)				
13	Earth Lead				
	Supplying and laying earth lead with 25 x 3 copper plate, one earth lead from each copper earth electrodes. Both electrodes are again shorted.	Rft	30.00		
	(Rate in words)				

14	Master Control Switch				
	Providing, fixing, installation and testing of Master Control Switch for both Branch AC & lights only without effecting the ATM, UPS and Glow Sign Board to be installed near Entrance Door. Switch to be housed in factory made double door metal box duly concealed in wall having following arrangements.				
	40A 4 Pole Isolator MCB (For AC) - 1 No.				
	40A 2 Pole Isolator MCB (For Lights) - 1 No.				
	8 way double door Metal Box - 1 No.				
		Set.	1.00		
	(Rate in words)				
15	Wiring				
	Wiring to above drawn in pvc conduits duly concealed in wall.				
(a)	6.00 sqmm x 4 + 2.5 sqmm x 1 drawn from Main LT Panel to Master Control AC switch and also to be taken back to AC Bus Bar of LT Panel.	Rft	40.00		
	(Rate in words)				
(b)	6.00 sqmm x 2 + 2.5 sqmm x 1 drawn from Main LT Panel to Master Control AC switch and also to be taken back to Light MCB.	Rft	40.00		
	(Rate in words)				
16	Fitting & Fixtures				
(a)	Supply, fitting and fixing of 18 Watt round recessed type Philips LED fittings including all connection wire and installation and testing complete.	Nos.	14.00		
	(Rate in words)				
(b)	Supply, fitting and fixing of 2' x 2' LED light of 36 Watt with fixing accessories.	Nos.	5.00		
	(Rate in words)				

(c)	Supplying, fitting & fixing of Wall Bracket Fan of 400 mm dia sweep white revolving and tilting type in plastic body, cover and blades having cord operated oscillating device and speed device M.S. brackets etc. all complete (Bajaj Midea BW 04 or its equivalent Khaitan / Usha / Crompton / Almonard)	Nos.	8.00		
	(Rate in words)				
(d)	Supplying, fitting & fixing of 20 Watt LED Tube wall / ceiling fittings complete.	Nos.	2.00		
	(Rate in words)				
(e)	Supplying, fitting and fixing all materials & wiring to Call Bell push modular type including buzzer type call bell.	Nos.	1.00		
	(Rate in words)				
	Sub Total				
	Section - B - Data Cabling Work				
	Providing following items to set up Computer Lan network of D-Link or any other standard make having ETIL and UL Certification and 350 MHz frequency support after obtaining prior approval from the Consultant.				
1	Supplying and laying of all materials CAT - 6 cable for Lan - wiring to Computer points in partly pre-laid conduits in floor and party by supplying and laying recessed PVC conduits in partition wall/masonry wall by cutting, chasing etc. including mending all damages.	Rft	192.00		
	(Rate in words)				
2	Supplying of @ 1.00 Mtr. Long patch chord each with RJ 45 jacks and installation of the same in position.	Nos.	6.00		
	(Rate in words)				
3	Supplying of Patch Chord @ 2.00 Mtr. Long with RJ 45 jacks and installation of the same in position.	Nos.	6.00		
	(Rate in words)				
4	Supplying and fixing of Information out-let box (single) (for RJ 45 connector of D-link make)	Nos.	6.00		

	(Rate in words)				
5	Supplying and fixing of 16 PORT Switch :: 10/100/1000 Mbps Gigabit Smart switch (DGS - 1224T) D-link make.	Nos.	1.00		
	(Rate in words)				
6	Supplying and fixing of 16 PORT UTP Patch Panel	Nos.	1.00		
	(Rate in words)				
7	Supplying and fixing in position of wall mounted rack with cable manager of following size:				
(a)	6U Height	Nos.	1.00		
	(Rate in words)				
	Sub Total				

BILL OF QUANTITIES OF ELECTRICAL INSTALLATION, DATA CABLING & AIR-CONDITIONING WORK OF KANTAMALA BRANCH & ATM OF BANK OF BARODA

Sl. No.	Particulars	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
	Section - A - Electrical Installation Work of Branch				
1	Main Panel Board				

