SBI INFRA MANAGEMENT SOLUTIONS PVT.LTD.

CIRCLE OFFICE, THIRD FLOOR, STATE BANK OF INDIA, SYNERGY BUILDING, C-6, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA EAST, MUMBAI-400051
PH. NO. 022-26445665

PART – A: TECHNICAL BID

TENDER ID: **MUM201906029**

PROPOSED ELECTRICAL WORKS FOR SBI THANE COLLECTORATE BRANCH, THANE (WEST) - 400 601.

TENDER SUBMITTED BY:

NAME : _____

ADDRESS : _____

_____

_____

DATE : _____

ARCHITECT

M/S. SRUJAN INTERIORS & ARCHITECTS PVT. LTD.
455/456, 4TH FLOOR, A WING BALAJI BHUVAN, SECTOR NO. 11,
NEAR. CBD STATION, BELAPUR (EAST),
NAVI MUMBAI – 400 614
TEL. NO. 022-67210224
E-MAIL: rafiq@siapl.com

NOTICE INVITING TENDERS

SBIIMS on behalf of SBI through its Architect **M/s. Srujan Interiors & Architects Pvt. Ltd., Navi Mumbai** invites "online item rate E-tender" from the SBIIMS Empaneled contractors under appropriate category (10 Lakh and above) for the captioned work.

The details of tender are as under:

S.No.	Description	
1.	Name of work	PROPOSED **ELECTRICAL** WORKS for **SBI Thane Collectorate Branch, Thane (West)** - 400 601.
2.	Nature of Work	Electrical Works
3.	Time allowed for completion	**3(Three) Months**
4.	Cost of Tender Documents	**Rs. 3000/- (Rs. Three Thousand Only)** to be paid through State Bank Collect **ONLY** as detailed under; 1) login https://www.onlinesbi.com 2. Select SB Collect from Top Menu, click the check box and "Proceed" 3. Select "All India" in "State of Corporate/Institution" & Select "Commercial Services" in "Type of Corporate/Institution" then "Go" 4. Select "SBI Infra Management Solutions Pvt. Ltd" in Commercial Services Name and "Submit" 5. Select "Tender Application Fee" in "Payment Category" and enter the "Tender ID" exactly as given in first page top of this tender (characters in upper case Only). 6. Fill up all fields such as email, GST No., Mobile No, Vendor/Firm Name etc and make payment. 7. Enclose payment receipt having unique reference No. along with EMD.
5.	Earnest Money Deposit	**Rs. 18,000/- (Rs. Eighteen thousand only) by means of Demand Draft / Pay Order** from any scheduled Nationalized Bank drawn **in favour of SBI Infra Management Solutions Pvt. Ltd. and payable in Mumbai.**
6.	Initial Security Deposit	2% of contract amount in favour of SBI (EMD will be returned)
7.	Date of issue of tender documents form Bank's website	28-06-2019 to 09-07-2019 ***www.sbi.co.in*** under <Link>procurement news.
8.	Last date & time for submission of Technical bid, EMD and cost of tender document	09-07-2019 by 3.00 PM
9.	Address at which Technical bid(hard copy) along with EMD & Cost of tender document has to be submitted.	Vice President & Circle Head, SBI Infra Management Solutions Pvt. Ltd. SBI, Local Head Office,3rd floor,C-6,G-Block Synergy Building, Bandra- Kurla Complex, Bandra (East), Mumbai-400 051..
10.	Last date & time for submission of online price bid.	12-07-2019 at 3.00 PM At: - https://etender/SBI
11.	Last date & time for opening of online price bid.	12-07-2018 at 3.30 PM At: - https://etender/SBI

12.	Place of opening tenders	Vice President & Circle Head, SBI Infra Management Solutions Pvt. Ltd. SBI, Local Head Office,3rd floor,C-6,G-Block Synergy Building, Bandra- Kurla Complex, Bandra (East), Mumbai-400 051..
13.	Liquidated Damages	0.50% of contract amount per weeks subject to max. 5% of contract value or final bill value.
14.	Defects liability period	12 Months from the date of Virtual Completion
15.	Validity of offer	90 days from the date of opening of Price-bid
16.	Value of Interim Certificate	**Rs. 5 Lakhs**. No advance on materials / plant / machinery or mobilization advance shall be paid under any circumstances

16. Tenders can be downloaded from the bank's website *www.sbi.co.in* (link) <Procurement News>.It shall be responsibility of the contractor to arrange and ensure that all pages of technical and financial bid are properly bound separately. Tenders in loose pages may be disqualified.

17. The contractor shall sign and stamp each page of the tender document thereby ensuring the number and sequence of all pages.

18. No conditions other than mentioned in the tender will be considered, and if given they will have to be withdrawn before opening of the price-bid.

19. The SBIIMS Pvt. Ltd. reserve their rights to accept or reject any or all the tenders, either in whole or in part without assigning any reason(s) for doing so and no claim / correspondence shall be entertained in this regard.

20. Tenders received without EMD and Cost of Tender Documents shall be summarily rejected and such tenders shall not be allowed to participate in the online price bidding process.

21. In case the date of opening of tenders is declared as a holiday, the tenders will be opened on the next working day at the same time.

22. SBIIMS Pvt. Ltd. has the right to accept / reject any / all tenders without assigning any reasons and no correspondence shall be entertained in this regard.

Yours Faithfully,

For & On-behalf of SBI Infra Management Solutions Pvt. Ltd.

FORM TENDER

To,
Vice President & Circle Head,
SBI Infra Management Solutions Pvt. Ltd.
SBI, Local Head Office, 3rd Floor, C-6,G-Block
Synergy Building, Bandra- Kurla Complex,
Bandra (East), Mumbai-400 051.

Dear Sir,

Having examined the drawings, specification, design and schedule of quantities relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the tender, I/We hereby offer to execute the works specified in the said memorandum at the rates mentioned in the attached Schedule of Quantities and in accordance in all respects with the specifications, design, drawings and instructions in writing referred to in conditions of tender, the Articles of Agreement, Special Conditions, Schedule of Quantities and Conditions of Contract and with such materials as are provided for by, and in all other respects in accordance with such conditions so far as they may be applicable.

MEMORANDUM

Description of work	PROPOSED **ELECTRICAL** WORKS for **SBI Thane Collectorate Branch, Thane (West)**.
Earnest Money	**Rs. 18,000/- (Rs. Eighteen thousand only)** by means of Demand Draft / Pay Order from any scheduled Nationalized Bank drawn in favour of SBI Infra Management Solutions Pvt. Ltd. and payable in Mumbai.
Percentage, if any, to be deducted from Bills and total amount to be retained	10 % from Running Bills, subject to maximum Total 5% of contract amount or actual Final Bill value including EMD & Initial Security Deposit.
Time allowed for completion of the Works from fourteenth day after the date of writtenorder or date of handing over of the site (whichever is later) to commence the work	3(Three)Months

I / We have deposited a sum of **Rs. 18,000/- (Rs. Eighteen thousand only)** of the total tender amount as Earnest Money with the SBI Infra Management Solutions Pvt. Ltd. which amount is not to bear any interest. Should I / We fail to execute the Contract when called upon to do so I / We do hereby agree that this sum shall be forfeited by me/us to SBI Infra Management Solutions Pvt. Ltd.

1) Our Bankers are:

   i)

   ii)

   The names of partners of our firm are:

i)

ii)

Name of the partner of the firm

Authorised to sign

Or

(Name of person having Power of
Attorney to sign the Contract.
(Certified true copy of the Power
of Attorney should be attached)

Yours faithfully,

Signature of Contractors.

Signature and addresses of Witnesses

i)

ii)

SAMPLE BUISNESS RULE DOCUMENT

ONLINE E-TENDERING FOR FORPROPOSED **ELECTRICAL** WORKS for **SBI Thane Collectorate Branch, Thane (West)**.

(A) Business rules for E-tendering:

1. Only empaneled contractors with SBIIMS PVT. LTD. under appropriate category who are invited by the project Architect/SBIIMS shall only be eligible to participate.

2. SBIIMS PVT.LTD. will engage the services of an E-tendering service provider who will provide necessary training and assistance before commencement of online bidding on Internet.

3. In case of e-tendering, SBIIMS will inform the vendor in writing, the details of service provider to enable them to contact and get trained.

4. Business rules like event date, closing and opening time etc. also will be communicated through service provider for compliance.

5. Contractors have to send by email, the compliance form in the prescribed format (provided by service provider),before start of E-tendering. Without this the vendor will not be eligible to participate in the event.

6. The Contractors will be required to submit the various documents in sealed Envelope to the office of SBI Infra Solutions Pvt Ltd.at the address mentioned hereinbefore by the stipulated date i.e. (1) Hard Copy of Technical Bid duly signed and stamped on each page (2) Demand Draft of specified amount of EMD (3) Demand Draft of Cost of Tender documents (4) Certified copy of A-Class Electrical License). Contractors not submitting any one or more documents shall not be eligible to participate in the on line price bidding.