	Supplying, fabrication and installation of L.T. Distribution panel Box, wall mounting type made out of CRCA M.S. Sheet of thickness 18 SWG with provision for neoprene rubber gasket at all joints/doors etc. to make the panel dust, vermin and water proof. The clearance between phase to phase of the Bus-Bar and phase to earth shall be 25.4 mm. (minimum) and between Neutral and earth shall be 19mm. (Minimum) and connections from Bus Bar to Cut-outs / Switches / MCB's / Meters etc. shall be shrouded / insulated in order to avoid accidental touch and all the Bus Bars shall be suitable colour coded. All Cable entry shall be from the bottom and all cable exists shall be from the top only. The connection from the Bus-Bar chamber to the Meters shall be through M.S. conduit pipes welded at the base of the box and the doors of all meter chambers and the Bus-Bar chambers shall have provision for sealing so as to make them tamper proof.				
	The width of the cable alley wherever required shall be a minimum of 150 mm. The panel shall be treated with acid and thoroughly washed and dried before painting to remove all rust and dust and then in two coats of Anti-corrosive red oxide metal primer painted and two coats of smoke grey enamel paint. The door shall have hinges and suitable thumb screws/panel locks and danger plates of appropriate rating. The drawing of the panel shall be made by the fabricator basing on the single line diagram provided before fabrication of the panel and the same shall be approved.				
	Incoming				
	100 Amp TPN SFU with HRC fuse - 1 set				
	100 Amp TPNE BUS BAR - 1 set				
	Terminated in two Bus bar through equipments as given below :				
	Termination - 1				
*	63 Amp 4 Pole C.O. - 1 No.				
*	RYB (LCD) Indicator - 1 set				
*	0-500 V voltmeter - 1set				
*	selection switch for above - 1 No.				

*	0-100 Amp ammeter - 1 set				
*	selection switch for above - 1 No.				
*	CT 100/5 Amp - 1 set				
*	63 Amp TPN Cu Electrolytic - 1 set				
*	Bus No - I				
	With Outgoing :				
	40 Amp DP MCB for single phase A.C. - 6 Nos.				
	Termination - 2				
*	63 Amp 4 Pole C.O. - 1 No.				
*	RYB (LCD) Indicator - 1 set				
*	0-500 V voltmeter - 1set				
*	selection switch for above - 1 No.				
*	0-100 Amp ammeter - 1 set				
*	selection switch for above - 1 No.				
*	CT 100/5 Amp - 1 set				
*	63 Amp TPN Cu Electrolytic - 1 set				
*	Bus No - II				
	With Outgoing :				
	63 Amp TPN MCB to UPS - 2 Nos.				
	40 Amp DP MCB to LDB - 4 Nos.	Set	1.00		
	(Rate in words)				
2	Computer DB				
	Computer Terminal DB (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including, making good to all damages with following arrangements:-				
	Incoming : 25 amp. DP MCB - 1 No.				
	Outgoing : 10 amp. SP MCB - 10 Nos.	Set	1.00		
	(Rate in words)				
3	Inverter DB				

	6 way Double Door (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including, making good to all damages with following arrangements:-				
	25 Amp. DP MCB - 2 (1 Spare)	Set	1.00		
	(Rate in words)				
4	Light DB				
	Light DB (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including, making good to all damages with following arrangements:-				
	Incoming : 25 amp. DP MCB - 1 No.				
	Outgoing : 6 amp. SP MCB - 6 Nos.	Set	1.00		
	(Rate in words)				
5	UPS Input DB				
	UPS Input DB for single phase UPS (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including making good to all damages with following arrangements:-				
	Incoming : 40 amp. DP MCB - 1 No.				
	Outgoing : 20 amp. DP MCB - 2 Nos.	Set	1.00		
	(Rate in words)				
6	UPS Output DB				
	UPS Output DB for single phase UPS (Company made with double door cover to be used) M.S. Cubical Type duly flushed with the wall surface including making good to all damages with following arrangements:-				
	Incoming : 32 amp. DP MCB - 1 No.				
	Outgoing : 25 amp. DP MCB - 2 Nos.	Set	1.00		
	(Rate in words)				
7	Sub-Main Wiring				