7. E-tendering will be conducted on schedule date & time.

8. **The e-tendering will be treated as closed only when the bidding process gets closed in all respects for the item listed in the tender.**

(B) Terms & conditions of E-tendering:

SBIIMS PVT. LTD. shall finalize the Tender through e-tendering moderator which **E- Procurement Technologies Ltd,** has been engaged by SBIIMS an authorized service provider. Please go through the guidelines given below and submit your acceptance to the same along with your Commercial Bid.

1. E-tendering shall be conducted by SBIIMS through **E- Procurement Technologies Ltd,**, on pre-specified date. While the Contractors shall be quoting from their own offices/ place of their choice, Internet connectivity and other paraphernalia requirements shall have to be ensured by Contractors themselves. In the event of failure of their Internet connectivity, (due to any reason whatsoever it may be) SBIIMS shall not be held responsible & no-further request by the bidder/ tenderer shall be entitled. In order to ward-off such contingent situation bidders are requested to make all the necessary arrangements/ alternatives such as back–up power supply whatever required so that they are able to circumvent such situation and still be able to participate in the E-tendering successfully. Failure of power at the premises of Contractors during the E-tendering cannot be the cause for not participating in the E-tendering. On account of this the time for the E-tendering cannot be extended and SBIIMS Pvt. Ltd. is not responsible for such eventualities.

2. M/s. Antares Systems Limited shall arrange to train your nominated person(s), without any cost to you. They shall also explain you all the Rules related to the E-tendering. You are required to give your compliance on it before start of bid process.

3. BIDDING CURRENCY AND UNIT OF MEASUREMENT: Bidding will be conducted in Indian currency & Unit of Measurement will be displayed in Online E-tendering.

4. BID PRICE: The Bidder has to quote the rate as per the Tender Document provided by SBIIMS Pvt. Ltd. their appointed Architects.

5. VALIDITY OF BIDS: The Bid price shall be firm for a period specified in the tender document and shall not be subjected to any change whatsoever.

6. Procedure of E-tendering:
   i. **Online E-tendering** :

   (a) The hard copy of the Technical as well as Price Bid Document are available on the Bank's website during the period specified in the Notice Inviting Tender (NIT).
   (b) Online e-tendering is open to the empaneled bidders who receive NIT from the Architect and qualified for participating in the price bidding as provisions mentioned hereinabove through SBIIMS approved Service Provider.
   (c) The Price-Bid shall be made available online by the Service Provider wherein the contractors will be required to fill-in their Item-wise rates for each item.
   (d) The Contractors are advised not to wait till the last minute to submit their online item-wise quoting the price bid to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.
   (e) It is mandatory to all the bidders participating in the price bid to quote their rates for each and every item.
   (f) In case, contractor fails to quote their rates for any one or more tender items, their tender shall be treated as ***"Incomplete Tender"*** and shall be liable for rejection.

7. LOG IN NAME & PASSWORD: Each Bidder is assigned a Unique User Name & Password by E-Procurement Technologies Ltd, The Bidders are requested to change the Password after the receipt of initial Password from E- Procurement Technologies Ltd, All bids made from the Login ID given to the bidder will be deemed to have been made by the bidder.

8. BIDS PLACED BY BIDDER: Bids will be taken as an offer to execute the work as specified. Bids once made, cannot be cancelled / withdrawn and the Bidder shall be bound to execute the work at the quoted bid price. In case the L-1 Bidder backs out or fail to complete the work as per the rates quoted, SBIIMS shall at liberty to take action as deemed necessary including DE paneling such contractors and forfeiting their EMD..

9. At the end of the E-tendering, SBIIMS Pvt. Ltd. will decide upon the winner. SBIIMS Pvt. Ltd. decision on award of Contract shall be final and binding on all the Bidders.

10. SBIIMS shall be at liberty to cancel the E-tendering process / tender at any time, before ordering, without assigning any reason.

11. SBIIMS shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause.

12. Other terms and conditions shall be as per your techno-commercial offers and other correspondences till date.

13. OTHER TERMS & CONDITIONS:

- The Bidder shall not involve himself or any of his representatives in Price manipulation of any kind directly or indirectly by communicating with other suppliers / bidders.

- The Bidder shall not divulge either his Bids or any other exclusive details of SBIIMS Pvt. Ltd. to any other party.

- SBIIMS Pvt. Ltd. decision on award of Contract shall be final and binding on all the Bidders.

- SBIIMS Pvt. Ltd. reserves their rights to extend, reschedule or cancel any E-tendering within its sole discretion.

- SBIIMS or its authorized service provider M/s. Antares Systems Limited shall not have any liability to Bidders for any interruption or delay in access to the site irrespective of the cause.

- SBIIMS or its authorized service provider M/s. Antares Systems Limited is not responsible for any damages, including damages that result from, but are not limited to negligence.

- SBIIMS or its authorized service M/s. Antares Systems Limited will not be held responsible for consequential damages, including but not limited to systems problems, inability to use the system, loss of electronic information etc.

N.B.

- All the Bidders are required to submit the Process Compliance Statement (Annexure II) duly signed to E- Procurement Technologies Ltd,

- **All the bidders are requested to ensure that they have a valid digital signature certificate well in advance to participate in the online event.**

PROCESS COMPLIANCE STATEMENT (ANNEXURE II)

(The bidders are required to print this on their company's letter head and sign, stamp before emailing)

To,
E- Procurement Technologies Ltd,
B-704 Wall Street –II,,
Opp. Orient Club,
Nr. Gujarat College
Ahmedabad- 380 006.
Tel: 079-40270506/07940016800
Email: sujith@eptl.in

AGREEMENT TO THE PROCESS RELATED TERMS AND CONDITIONS FOR THE ONLINE E-TENDERING FOR PROPOSED ELECTRICAL WORKS FOR **SBI Thane Collectorate Branch, Thane (West)**.

Dear Sir,

This has reference to the Terms & Conditions for the E-tendering mentioned in the Tender document
This letter is to confirm that:

1) The undersigned is authorized representative of the company.

2) We have studied the Commercial Terms and the Business rules governing the E-tendering as mentioned in RFP of SBIIMS Pvt. Ltd. as well as this document and confirm our agreement to them.

3) We also confirm that we have taken the training on the E-tendering tool and have understood the functionality of the same thoroughly.

4) We confirm that SBIIMS Pvt. Ltd. and M/s. E-tendering Technologies Ltd. Limited shall not be liable & responsible in any manner whatsoever for my/our failure to access & bid on the e-E-tendering platform due to loss of internet connectivity, electricity failure, virus attack, problems with the PC, any other unforeseen circumstances etc. before or during the E-tendering event.
5) We confirm that we have a valid digital signature certificate issued by a valid Certifying Authority.
6) We, hereby confirm that we will honor the Bids placed by us during the E-tendering process.

With regards,
Date:

Signature with company seal

Name:

Company / Organization:

Designation within Company / Organization:

Address of Company / Organization:

Scan it and send to this Document on ----------

ARTICLES OF AGREEMENT

(On non-judicial Stamp Paper of Rs. 500/- or as per latest Govt. Rules)

ARTICLES OF AGREEMENT made the _____ date of _____ between SBIIMS PVT.LTD., on behalf of SBI, having its office at Mumbai hereinafter called "the Service Provider" of the One Part and _____

_____

WHEREAS the SBIIMS PVT.LTD. is desirous of _____

_____and has caused drawings and specifications describing the work to be done to be prepared by **M/s. Srujan Interiors and Architects Pvt. Ltd., Navi Mumbai,** its Architects.

AND WHEREAS the said Drawings numbered _____ to_____ inclusive, the Specifications and the Schedule of Quantities have been signed by or on behalf of the parties hereto.

AND WHEREAS the Contractor has agreed to execute upon and subject to the Conditions set forth herein and to the Conditions set forth herein in the Special Conditions and in the Schedule of Quantities and Conditions of Contract (all of which are collectively hereinafter referred to as "the said conditions") the works shown upon the said Drawings and / or described in the said Specifications and included in the Schedule of Quantities at the respective rates therein set forth amounting to the sum as therein arrived at our such other sum as shall become payable there under (hereinafter referred to as "the said Contract Amount.)

NOW IT IS HEREBY AGREED AS FOLLOWS:

1) In consideration of the said Contract Amount to be paid at the times and in the manner set forth in the said Conditions, the Contractor shall upon and subject to the said Conditions execute and complete the work shown upon the said Drawings and described in the said Specifications and the priced Schedule of Quantities.

2) The Employer shall pay to the Contractor the said Contract Amount, or such other sum as shall become payable, at the times and in the manner specified in the said Conditions.

3) The term "the Architects" in the said Conditions shall mean the said **M/s. Srujan Interiors and Architects Pvt. Ltd., Navi Mumbai,** or in the event of their ceasing to be the Architects for the purpose of this Contract for whatever reason, such other person or persons as shall be nominated for that purpose by the Employer, not being a person to whom the Contractor shall object for reasons considered to be sufficient by the Employer, PROVIDED ALWAYS that no person or persons subsequently appointed to be Architects under this Contract shall be entitled to disregard or overrule any previous decisions or approval or direction given or expressed in writing by the outgoing Architects for the time being.

4) The said Conditions and Appendix thereto shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by submit themselves to the said Conditions and perform the Agreements on their part respectively in the said Conditions contained.

5) The Plans, Agreements and Documents mentioned herein shall form the basis of this Contract.

6) This Contract is neither a fixed lump-sum contract nor a piece work contract but a contract to carry out the work in respect of the entire building complex to be paid for according to actual measured quantities at the rates contained in the Schedule of Quantities and Rates or as provided in the said Conditions.

7) The Contractor shall afford every reasonable facility for the carrying out of all works relating to civil works, installation of lifts, Telephone, electrical installations, fittings air-conditioning and other ancillary works in the manner laid down in the said Conditions, and shall make good any damages done to walls, floors, etc. after the completion of his work.
8) The SBIIMS Pvt. Ltd. reserves to itself the right of altering the drawings and nature of the work by adding to or omitting any items of work or having portions of the same carried out without prejudice to this Contract.
9) Time shall be considered as the essence of this Contract and the Contractor hereby agrees to commence the work soon after the Site is handed over to him or from 14th day after the date of issue of formal work order as provided for in the said Conditions whichever is later and to complete the entire work within **3(Three) Months** subject to nevertheless the provisions for extension of time.

10) All payments by the SBI under this Contract will be made only at Mumbai.

11) All disputes arising out of or in any way connected with this Agreement shall be deemed to have arisen at Mumbai and only the Courts in Mumbai shall have jurisdiction to determine the same.

12) That the several parts of this Contract have been read by the Contractor and fully understood by the Contractor.

IN WITNESS WHEREOF THE SBIIMS PVT. LTD. and the Contractor have set their respective hands to these presents and two duplicates hereof the day and year first hereinabove written.

SIGNATURE CLAUSE

SIGNED AND DELIVERED by the

_____ By the
(Employer)

hand of Shri _____

_____ (Signature of Employer)
(Name and Designation)

In the presence of :

1) Shri / Smt. _____ (Signature of Witness)

Address _____

_____
(Witness)

SIGNED AND DELIVERED by the

_____ by the
(Contractor) (Signature of Contractors)

in the presence of :

Shri / Smt. _____ (Signature of Witness)

Address _____

_____(Witness)

SECTION – 1

INSTRUCTIONS TO THE TENDERERS

1.0 Scope of work

Sealed Tenders are invited by **M/s. Srujan Interiors and Architects Pvt. Ltd., Navi Mumbai,** for & on behalf of SBIIMS PVT.LTD. for **PROPOSED ELECTRICAL WORKS For SBI Thane Collectorate Branch, Thane (W).** The proposed work is to be carried out on site at Thane **(W)**

2.0 Tender documents

2.1 The work has to be carried out strictly according to the conditions stipulated in the tender consisting of the following documents and the most workmen like manner.

Instructions to tenderers

General conditions of Contract

Special conditions of Contract

Additional specifications

Drawings

Priced Bid A

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) Additional Specifications

c) Technical specifications

d) Drawings

e) Special conditions of contract

f) General conditions of contract

g) Instructions to Tenderers

2.3 Complete set of tender documents including relative drawings can be downloaded from the website ***www.sbi.co.in***

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 that 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 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.

4.0 **Earnest Money**

4.1 The tenderers are requested to submit the Earnest Money of **Rs. 18,000/- (Rs. Eighteen thousand only) by means of Demand Draft / Pay Order** from any scheduled Nationalized Bank drawn **in favour of SBI Infra Management Solutions Pvt. Ltd. and payable in Mumbai.**

4.2 EMD in any other form other than as specified above will not be accepted. Tender not accompanied by the EMD in accordance with clause 4.1 above shall be rejected.

4.3 No interest will be paid on the EMD.

4.4 EMD of unsuccessful tenderer will be refunded within 30 days of award of Contract.

4.5 EMD of successful tenderer will be retained as a part of security deposit.

5.0 **Initial/ Security Deposit**

The successful tenderer will have to submit a sum equivalent to 2% of accepted tender value less EMD by means of DD drawn in favour of SBIIMS Pvt. Ltd. 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 (ISD) 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 Security Deposit (TSD) including ISD reaches to 5% of contract value. The 50% of the Total Security Deposit shall be paid to the contract 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 **Additional Security Deposit**
In case L-1 bidder quotes abnormally low rates (i.e. 10% or more, below estimated project cost), the bank may ask such bidder to deposit additional security deposit (ASD) equivalent to difference of estimated cost vis-à-vis L-1 quoted amount for due fulfillment of contract. Such ASD could be in the form of FDR / Bank's guarantee in the Bank's name as per format approved by the Bank. On successful completion of work ASD will be returned to the contractor. In case contractor fails to complete the work in time or as per tender specification or leave the job incomplete, the bank will be at liberty to recover the dues from ASD or to forfeit such ASD as the case may be within its sole discretion.

6.3 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 30 days from the receipt of intimation of acceptance of the tender by the Bank. However, the written acceptance of the tenders 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 respect accordance with the terms of contract within a period of **3(Three) Months** from the date of award of work.

9.0 **Validity of tender**

Tenders shall remain valid and open for acceptance for a period of 90 days from the date of opening price bid. If the tenderer withdraws his/her offer during the value period or makes modifications in his/her original offer which are not acceptable to Bank without prejudice to any other right or remedy the Bank shall be at liberty forfeit the EMD.

10.0 **Liquidated Damages**

The liquidated damages in case of breach of any terms of this RFP & delay in completion of the work within stipulated time shall be 0.50% per week subject to a maximum of 5% of contract value. In the event of liquidated damages exceeding the cap of 5% the award of contract shall be cancelled.

11.0 **Rate 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 figure. In case of discrepancy between the rate quoted in words and figures, the unit rate quantity 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/ SBIIMS Pvt. Ltd.

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 (except GST), levies.

11.1.7 The SBIIMS Pvt. Ltd. reserve their rights to accept any tenders, either in whole or in part or may entrust the work in phases or may drop the part scope of work at any stage of the project within its sole discretion without assigning any reason(s) for doing so and no claim / correspondence shall be entertained in this regard.

11.1.8 In case it is decided by the SBIIMS Pvt. Ltd. to drop one or more item from the scope of work at any stage of the project, the contractor shall not be entitled to raise any claim / compensation for such deleted scope of work. Also, the SBIIMS Pvt. Ltd. may consider issuing work order for various buildings in phases but within a reasonable time interval and the contractor shall be bound to execute the same within the stipulated time period and as per rates quoted by them in this tender without any claim for price escalation.

SIGNATURE OF THE CONTRACTOR

WITH SEAL

GENERAL CONDITIONS OF CONTRACT

1.0 **Definitions**: -
"Contract means the documents forming the tender and the acceptance thereof and the formal agreement executed between SBI Infra Management Solutions Pvt. Ltd. (client) and the contractor, together with the documents referred there in 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 'SBIIMS' shall mean SBI Infra Management Solutions Pvt. Ltd. (Service Provider) having its Head Office, Ground Floor, Raheja Chambers, Free Press Marg, Nariman Point, Mumbai- 400 021 and includes the client's representatives, successors and assigns.

1.1.2 'Architects/ Consultants' shall mean **M/s. Srujan Interiors and Architects Pvt. Ltd., Navi Mumbai,**.

1.1.3 'Site Engineer' shall mean an Engineer appointed by the SBIIMS at site as their representative for day-to-day supervision of work and to give instructions to the contractors.

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

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

1.1.5 'Engineer' shall mean the representative of the Architect/consultant.

1.1.6 '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 value of the entire work as stipulated in the letter of acceptance of tender subject such additions there to or deductions there from as may be made under the provide herein after contained.

1.1.7 Specifications' shall mean the specifications referred to in the tender and modifications thereof as may time to time be furnished or approved by the Architect/ Consultant.

1.1.8 "Month" means calendar month.

1.1.9 "Week" means seven consecutive days.

1 .1.10 "Day" means a calendar day beginning and ending at 00 Hrs and 24 Hrs respectively.

1.1.11 "SBIIMS's Engineer" shall mean The Civil / Electrical Engineer in - charge of the Project, as nominated by the M.D.& CEO, SBI Infra Management Solutions Pvt. Ltd.

1.1.12 The following shall constitute the Joint Project Committee (herein under referred to as JPC) for assessing and reviewing the progress of the work on the project and to issue instructions or directions from time to time for being observed and followed by the Architects Site Engineer /PMC and other consultants / contractors engaged in the execution of the project.

i) Vice President – Circle Head of SBIIMS Pvt. Ltd.

ii) SBIIMS Engineer (Civil and Electrical) in-charge of the Project, as may be nominated by the M.D. & CEO, SBI Infra Management Solutions Pvt. Ltd.....Members.

iii) Concerned partner of the Architects and their Resident Architect…. Member.

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 of **Rs. 18,000/- (Rs. Eighteen thousand only)** in the form of Demand draft or bankers cheque drawn in favour of SBIIMS PVT. LTD., 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 the period when he is required to keep his tender open acceptance by the SBIIMS Pvt. Ltd. or after it is accepted by the SBIIMS Pvt. Ltd. the contractor fails to enter into a formal agreement or fails to pay the initial security deposit as stipulated or fails to commence the 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 in the form of DD/FDR drawn on any scheduled Bank and shall be deposited within 15 days from the date of acceptance of tender.