	Supplying and laying partly recessed (concealed) in wall and partly on surface of the R.C.C. ceiling / under false ceiling of Sub-Main and computer wiring drawn in 25 mm. outer diameter M.S. conduit pipe as per IS: 9537 (Part-II) with two runs of single core PVC insulated un-sheathed cable of copper conductor of size as specified below of 650/1100 Volt grade with running earth continuity wire of insulated (250/650) Volt grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG). with Circuit wiring. Air Conditioner point, power plug point and hall for taking connection to computers as detailed below.				
(a)	From UPS output DB to computer DB (4.0 Sqmm x 2 + 2.5 Sqmm. X 1) PVC single core copper wire.	Rft	120.00		
	(Rate in words)				
(b)	From L.T. panel to UPS input / Light DB / Raw Power and also to AC (2 Sqmm x 6 + 2.5 Sqmm. X 1) PVC single core copper wire.	Rft	540.00		
	(Rate in words)				
(c)	From computer terminal DB to computer terminal and from LDB to Raw power (2.5 Sqmm. X 2 + 1 Sqmm. X 1) PVC Single core copper wire and also inverter DB to individual switch boards.	Rft	820.00		
	(Rate in words)				
8	AC Industrial Socket				
	Supply and installation of AC Power unit comprises of 20 Amp metal clad plug socket with plug 20 Amp MCB and indicator. (Havells Make)	Nos.	4.00		
	(Rate in words)				
9	Point Wiring				

	Recessed (concealed) wiring to new light, fan, exhaust fan etc. point described below in 25 mm. outer diameter M.S. Conduit pipe as per IS:9537 (Part-II) with single core PVC insulated, unsheathed cable of copper conductor of size 1.5 Sqmm. (22/0.3 mm.) for point wiring and 2.5 Sqmm. box, junction box, switch board etc. of 650/1100 volt grade with fixing of company made Galvanized Boxes of 50 mm. deep of appropriate size inside the wall, 5 Amps. 230/250 Volts modular clip-in type switches, Angle batten holder/Batten holder/Ceiling rose (as required), 25/50 mm. deep R.J. Box with 3 mm. thick Bakelite cover of the required sizes on R.J. box switch box, junction box etc. and earth continually wire of insulated (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG)				
(a)	With one 5 Amp switch controlling two nos. of light points.	Pts.	16.00		
	(Rate in words)				
(b)	With one 5 Amp switch controlling one no. of points.	Pts.	18.00		
	(Rate in words)				
10	Computer Terminal				
	Supplying and fixing recessed modular clip-in type Computer terminals having 3 nos. of 6 Amp. Switches, 3 nos. of 6 Amp. Sockets and 1 no. of indicator to be fixed on galvanized boxes of company made.	Sets.	7.00		
	(Rate in words)				
11	Printer Terminal & Raw Power				
	Supplying and fixing recessed modular clip-in type terminals having 1 No. of 16 Amp. Switch-1 with 5 in one 16 Amp. Socket and 1 no. of indicator to be fixed on galvanized boxes of company made.	Sets.	5.00		
	(Rate in words)				
12	5A Plug Socket				

	Recessed (concealed) wiring to 5 Amp. 250 Volts 2/3 Pin wall socket with Switch as detailed below in 25 mm. outer diameter M.S. conduit pipe as per IS:9537 (Part-II) with single core PVC insulated, un-sheathed cable of copper conductor of size 1.5 Sq. mm. x 2 (220/0.3 mm.) for point wiring and 2.5 Sq.mm. (36/0.3mm) for Circuit wiring drawn from B.D.B. to loop-in-box, junction box, switch board etc. of 650/1100 Volts grade modular clip-in-type Switches and sockets, G.I. company make boards of appropriate size inside the wall and earth continuity wire of insulated (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG)				
(a)	In existing switch Board	Pts.	2.00		
	(Rate in words)				
(b)	On separate board	Pts.	12.00		
	(Rate in words)				
13	Earthing				
	Supplying all materials & making earthing with 600 x 600 x 3 mm. copper plate & 40 mm. dia 2.5 mtr. Long G.I. pipe for watering, brick masonry chamber 300 x 300, charcoal & salt etc. all as per I.E. rule including duly painted M.S. cover with locking arrangement all complete.	Sets.	2.00		
	(Rate in words)				
14	Earth Lead				
	Supplying and laying earth lead with 25 x 3 copper plate, one earth lead from each copper earth electrodes. Both electrodes are again shorted.	Rft	30.00		
	(Rate in words)				
15	Master Control Switch				
	Providing, fixing, installation and testing of Master Control Switch for both Branch AC & lights only without effecting the ATM, UPS and Glow Sign Board to be installed near Entrance Door. Switch to be housed in factory made double door metal box duly concealed in wall having following arrangements.				
	63A 4 Pole Isolator MCB (For AC) - 1 No.				