ADDITIONAL SECURITY DEPOSIT / PERFORMANCE GUARANTEE

In case L-1 bidder quotes abnormally low rates (i.e. 10% or more, below estimated project cost), the bank may ask such bidder to deposit additional security deposit (ASD) equivalent to difference of estimated cost vis-à-vis L-1 quoted amount for due fulfillment of contract as performance guarantee. Such ASD could be in the form of FDR / Bank's guarantee in the Bank's name as per format approved by the Bank. On successful completion of work ASD will be returned to the contractor. In case contractor fails to complete the work in time or as per tender specification or leave the job incomplete, the bank will be at liberty to recover the dues from ASD or to forfeit such ASD as the case may be within its sole discretion.

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

c) **Retention Money: -**

Besides the SD 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. ISD plus EMD plus Retention Money shall both together not exceed 5% of the contract value.The50% of the total security deposit shall be refunded to the contractor without any interest on issue of Virtual Completion certificate by the Architect/consultant. 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.

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 former shall be adopted:

a) In case of difference between rates written in figures and words, the rate in words shall prevail.
b) Between the duplicate / subsequent copies of the tender, the original tender shall be taken as correct.

4.0 **Scope of Work:**

The contractor shall carryout complete and maintain the said work in every respect strictly in accordance with this contract and with the directions of and to the satisfaction Bank to be communicated through the architect/consultant. The architect/consultant at the directions of the SBIIMS from time to time issue further drawings and / or write instructions, details directions and explanations which are here after collectively references to as Architect's /consultant's instructions in regard to the variation or modification of the design, quality or quantity of any work or the addition or omission or substitution work. Any discrepancy in the drawings or between BOQ and/ or drawings and/ or specifications. The removal from the site of any material brought thereon by the Contractor and any substitution of any other materials therefore the removal and / or re-executed of any work executed by him. The dismissal from the work of any person engaged thereupon.

5.0 i) **Letter of Acceptance:**
Within the validity period of the tender the SBIIMS shall issue a letter of acceptance directly or through the architect by registered post or otherwise depositing at the 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 bind contract between the SBIIMS and the contractor.

ii) **Contract Agreement:**

On receipt of intimation of the acceptance of tender from the SBIIMS Pvt. Ltd/ Architect the successful tenderer shall be bound to implement the contract and within fifteen days there of 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 SBIIMS Pvt. Ltd SBI through its Architect / consultants are the properties of the SBIIMS Pvt. Ltd. They are not to be used on other work.

7.0 **Detailed drawings and instructions:**
The SBIIMS Pvt. Ltd. through its architects / consultants shall furnish with reasonable proper additional instructions by means of drawings or otherwise necessary for the execution of the work. All such drawings and instructions shall be consistent with contract documents, true developments thereof and reasonably inferable there.

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 SBIIMS Pvt. Ltd. through the architect/consultant

7.0 **Copies of agreement**

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

8.0 **Liquidated damages:**

If the contractor fails to maintain the required progress in terms of clause 6. 0 of GOC 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 SBIIMS Pvt. Ltd. on account of such breach to pay a liquidated damages at the rate of 0.50% of the contract value which subject to a maximum of 5% of the contract value.

9.0 **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 SBIIMS Pvt. Ltd. /Architect/ consultant he shall be removed from the site immediately.

10.0 **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, and ordinances rules, applicable to the contract. If the contractor observes any discrepancy between the drawings and specifications, he shall promptly notify the SBIIMS Pvt. Ltd. in writing under intimation of the Architect/ Consultant. If the contractor performs any act, which is against the law, rules and regulations he shall meet all the costs arising there from and shall indemnify the SBIIMS Pvt. Ltd. any legal actions arising there from.

11.0 **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 architect / consultant 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 architect / consultant the contractor shall be responsible for the same ad shall his own expenses rectify such error, if so, required to satisfaction of the SBIIMS Pvt. Ltd.

12.0 **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, except due to causes beyond his control and due to his fault or negligence.

He shall take adequate care and steps for protection of the adjacent properties. The contractor shall take all precautions for safety and protections of his employees on the works and shall comply with all applicable provisions of Govt. and local bodies' safety laws and building codes to prevent accidents, or injuries to persons or property on 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 be taken in joint names of the contractor and the SBIIMS Pvt. Ltd. and the original policy may be lodged with the SBIIMS Pvt. Ltd.

13.0 **Inspection of work:**

The SBIIMS Pvt. Ltd. / Architect / Consultant or their representatives shall at all reasonable times 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 SBIIMS Pvt. Ltd./Architect/consultant and their representatives necessary for inspection and examination and test of the materials and workmanship. No person unless authorized by the SBIIMS Pvt. Ltd./ Architect /Consultant except the representative of Public authorities shall be allowed on the work at any time. The proposed work either during its construction stage or its completion can also be inspected by the Chief Technical Examiner's Organization a wing of Central Vigilance commission.

14.0 **Assignment and subletting**

The whole of work included in the contract shall be executed the contractor and he shall not directly entrust and engage or indirectly transfer, assign or underlet the contract or any part or share there of or interest therein without the written consent of the SBIIMS Pvt. Ltd. through the Architect and no undertaking shall relieve the contractor from the responsibility of the contractor from active & superintendence of the work during its progress.

15.0 **Quality of materials, workmanship & Test**

All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Architect/consultant instructions and shall be subject from time to time to such tests as the architect/consultant 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, labor, and materials as are normally required for examining measuring sampling and testing any material or part of work before incorporation in the work for testing as may be selected and required by the architect/consultant.

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 Architect/consultant. Before submitting the sample / literature the contractor shall satisfy himself that the material / equipment for which he is submitting the sample / literature meet with the requirement of tender specification. Only when the samples are approved in writing by the architect / consultant the contractor shall proceed with the procurement and installation of the particular material / equipment. The approved samples shall by the signed by the Architect / Consultant for identification and shall be kept on record at site office until the completion of the work for inspection / comparison at any time. The Architect/Consultant 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 / equipment etc. shall be to the account of the contractor.

iii) **Cost of tests**

The cost of making any test shall be borne by the contractor if such test is intended by or provided for in the specification or BOQ.

iv) **Costs of tests not provided for**

If any test is ordered by the Architect/ Consultant which is either

a) If so intended by or provided for or (in the cases above mentioned) is not so particularized, or though so intended or provided for but ordered by the Architect / Consultant 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.

16.0 **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.

17.0 **Contractor's superintendence**

The contractor shall give necessary personal superintendence during the execution the works and as long, thereafter, as the Architect / Consultant may consider necessary until the expiry of the defects liability period, stated here to.

18.0 **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. The entire amount paid under Clause 19, 20 hereof as well as amounts of prime cost and provision sums, if any, shall be excluded.

19.0 **Works to be measured**

The Architect/Consultant may from time to time intimate to the contractor that he require the work to be measured and the contractor shall forthwith attend or send a quantity representative to assist the Architect 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 detail in the specifications. The representative of the Architect / Consultant shall take measurements with the contractor's representative and the measurements shall be entered in the measurement book. 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 the measurements recorded by the representative of the Architect / consultant shall be final. All authorized extra work, omissions and all variations made shall be included such measurement.

20.0 **Variations**

No alteration, omission or variation ordered in writing by the Architect / consultant vitiates the contract. In case the SBIIMS Pvt. Ltd. / Architect / Consultant thinks proper at any 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 Architect / Consultant shall give notice thereof in writing to the contractor shall confirm in writing within seven days of giving such oral instructions the contract shall alter to, add to, or omit from as the case may be in accordance with such but the contractor shall not do any work extra to or make any alterations 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 Architect/ Consultant and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Architect / Consultant and the same shall be added to or deducted from the contract value, as the case may be.

21.0 **Valuation of Variations**

No claim for an extra shall be allowed unless it shall have been executed under the authority of the Architect / Consultant with the concurrence of the SBIIMS Pvt. Ltd. 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 Architect/ consultant 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 Architect/ consultant 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 Architect/Consultant) the workman's name and materials employed be delivered for verifications to the Architect /consultant 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.

22.0 **Final measurement**

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

23.0 **Post Completion requirements** & **Virtual Completion Certificate (VCC)**

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

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, structure 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 SBIIMS Pvt. Ltd. not incorporated in the permanent works.

c) Remove all rubbish, debris etc. from the site and the land allotted to the contractor the SBIIMS Pvt. Ltd. and shall clear, level and dress, compact the site as required by the SBIIMS Pvt. Ltd.

d) Shall put the SBIIMS Pvt. Ltd. in undisputed custody and possession of the site and all land allot by the SBIIMS Pvt. Ltd.

e) Shall hand over the work in a peaceful manner to the SBIIMS Pvt. Ltd.

f) All defects / imperfections have been attended and rectified as pointed out by the Architects to the full satisfaction of SBIIMS Pvt. Ltd.