	63A 2 Pole Isolator MCB (For Lights) - 1 No.				
	8 way double door Metal Box - 1 No.				
		Set.	1.00		
	(Rate in words)				
16	Wiring				
	Wiring to above drawn in pvc conduits duly concealed in wall.				
(a)	6.00 sqmm x 4 + 2.5 sqmm x 1 drawn from Main LT Panel to Master Control AC switch and also to be taken back to AC Bus Bar of LT Panel.	Rft	120.00		
	(Rate in words)				
(b)	6.00 sqmm x 2 + 2.5 sqmm x 1 drawn from Main LT Panel to Master Control AC switch and also to be taken back to Light MCB.	Rft	120.00		
	(Rate in words)				
17	Fitting & Fixtures				
(a)	Supply, fitting and fixing of 18 Watt round recessed type Philips LED fittings including all connection wire and installation and testing complete.	Nos.	32.00		
	(Rate in words)				
(b)	Supply, fitting and fixing of 2' x 2' LED light of 36 Watt with fixing accessories.	Nos.	8.00		
	(Rate in words)				
(c)	Supplying, fitting & fixing of Wall Bracket Fan of 400 mm dia sweep white revolving and tilting type in plastic body, cover and blades having cord operated oscillating device and speed device M.S. brackets etc. all complete (Bajaj Midea BW 04 or its equivalent Khaitan / Usha / Crompton / Almonard)	Nos.	12.00		
	(Rate in words)				
(d)	Supplying, fitting & fixing of 40 Watt LED Tube wall / ceiling fittings complete.	Nos.	4.00		
	(Rate in words)				
(e)	Supplying, fitting and fixing all materials & wiring to Call Bell push modular type including buzzer type call bell.	Nos.	1.00		

	(Rate in words)				
(f)	Supply, fitting & fixing of Angle batten Holder on wall with one no. of 15 Watt LED Bulb.	Nos.	3.00		
	(Rate in words)				
(g)	Supplying, fitting and fixing of 1200 sweep Ceiling Fan with double ball bearing including supply of necessary connection wire, and electronic regulator to be fixed on existing switch board. (Bajaj / Khaitan / Usha / Almonard)	Nos.	1.00		
	(Rate in words)				
(h)	Supplying, fitting & fixing of 12" dia Exhaust Fan after cutting hole in masonry wall or making necessary arrangements / brackets etc. and mending good to damages etc. complete with supply of necessary connecting wire (Bajaj / "Bahar" or its equivalent Khaitan / Usha / Almonard)	Nos.	2.00		
	(Rate in words)				
	Sub Total				
	Section - B - Data Cabling Work				
	Providing following items to set up Computer Lan network of D-Link or any other standard make having ETIL and UL Certification and 350 MHz frequency support after obtaining prior approval from the Consultant.				
1	Supplying and laying of all materials CAT - 6 cable for Lan - wiring to Computer points in partly pre-laid conduits in floor and party by supplying and laying recessed PVC conduits in partition wall/masonry wall by cutting, chasing etc. including mending all damages.	Rft	190.00		
	(Rate in words)				
2	Supplying of @ 1.00 Mtr. Long patch chord each with RJ 45 jacks and installation of the same in position.	Nos.	6.00		
	(Rate in words)				
3	Supplying of Patch Chord @ 2.00 Mtr. Long with RJ 45 jacks and installation of the same in position.	Nos.	6.00		
	(Rate in words)				

4	Supplying and fixing of Information out-let box (single) (for RJ 45 connector of D-link make)	Nos.	6.00		
	(Rate in words)				
5	Supplying and fixing of 16 PORT Switch :: 10/100/1000 Mbps Gigabit Smart switch (DGS - 1224T) D-link make.	Nos.	1.00		
	(Rate in words)				
6	Supplying and fixing of 16 PORT UTP Patch Panel	Nos.	1.00		
	(Rate in words)				
7	Supplying and fixing in position of wall mounted rack with cable manager of following size:				
(a)	6U Height	Nos.	1.00		
	(Rate in words)				
	Sub Total				
	Section - C - Electrical Installation Work of ATM				
1	TPN DB Board				
	Supply, installation and testing of TPN DB Board having following arrangements housed in duly concealed factory made double cover metal box.				
	63A DP MCB - 1 no. - AC Main				
	32A DP MCB - 2 Nos.				
	10A SP MCB - 2 Nos.				
		Set	1.00		
	(Rate in words)				
2	6 Way CDB				
	Supply, installation and testing of 6 Way CDB having following arrangements housed in duly concealed factory made double cover metal box.				
	Incoming : 32A DP MCB - 2 Nos.				
	outgoing : 6A SP MCB - 4 Nos.				
		Set	1.00		
	(Rate in words)				
3	Supply, installation and testing of modular type 16 amp socket, switch socket with indicator duly concealed in wall on metal box.	Nos.	2.00		

	(Rate in words)				
4	Service Cable				
	Supply and laying from Branch Panel to ATM Panel of size 10 Sq. mm. 4 core XLPE armoured cable of Aluminum conductor overall of 650/1100 Volt grade confirming to IS: 1554 (Part - I) of 1988 as amended upto date laid on wall with the help of G.I. Bar and saddles. The work should be completed with cost of all labour, materials and making connections by end crimping of the cable including cutting hole in the masonry wall wherever necessary and mending good to all damages. (From LT Panel to ATM DB)	Rft	95.00		
	(Rate in words)				
5	Sub-Main Wiring				
	Supply and laying partly recessed (concealed) in wall and partly on surface of the R.C.C. ceiling / under false ceiling of Circuit / Sub-Main wiring drawn in 25 mm. outer diameter M.S. conduit pipe as per IS:9537 (Part-II) with two runs of single core PVC insulated un-sheathed cable of copper conductor of size as specified below of 650/1100 Volt grade with running earth continuity wire of insulated (250/650 Volt grade) single core Solid Copper Conductor of size 1.0 Sq. mm (1/18 SWG). with Circuit wiring, Air Conditioner point, power plug point and hall for taking connection to computers as detailed below.				
(a)	From Bank's panel to UPS and ATM DB to AC Starter Board (2 x 4 Sqmm + 1 x 2.5 Sqmm) PVC Single Core Copper wire	Rft	60.00		
	(Rate in words)				
(b)	From Computer Terminals and also from Light DB to Switch Board (2 x 2.5 Sqmm + 1 x 1.0 Sqmm) PVC Single Core Copper wire	Rft	75.00		
	(Rate in words)				
6	AC : Switch				
	Supply and installation of 2 nos. of AC Starter unit comprises of 20 Amp plug socket with plug, 20 Amp MCB and indicator including 1 no. of Timer.	Set	1.00		

	(Rate in words)				
7	Point Wiring				
	Recessed (Concealed) wiring to new light, fan, exhaust fan etc. points described below in 25 mm. outer diameter M.S. Conduit pipe as per IS:9537 (Part - II) with single core PVC insulated, unsheathed cable of copper conductor of size 1.5 Sq. mm. (22 / 0.3 mm.) for point wiring and 2.5 Sq. mm (36/0.3 mm) for Circuit wiring drawn from B.D.B. to loop in box, junction box, switch board etc. of 650/1100 volt grade with fixing of company made Galvanized Boxes of 50 mm. deep of appropriate size inside the wall, 5 Amps. 230/250 Volts modular clip-in type switches, Angle batten holder / Batten holder / Ceiling rose (as required), 25/50 mm. deep R.J. Box with 3 mm. thick Bakelite cover of the required sizes on R.J. Box switch box, junction box etc. and earth continuity wire of insulated. (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sqmm. (1/18 SWG)				
(a)	One switch to operation two lights	Pts	6.00		
	(Rate in words)				
(b)	One switch to operation one light	Pts	1.00		
	(Rate in words)				
8	5A Plug Socket				
	Recessed (concealed) wiring to 5 Amp. 250 Volts 2/3 Pin wall socket with Switch as detailed below in 25 mm. outer diameter M.S. conduit pipe as per IS:9537 (Part-II) with single core PVC insulated, un-sheathed cable of copper conductor of size 1.5 Sq. mm x 2 (22/0.3 mm.) for point wiring and 2.5 Sqmm. (36/0.3 mm) for circuit wiring drawn from B.D.B. to loop-in-box, junction box, switch board etc. of 650/1100 Volts grade modular clip-in-type Switches and sockets, G.I. company make boards of appropriate size inside the wall and earth continuity wire of insulated (250/650 Volts grade) single core Solid Copper Conductor of size 1.0 Sq. mm. (1/18 SWG).				
(a)	In existing switch board	Pts	1.00		
	(Rate in words)				