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

This issuance of a VCC shall not be without prejudice to the SBIIMS's rights and contractor liabilities under the contract including the contractor's liability for defects liability nor shall the issuance of VCC in respect of the works or work at any site be construction as a waiver of any right or claim of the SBIIMS Pvt. Ltd. against the contractor in respect of or work at the site and in respect of which the VCC has been issued.

24.0 **Work by other agencies**

The SBIIMS Pvt. Ltd. / Architect / consultant reserves the rights to use premises and any portion the site for execution of any work not included in the scope of this contract with 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 manner as not to impede the progress of the works included in the contract.

25.0 **Insurance of works**

25.1 Without limiting his obligations and responsibilities under the contract the contractor shall insure in the joint names of the SBIIMS Pvt. Ltd. and the contractor against all loss of 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 SBIIMS Pvt. Ltd. and contractor are covered for the period stipulated I clause of GCC and are also covered during the period of maintenance for loss or damage arising from a cause, occurring prior to the commencement of the period of maintenance and 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 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 SBIIMS Pvt. Ltd. which approval shall not be unreasonably withheld and the contractor shall whenever required produce to the Architect / consultant the policy if insurance and the receipts for payment of the current premiums.

25.2 **Indemnification against 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 SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. their agents, employees or other contractors not being employed by the contractor or for 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 SBIIMS Pvt. Ltd., their employees, or agents or other employees, or agents or other contractors for the damage or injury.

25.3 **Contractor to indemnify SBIIMS Pvt. Ltd**.

The contractor shall indemnify the SBIIMS Pvt. Ltd. against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision sub-clause 25.2 of this clause.

25.4 **Contractor's superintendence**

The contractor shall fully indemnify and keep indemnified the SBIIMS Pvt. Ltd. against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent r 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 SBIIMS Pvt. Ltd. in respect of such matters as aforesaid 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 SBIIMS Pvt. Ltd. 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 Architect / consultant in this behalf.

25.5 **Third Party Insurance**

25.5.1 Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under clause 24.0 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 SBIIMS Pvt. Ltd., or to any person, including any employee of the SBIIMS Pvt. Ltd., 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 24.0 thereof.

25.5.2 **Minimum amount of Third Party Insurance**
Such insurance shall be affected with an insurer and in terms approved by the SBIIMS Pvt. Ltd. which approval shall not be reasonably withheld and for at least the amount stated below. The contractor shall, whenever required, produce to the. Architect / consultant the policy or policies of insurance cover and receipts for payment of the current premiums.

25.6 The minimum insurance cover for physical property, injury, and death is Rs.5 Lakh 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.

25.7 **Accident or Injury to workman:**

25.7.1 The SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. or their agents, or employees. The contractor shall indemnify and keep indemnified SBIIMS Pvt. Ltd. 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.

25.7.2 **Insurance against accidents etc. to workmen**

The contractor shall insure against such liability with an insurer approved by the SBIIMS Pvt. Ltd. during the whole of the time that any persons are employed by him on the works and shall, when required, produce to the architect / consultant 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 insured 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 SBIIMS Pvt. Ltd. is indemnified under the policy but the contractor shall require such sub-contractor to produce to the Architect /consultant when such policy of insurance and the receipt for the payment of the current premium.

25.7.3 **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 SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. as aforesaid from any amount due or whichmay become due to the contractor, or recover the same as debt from the contractor.

25.7.4 Without prejudice to the others rights of the SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. 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.

26.0 **Commencement of Works:**

The date of commencement of the work will be reckoned as the date, fifteen days from the date of award of letter by the SBIIMS Pvt. Ltd.

27.0 **Time for completion**

Time is essence of the contract and shall be strictly observed by the contractor. The entire work shall be completed within a period of **3 calendar months** from the date of commencement. If required in the contract or as directed by the Architect / consultant. 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.

28.0 **Extension of time**

If, in the opinion of the Architect/consultant, the work be delayed for reasons beyond the control of the contractor, the Architect/consultant may submit a recommendation to the SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. through the Architect' Consultant in writing at least 30 Days before the expiry of the scheduled time and while applying for extension of time he shall furnish the reason in detail and his justification if an', for the delays. The architect/consultant shall submit their recommendations to the SBIIMS Pvt. Ltd. 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 provision of liquidated damages as stated under clause 10.0 shall become applicable. Further the contract shall remain in force even for the period beyond the due date of completion irrespective whether the extension is granted or not.

29.0 **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 Architect / consultant should the rate of progress of the work or any part thereof be at any time be in the opinion the. Architect / consultant too Slow to ensure the completion of the whole of the work the prescribed time or extended time for completion the Architect / consultant shall thereupon take such steps as considered necessary by the Architect / consultant to expedite progress so as to complete the works by the prescribed time or extended time. Such communications from the Architect / consultant 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.

30.0 **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 Architect / consultant, 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 Architect / consultant. However the provisions 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 Architect / consultant at no extra cost to the SBIIMS Pvt. Ltd..

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

31.0 **No compensation or restrictions of work**

If at any time after acceptance of the tender SBIIMS Pvt. Ltd. shall decide to abandon or reduce the scope of work for any reason whatsoever and hence not required the whole or any part of the work to be carried out. The Architect / consultant shall give notice in writing o 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 what so ever 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 Architect / Consultant 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 SBIIMS Pvt. Ltd. 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 Architect / consultant shall be final.

32.0 **Suspension of work**

i) The contractor shall, on receipt of the order in writing of the Architect / consultant (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 Architect /consultant may consider necessary so as not to 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 the contractor, or

c) For safety of the works or part thereof.

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

i) 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.

33 **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 Architect / consultant shall have the power to adopt any of the following course as they may deem best suited to the interest of the SBIIMS Pvt. Ltd.:

a) To rescind the contract (of which rescission notice in writing to the contractor by - Architect / consultant shall be conclusive evidence) and in which case the security, deposit of the contractor shall be forfeited and be absolutely at the disposal of SBIIMS Pvt. Ltd..

b) To employ labour paid by the SBIIMS Pvt. Ltd. and to supply materials to carry out the work, or part of the work, debiting the contractor with the cost of the labour and materials cost of such labour and materials as worked out by the Architect/consultant shall 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 certificate of architect /consultant as to the value of work done shall be final conclusive against the contractor.

c) To measure up the work of the contractor, and to take such part thereof as shall 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 (The amount of which excess the certificates in writing of the Architects / consultant shall final and conclusive) shall be borne by original contractor and may be deducted f any money due to him by SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. 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 rescind 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 Architect / consultant 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.

34.0 **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 Govt. 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 Architect / Consultant that he is able to carry out and fulfill the contract, and to dye security therefore if so required by the Architect / Consultant.

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 SBIIMS Pvt. Ltd. through the Architect/Consultant 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 SBIIMS Pvt. Ltd. through the Architect / consultant 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 SBIIMS Pvt. Ltd. through the Architect / Consultant that the said materials were condemned and rejected by the Architect/consultant 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 contactor 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 SBIIMS Pvt. Ltd. or Architect's / consultant's instructions to the contrary subject any part of the contract. Then and in any of said cases the SBIIMS Pvt. Ltd. and or the Architect / consultant, 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 SBIIMS Pvt. Ltd. or the Architect / consultant 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 determined and as if the works subsequently had been executed by or on behalf of the contractor. And, further the SBIIMS Pvt. Ltd. through the Architect / consultant their agents or employees may enter upon and take possession of the work and all plants, took 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 the work and the contractor shall not in any was interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for complement and finishing or using the materials and plant for the works.

When the works shall be completed or as soon thereafter as convenient the SBIIMS Pvt. Ltd. or architect / consultant 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 receive thereof by him the SBIIMS Pvt. Ltd. sell the same by publication, and 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 SBIIMS Pvt. Ltd. incidental to the sale of the materials etc.

35.0 Certificate of payment

The contractor shall be entitled under the certificates to be issued by the Architect / consultant to the contractor within 10 working days from the date of certificate to payment from SBIIMS Pvt. Ltd. from time to time. The SBIIMS Pvt. Ltd. shall recover the statutory recovering other dues including the retention amount from the certificate of payment.

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

The Architect / consultant shall have power to withhold the certificate if the work orin part thereof is not carried out to their satisfaction.

The Architect / consultant may by any certificate make any corrections required previous certificate.

The SBIIMS Pvt. Ltd. shall modify the certificate of payment as issued by the architect / consultant from time to time while making the payment

The contractor shall submit interim bills only after taking actual measurements and properly recorded in the M books

The Contractor shall not submit interim bills when the approximate value of work done by him is less than **Rs. 5.0 Lakh**.

The final bill may be submitted by contractor within a period of one month from the date of virtual completion and Architect / consultant shall issue the certificate of payment within a period of two months. The SBIIMS Pvt. Ltd. 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.

36.0 **A. Settlement of Disputes and Arbitration**

Except where otherwise provided in the contract all questions and disputes to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or 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 M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office, Raheja Chambers, Free Press Journal Marg, Mumbai 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 SBIIMS Pvt. Ltd 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 M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office 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 M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office in writing in the manner and within the time aforesaid.