(b)	On separate board	Pts	1.00		
	(Rate in words)				
9	Computer Point				
	Supply and fixing recessed modular clip in type computer terminal having 2 nos. of 6 Amp. Switches, 2 nos of 6 amp sockets and 1 no. of indicator mounted over company made galvanized box duly flush with wall.	Set	1.00		
	(Rate in words)				
10	Earthlead				
	Providing, fixing, laying and testing of 25 x 3mm copper flat for earthing to UPS	Rft.	55.00		
	(Rate in words)				
11	Fittings & Fixtures				
(a)	Supply, fitting and fixing of 2' x 2' LED light of 36 Watt with fixing accessories complete.	Nos.	1.00		
	(Rate in words)				
(b)	Supply, fitting and fixing of 15/18 Watt round recessed type Philips LED fittings including all connection wire and installation and testing complete.	Nos.	12.00		
	(Rate in words)				
(c)	Supply, fitting and fixing of 1 x 20 Watt LED batten fitting on back room.	No.	1.00		
	(Rate in words)				
	Sub Total				
	Section - D - Air-Conditioning Work				
1	Supply, installation, testing and commissioning and handing over the satisfactory working condition the following star rated split type air conditioning machines of following capacities having following components.				

(i)	Outdoor condensing Unit - Split type A.C. Unit complete with scaled type Rotary compressor, copper tube aluminum finned condenser, condenser fan, fan-motor connected piping, overload protection, TRD, other protection switches, relays, starters, internal wiring and all other accessories, as required - all housed inside a cabinet suitably painted for outdoor application.				
(ii)	High wall evaporator - Unit comprising copper tube aluminum finned cooling coil, statically balanced blower, blower motor, refrigerant - flow control, electrical wiring, condensate drain tray, required length of power supply cable with 3 - pin plug and all other accessories - all housed inside a cabinet. (Make : Blue Star / Carrier / Hitachi / LG).				
(i)	1.0 TR(BEE rating 5 Star)	Sets.	1.00		
	(Rate in words)				
(ii)	1.5 TR (BEE rating 5 star)	Sets.	4.00		
	(Rate in words)				
2	Necessary control system for maintaining temperature within +/- 2 degree F.	Sets.	4.00		
	(Rate in words)				
3	Necessary refrigerant piping between indoor and outdoor unit. (Contractors are to visit the site, examine and quote accordingly to meet all eventualities.)	Rmt.	75.00		
	(Rate in words)				
4	Insulation Refrigerant suction line as specified. (Contractors are to visit the site, examine and quote accordingly to meet all eventualities.)	Sets.	4.00		
	(Rate in words)				
5	Platform/mounting arrangement for the outdoor unit. (Contractors are to visit the site, examine and quote accordingly to meet all eventualities.)	Sets.	4.00		
	(Rate in words)				
6	Necessary wiring between indoor and outdoor units. (Contractors are to visit the site, examine and quote accordingly to meet all eventualities.)	Mtr	80.00		
	(Rate in words)				

7	Necessary refrigerant and oil for all above the units for testing, balancing till hanging over in satisfactory working condition.	Items	L.S		
	(Rate in words)				
8	Commissioning, testing, balancing the A.C. System and handing over the same to the Owner in satisfactory working condition.	Items	L.S		
	(Rate in words)				
9	Voltage Stabilizer of reputed make for supplying 220 +/- 5% stable voltage when the supply voltage will fluctuate between 90 to 280 Volts complete with voltmeter, 1.5 mtrs. Power supply cable, 3-pin plug and other accessories.				
(a)	4 KVA	Nos.	1.00		
	(Rate in words)				
(b)	5 KVA	Nos.	4.00		
	(Rate in words)				
	Sub Total				