B. Settlement of Disputes and Arbitration

The M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office shall give his decision in writing on the claims notified by the receipt of the contractor may within 30 days of the receipt of the decision of the M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office/ Submit his claims to the conciliating authority namely the M.D.& C.E.O. SBIIMS Pvt. Ltd., Head Office, Raheja Chambers, Free Press Journal Marg, Mumbai. For conciliation along with all details and copies of correspondence exchanged between him and the SBIIMS Pvt. Ltd.

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 M.D. & C.E.O. of the SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd shall be referred for adjudication through arbitration by the Sole Arbitrator appointed by the M.D. & C.E.O. and who will be of Deputy General Manager rank. It will also be no objection to any such appointment that the Arbitrator so appointed is a SBIIMS Pvt. Ltd., Officer and that he had to deal with the matters to which the Contract relates in the course of his duties as SBIIMS Pvt. Ltd., Officer. 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 M.D. & C.E.O. of the SBIIMS Pvt. Ltd. Such person shall be entitled to proceed with the reference from the stage at which it was let 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 as 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 or any accordance modification or reenactment thereof and the rules made there under.

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. However, no fees will be payable to the arbitrator if he is a SBIIMS Pvt. Ltd. Officer.

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 arbitrators 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 din what manner, such costs or any part thereof, shall be paid and fix or settle the amount of costs to be so paid.

37.0 **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 condition.

i) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the Architect / consultant's.

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
Architect / consultant is unsatisfactory.

iii) In case contractor is permitted to use SBIIMS's source of water i.e. Municipal connection, Bore well (existing or new) etc., the SBIIMS Pvt. Ltd may consider recovering @1% of contract amount form the final bill of contractor.

37.1 The contractor shall construct temporary well / tube well in SBIIMS Pvt. Ltd land for taking water for construction purposes only after obtaining permission in writing from the SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. without any compensation as directed by the architect / consultant.

38.0 **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, by 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.

39.0 **Treasure trove etc.**

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

40.0 **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 Architect / consultant shall be final and binding on the corrector.

41.0 **Maintenance of registers**

The contractor shall maintain the following registers as per the enclosed perform at site of work and should produce the same for inspection of SBIIMS Pvt. Ltd/Architect / consultant whenever desired by them. The contractor shall also maintain the records / registers as required by the local authorities / Govt. 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

42.0 **Force Majeure**

42.1 Neither contractor nor SBIIMS Pvt. Ltd. shall be considered in default in performance of the obligations if such performance is prevented or delayed by events such as but not war, hostilities revolution, riots, civil commotion, strikes, lockout, conflagrations, epidemics, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of or for any other cause beyond the reasonable control of the party affected or prevents 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.

42.2 As soon as the cause of force majeure has been removed the party whose ability 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.

42.3 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 caused itself and inability resulting there from having been removed, the agreed time completion of the respective obligations under this agreement shall stand extended a period equal to the period of delay occasioned by such events.

42.4 Should one or both parties be prevented from fulfilling the contractual obligations by state of force majeure lasting to a period of 6 months or wore the two parties, shall each other to decide regarding the future execution of this agreement.

43.0 **Local laws, Acts Regulations:**

The contractor shall strictly adhere to all prevailing labour laws inclusive at contract labour (regulation and abolition act of 1970) and other safety regulations. The contractors should comply with the provision of all labour legislation including the latest requirements of 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 1 963 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.
xi) Prevailing Indian Electricity rules & act.

44.0 **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 architect / consultant. The contractor shall also such report immediately to the competent authority whenever such report is required to be lodged by the law and take appropriate actions thereof.

SPECIAL CONDITION OF CONTRACT

Scope of work

1.0 The scope of work is to carry out for the PROPOSED ELECTRICAL WORKS
For SBI Thane Collectorate Branch, Thane (W)

2.0 **Address of site**

The site is located at SBI's Local Head Office, at Bandra-Kurla Complex, Bandra (E), Mumbai

3.0 **Dimensions and levels**

All dimensions and levels shown on the drawings shall be verified by the contractor and 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 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 Architect / consultant before proceeding with the work.

04 **Notice of operation**

The contractor shall not carry out any important operation without the Consent in with from the Architect / consultant:

5.0 **Construction records**

The contractor shall keep and provide to the Architect / consultant 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 construction.

6.0 **Safety of adjacent structures and trees**

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

7.0 **Temporary works.**

Before any temporary works are commenced the contractor shall submit at least in advance to the architect / consultant 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 architect / consultant 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 **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 SBIIMS Pvt. Ltd. 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 SBIIMS Pvt. Ltd. shall be entitled to take power and water connections from the temporary water and power supply obtained by the 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 contactor and charges payable for permanent connections, if any, shall be initially paid by the contactor and the SBIIMS Pvt. Ltd. will reimburse the amount on production of receipts

d) The SBIIMS Pvt. Ltd. as well as the Architect / consultant shall give all possible assistance to the Contractor's to obtain the requisitePermission from the various authorities, but the responsibility for obtaining the same in time shall be of the contractor

9.0 **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.

10.0 **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.

11.0 **Firefighting arrangements**

i) The contractor shall provide suitable arrangement for firefighting at his own cost. 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 equipment shall be provided at suitable prominent and easily accessible place 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 contractors make the following arrangements at his own cost but not limited 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 equipments.
d) Type, number and location of containers for the removal of surplus materials and rubbish.
e) Type, size, number and location of fire extinguishers or other tire fighting equipment.
f) General house keeping

12.0 **Site order book**

A site order book shall be maintained at site for the purpose of quick communication between the Architect / Consultant. Any communication relating to the work may be conveyed through records in the site order book. 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 carefully maintained and preserved by the contractor and shall be made available to the architect / consultant as and when demanded- Any instruction which the architect /consultant may like to issue to the contractor or the contractor may like to bring to the architect / consultant 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.

13.0 **Temporary fencing/ barricading**

The contractor shall provide and maintain a suitable temporary fencing / barricading and gates 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 architect I consultant 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.

14.0 **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 he held if required by the architect/ consultant. -

15.0 **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 architect / consultant 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.

16.0 **Contractor to verify site measurement**

The contractor shall check and verify all site measurements whenever requested other specialists contractors or other sub-contractors to enable them to prepare the own shop drawing and pass on the information with sufficient promptness as will in any way delay the works.

17.0 **Displaying the name of the work**

The contractor shall put up a name board of suitable size as directed by the architect/ consultant indicating there in the name of the project and other details as given by the architect/consultant at his own cost and remove the same on completion of work.

18.0 **As built drawings**

i) For the drawings issued to the contractor by the Architect / Consultant. The architect Consultant will issue two sets of drawings to the Contractor for the items for some changes have been made. From the approved drawings as instructed by the SBIIMS Pvt. Ltd. / Architect / Consultant. The

contractor will make the changes made on these copies and return these copies to the architect / Consultant for their approval. In cases revision is required or the corrections are not properly marked the architect / Consultant will point out the discrepancies to the contractor. The contractor will have to incorporated these corrections and / or attend to discrepancies either on copies as directed by the architect / consultant and resubmit to him for approval. The architect / consultant 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 wherever the changes made by the SBIIMS Pvt. Ltd. / Architect/ consultant. And submit two copies of such modified drawings to the architect/ consultant for approval. The architect/ consultant will return one copy of the approved drawing to the contractor.

19.0 Approved make

The contractor shall provide all materials from the list of approved makes at his own cost and also appoint the specialized agency for the waterproofing anti-termite, aluminum doors and windows and any other item as specified in the tender. The architect/consultant may approve any make / agency within the approved list as given in the tender after inspection of the sample/mock up.

20.0 **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 contractors account

21.0 **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 contact. All of the aforesaid taxes, duties, levies, fees and charges shall be to the contractor's account and the SBIIMS Pvt. Ltd. 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 statutory law during the currency of contract the same shall be borne by the contractor.

22.0 **Acceptance of tender**

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

23.0 **Photographs:**

- The Contractor shall at his own expense supply to the Architects with duplicate hard copies of large photographs not less than 25 cm. x 20 cm. (10" x 8") of the works, taken from two approved portions of each building, at intervals of not more than one months during the progress of the work or at every important stage of construction.

- In addition to above, the contractor shall be bound to submit adequate no. of site photographs along with their each Running Bill for the project clearing showing major progress of work measured and claimed therein failing which the Architect/ SBIIMS Pvt. Ltd. may consider returning the Bill to the contractor and no claim for delay on this account will be entertained.

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 cases when 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 meters in length. The width between the side rails shall not be less than 30 cm. (clear) and the distance between two adjacent runnings shall not be more than 30 cm. When a ladder is used an extra mazdoor shall be engaged for holding ladder.

5. The excavated material shall not be placed within 1.5 meters of the edge of the trench half of the depth of trench whichever is more. All trenches and excavations 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 railing whose minimum height shall be one meter.

7. No floor, roof or other part of the structure shall be so overloaded with debris or material as to render it unsafe.

8. Workers employed on mixing and handling material such as asphalt, cement, mortar, concrete and lime shall be provided with protective footwear and rubber hand gloves.

9 Those engaged in welding works shall be provided with welders' protective eye shield and gloves.

10. (i) No paint containing lead or lead products shall be used except in the form of paste readymade paint.
(ii) Suitable facemasks should be supplied for use by the workers when the paint 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 be provided to enable the working painters to wash during cessation of work.

12 Hoisting machines and tackle used in the works including their attachments anchor 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 form defects.

APPENDIX HEREINBEFORE REFERRED TO

1)	Name of the organization Offering Contract	:	The Vice President and Circle Head,, SBI Infra Management Solutions Pvt. Ltd, State Bank of India, 3rd Floor, Local Head Office, Synergy Building, Bandra Kurla Complex, Bandra (E), Mumbai- 400 051.
2)	Consultants	:	**M/s. SRUJAN INTERIORS & ARCHITECTS PVT. LTD.** 455/456, 4TH Floor, A WING BALAJI BHUVAN, SECTOR NO. 11, NEAR. CBD STATION, BELAPUR (EAST), NAVI MUMBAI – 400 614 TEL. NO. 022-67210224 E-mail : rafiq@siapl.com
3)	Site Address	:	**SBI Thane Collectorate Branch, Thane (W)**
4)	Scope of Work	:	Proposed ELECTRICAL Works
5)	Name of the Contractor	:	---------- ---------- ----------
6)	Address of the Contractor	:	---------- ---------- ----------
7)	Period of Completion	:	**3(Three)**Months from the dated of Commencement
8)	Earnest Money Deposit	:	**Rs. 13,000/-** (Rs. Thirteen Thousand only) by **means of Demand Draft / Pay Order** from any scheduled Nationalized Bank drawn **in favour of SBI Infra Management Solutions Pvt. Ltd. and payable in Mumbai.**
9)	Retention Money	:	As per clause no. 11(a) of general Conditions
10)	Defects Liability Period	:	Twelve Months from the date of Virtual Completion.
11)	Insurance to be undertaken by the Contractor at his cost	:	125% of Contract Value (Contractor's all risk policy)
12)	Liquidated damages	:	0.5% of the Contract amount shown in the tender per week subject to max. 5% of the contract value or actual final bill value.
13)	Value of Interim Bill (Min.)	:	**Rs. 5.00 Lakhs.**
14)	Date of Commencement	:	15 days from the date of acceptance letter

is issued to the Contractor/ or the day on which the Contractor is instructed to take possession of the site whichever is earlier.

15) Period of Final Measurement : 3 Months from the date of Virtual Completion.

16) Initial Security Deposit : 2% of the Accepted Value of the Tender. (Clause No. 22)

17) Total Security Deposit : As per clause No. 11 a

18) Refund of initial Security Deposit Comprising of EMD and ISD. : 50% of the Security Deposit shall be refunded to the Contractor on completion of the work and balance refunded only after the Defect Liability Period is over.

19) Period for Honoring Certificate : 1. One Month for R.A. Bills
2. The final bill will be submitted by the Contractor within one month of the date fixed for completion work and the Bill shall be Certified within 3 months from the date of receipt of final bill provided the bills are submitted with all pre-requisite documents/test reports etc. prescribed in the tender.

.

_____
Signature of Tenderer.

Date:

LETTER OF DECLARATION

To,
Vice President & Circle Head,
SBI Infra Management Solutions Pvt. Ltd.
SBI, Local Head Office,3rdfloor,C-6,G-Block
Synergy Building,
Bandra- Kurla Complex, Bandra (East),
Mumbai-400 051.

Dear Sir,

PROPOSED ELECTRICAL WORKS FOR SBI Thane Collectorate Branch, Thane (W)

Having examined the terms & conditions, drawings, specifications, design relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto and affecting the quotation, I/We hereby offer to execute the works specified in the said memorandum within the time specified in the said memorandum on the item rate basis mentioned in the attached schedule and in accordance in all respect with the specifications, design, drawings and instructions in writing referred to in conditions of Tender, the articles of agreement, conditions of contract and with such conditions so far as they may be applicable.

MEMORANDUM

(a)	Description of work	**PROPOSED ELECTRICAL WORKS For SBI Thane Collectorate Branch, Thane (W)**
(b)	Earnest Money	**Rs. 18,000/- (Rs. Eighteen thousand only)** by means of Demand Draft / Pay Order from any scheduled Nationalized Bank drawn in favour of SBI Infra Management Solutions Pvt. Ltd. and payable in Mumbai.
(c)	Time allowed for completion of work from the date of issue of work order.	3(Three)months from the date of commencement as per tender.

Should this tender be accepted, I/we hereby agree to abide by and fulfill the terms and provisions of the said conditions of Contract annexed hereto so far as they may be applicable or in default thereof to forfeit and pay to SBIIMS PVT.LTD., the amount mentioned in the said conditions.

I/we have deposited Demand Draft / Banker's Cheque / FDR for a sum of **Rs. 18,000/- (Rs. Eighteen thousand only)** as Earnest money deposit with the SBI Infra Management Solutions Pvt. Ltd. Should I/we do fail to execute the contract when called upon to do so, I/we hereby agree that this sum shall be forfeited by me/us to SBI Infra Management Solutions Pvt. Ltd.

We understand that as per terms of this tender, the SBIIMS Pvt. Ltd. may consider accepting our tender in part or whole or may entrust the work of various buildings proposed (i.e. Institute Building, Staff Qtrs. And Director's Bungalow) in phases. We, therefore, undertake that we shall not raise any claim / compensation in the eventuality of Bank deciding to drop any of the building / buildings from the scope of work of this tender at any stage during the contract period. Further, we also undertake to execute the work entrusted to us in phases on our approved rates and within the stipulated time limit without any extra claim for price escalation as provided for in Clause 11.1.7 and 11.1.8 "Instructions to Tenderers" of this tender.

We, hereby, also undertake that, we will not raise any claim for any escalation in the prices of any of the material during the currency of contract/execution/completion period.

Yours faithfully,

Signature of contractor
With Seal

INDEX

PROFORMAS OF VARIOUS TESTS

TABLE NO.	DESCRIPTION	PAGE NO.
1.	Record of Cement/Received/Used/Balance.	
2.	Proforma of Paint/Lead/CICO Register.	
3.	Bank for Reinforcement Bars Received.	
4.	Proforma for Register of Material of Site Account.	
5.	Proforma for Account of Secured Advance Register.	
6.	Proforma for Bulkage Test of Sand Register.	
7.	Proforma for Silt Test Register.	
8.	Proforma for Sieve Analysis of Fine Aggregate Register.	
9.	Proforma for Sieve Analysis of Coarse Aggregate Register.	
10.	Proforma for Slump Test Register.	
11.	Proforma of Cube Test Register.	
12.	Proforma for Hindrance to Work.	
13.	Proforma for Running A/c. Bill.	
14.	Account of Secured Advance if Admissible on Materials Held at Site by the Contractors	
15.	Memorandum for Payment.	

TABLE-IV

PROFORMA FOR REGISTER OF MATERIAL AT SITE ACCOUNT

Name of Work : Name of Article :

Name of Contractor : Estimated Requirement :

Agreement No. : Issue Rate :

Date of Receipt	Received from/Issued to (with Ret. to So/Indent)	Receipt	Issue	Balance	Initials of Contractor	Initial of Bank's/Architect's representative	Remark
1	2	3	4	5	6	7	8

TABLE-V

PROFORMA FOR REGISTER OF MATERIAL AT SITE ACCOUNT

Name of Work :

Name of Contractor :

Agreement No. :

Description of Material	Qty.outstanding from previous Bill	Deduct Qty.utilised in works measured since previous bill	Qty.outstanding & Qty.brought to site since previous bill	Signature of Site Engineer	Signature of Contractor	Initial of Bank's/ Architect's representative	Remark
1	2	3	4	5	6	7	8

TABLE-XII

PROFORMA FOR HINDRANCE TO WORK

Name of Work : **Date of Start of work :**

Name of Contractor : **Period of Completion :**

Agreement No. : **Dt. of Completion of work :**

S.No.	Nature of Hindrance	Date of Occurrence of Hindrance	Date of which Hindrance was removed	Period of which Hindrance existed	Signature of Site Engineer	Signature of Bank / Architects Representative
1	2	3	4	5	6	7

TABLE - XIII

PROFORMA FOR RUNNING A/C BILL

i. Name of Contractor/ Agency :

ii. Name of Work :

iii. Sl.No. of this Bill :

iv. No. & Date of previous Bill :

v. Reference to Agreement No. :

vi. Date of Written order to commence :

vii. Date of Completion as per Agreement :

S.No.	Item Description	Unit	Rate (Rs.)	As per Tender	
				Quantity	Amount (Rs.)
1	2	3	4	5	

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

Note: 1. **If part rate is allowed forany items, it should be indicated with reasons for allowing such a rate.**

2. **If ad-hoc payment is made, it should be mentioned specifically.**

Net Value since previous bill

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 Architects Representative (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	**Signature and date of Site Engineer**

TABLE - XIV

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

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

Total value of materials at Site.

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 on 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
Rank ----------

Date signature of
Banks Architects----------
(Name of the Architects)

Dated Signature of
the Contractor

TABLE - XV

MEMORANDUM FOR PAYMENT

R/A BILL NO.

1.	**Total value of work done since previous bill (A)**	**Rs. ----------**
2.	**Total amount of secured advance due since Previous Bill (B)**	**Rs. ----------**
3.	**Total amount due since Previous Bill (C) (A+B)**	**Rs. ----------**
4.	**PVA on account of declaration in price of Steel, Cement and other materials and labour as detailed in separate statements enclosed.**	**Rs. ----------**
5.	**Total amount due to the Contractor**	**Rs. ----------**

OBJECTIONS:

i)	**Secured Advance paid in the previous R/A**	**Rs. ----------**
ii)	**Retention money on value of works as per accepted tenders upto date amount Rs.**	**Rs. ----------**
	Less already recovered	**Rs. ----------**
	Balance to be recovered	**Rs. ----------**
iii)	**Mobilization Advance, if any**	
(a)	**Outstanding amount (principal + interest) as on date**	**Rs. ----------**
(b)	**To be recovered in this bill**	**Rs. ----------**
iii.	**Any other Departmental materials cost to be recovered as per contract, if any**	**Rs. ----------**
iv.	**Any other Departmental service charges to be recovered if any, as per contract (water, power etc.) enclose statement.**	**Rs. ----------**
	Total Deduction as per contract (F)	**Rs. ----------**

Adjustments, if any ---------- Rs. ----------
Amount less received by Contractor in --------- R/A Bill (as per statement of Contractor)

P.V.A. Rs. ----------

Total amount payable as per contract (E+F+G) Rs. ----------

(Rupees ---------- in words)

The bill amount to Rs. ---------- (both figures and words) has been scrutinized by us after due checking of the measurements of work as required and is recommended for payment.

Date: ---------- ----------
Signature of Architect with Seal

The bill amount to Rs. ---------- certified by Consultants has been scrutinized by me after due test checking of measurements of works as required and is recommended for payment for an amount of Rs.....

Date : ----------
Signature of Owners Engineer

STATUTORY DEDUCTION:

i)	**Total Amount due (E)**	**Rs. ----------**
ii)	**Less I.T. Payable**	**Rs. ----------**
iii)	**Less S.T. Payable**	**Rs. ----------**
	Net Payable	**Rs. ----------**

This figures given in the Memorandum for payable has been verified and bill passed for payment ---------- (in words and figures)

Date: ---------- ----------
Signature of the V.P. & C.H..

TECHNICAL SPECIFICATIONS FOR ELECTRICAL INSTALLATION WORK

SCOPE OF WORK:-

The Electrical Contractor's scope of work covers the following:-

Supply, testing prior to installation, testing after installation of electric meter/s and other installation and commissioning the complete Electrical Installation work associated with power supply system, lighting and domestic appliances, concealed wiring network as directed, earthing and lightning protection system, installing Heavy Gauge PVC / Black enamelled H.G. threaded conduits suitable for heavy mechanical stresses, concealed / open in slabs, walls / shafts, as required for Electrical wiring, telephones network and TV cable system for distribution in flats, basement, stilts etc., installing telephone and T.V. outlet boxes as required including fish wire. Telephone wires and co-oxial cable for T.V. outlets from the shafts as directed, alternate Emergency Power Panel including stand-by Diesel Generator Set and power supply network from this alternate stand-by D.G.Set, installation of fixtures and fittings issued by the Client or as ordered in B.O.Q. after testing, including holding their safe custody until handing over of the installation to the Clients, power supply to Domestic water pumps, fire pumps and any other related works for completion of the Building for its occupancy, Liaisoning with Electric Supply Company and / or Concerned Authorities and getting the installation approved by them and installation of electric meter/s is also included in the scope of Contractors work.

DRAWINGS, SPECIFICATION AND DEVIATIONS:-

The drawings and specification lay down minimum standards of equipment and workmanship. Should the tenderer wish to depart from the provision of the specification and drawings either on account of manufacturing practice or for any other reasons, he should clearly draw attention in his tender to the proposed points of departure and submit such information, drawings and specifications as will enable the relative merits of the deviations to be fully appreciated. In the absence of such information on the deviations, it will be deemed that the tenderer is fully satisfied with intents of the specification and drawings and their compliance with the statutory requirements, all the relevant I.S.Codes, I.E. Rules, Local Codes as governed by the Concerned Electric Supply Company, N.E.C. Electrical Inspector, etc.

The Contractor shall prepare fabrication and working drawings as well as concealed / open conduits layout drawings which will be got approved from the Architect / Clients / Consultants prior to execution and all work shall be to the approved working drawings. Approval of these drawings does not relieve the Contractor of his responsibility to meet the intents of specifications. All such drawings for approval are to be submitted in triplicate to the Owner / Consultants / Architects.

After virtually completing the work, the Contractors should submit AS BUILT drawings of all systems in triplicate along with his Final Bill.

SCOPE:-

The Scope of work shall cover the supply, installation and commissioning of all the power panels, incorporating circuit breakers, switch fuse units, busbars, interconnections, earthing etc., meeting the requirements shown in equipment schedule and the drawings.

Entire works shall comply with the latest issue of following standards, rules, codes of practice, unless specified otherwise in the specific requirements.

STANDARDS:-

The following standards and rules shall be applicable:-

IS : 2516	:	Specification for A.C. circuit breakers.
IS : 4047	:	Specification for heavy duty air breaker switch gear and fuses for Voltage not exceeding 1000 V.
IS : 3072	:	Code of practice for installation and Maintenance of Switch gear.
IS : 3106	:	Code of practice for selection, installation and maintenance of fuses (Voltage not exceeding 650 V).
IS : 4237	:	General requirements for switch gear and control gear for voltage not exceeding 1000 V.
IS : 2607	:	Air break isolators for voltage not exceeding 1000 V.
IS : 8623	:	Specification for factory built assemblies of switch gear and Control gear for voltage upto and including 1000 V. A.C. and 1200 V. D.C.
IS : 375:		Marking arrangement of switch gear bus-bars main connections and auxiliary wiring.
IS : 694:		PVC insulated copper wires for 650 / 1100 Volts grade.
IS : 1554	:	PVC insulated (heavy duty) electric cables for working voltages upto and including 1100 Volts.
IS : 3961	:	Recommended current rating for cables.
IS : 732:		Codes of practice for electrical wiring.
IS : 2274	:	Installation (system voltage not exceeding 650 Volts).
IS : 12360	:	Voltage bands for electrical installation.
IS : 2309	:	Protection of building and allied structures against lighting.
IS : 4648	:	Guide for electrical layout in Residential Building.
IS : 1646	:	Fire Safety of Buildings.
IS : 5216	:	Guide for Safety Procedures and Practices in Electrical Work.
IS : 3043	:	Code of practice for earthing.
IS : 3202	:)	
IS : 4047	:)	Climate proofing of electrical equipement.
IS : 2147	:)	Heavy duty air-break switches and
IS : 4064	:))	Composite units of air-break switches. and fuses for voltages not exceeding

IS : 4237)	1000 Volts.
)	
IS : 6875 :)	
IS : 2208 :)	HRC cartridege fuse domestic and similar purpose.
IS : 5133(I):)	Boxes for enclosures of electrical accesscries.
IS : 3854 :)	Heavy duty air-break switches and
IS : 3452 :)	Switches for domestic and similar purpose.
IS : 371 :)	Three terminals ceiling roses.
IS : 4615 :)	
IS : 1293 :)	
)	Switch socket outlet.
IS : 4160 :)	
IS : 4343 :)	
IS : 8828 :	Miniature air-break circuit breaker for A.C. circuits.
IS : 2312 :	Exhaust Fans.
IS : 374 :	Ceiling fans and regulators.
IS : 2082 :)	
IS : 3725 :)	Storage types electrical water heaters.
IS : 2266 :	Call bells and buzzers for indoor use.
IS : 1534 :)	
IS : 1717 :)	
IS : 1913 :)	Luminaires, ballasts, maintenance and safety requirements.
IS : 10322 :)	
IS : 2713 :	Tubular poles for overhead power lines & street lights.
IS : 2551 :	Danger notice plates.
IS : 2509 :)	
)	Regid PVC conduits for electrcial wiring.
IS : 3419 :)	
IS : 9537, Part II :	Rigid M.S. conduits.
IS : 3480 :	Flexible steel conduits for electrical wiring.
TD-S-113-18	Code of practice by India Telephone – Department.
ITD-S/WS- :)	
144C,)	Insulation and conductor resistance of telephone
BS : 6746 :)	wires and cables.
IS : 4984 :)	HDPE pipe and fittings.

ITD-S/WS- :)
113B,) PVC insulated, colour coded, twisted into paris,
BS : 6746 :) laid-up taped and overall.

CBL : 7000 :)

BS : 6746 :) PVC sheathed telephone cables.

IS : 1554 :)
MUMBAI Revised code of practice for telephone wiring of multistoreyed
TELEPHONES Buildings – 1985.

Codes of practise of Indian Standards or relevant British Standards in the absence of Indian Electricity Act and Rules National Electrical Code, Local Regulation prevalent in Maharashtra or the state which work-site exists, Regulations of Fire Insurance – Tariff Advisory Committee, Rgulations and Standards of Mahanagar Telephone Nigam Ltd., etc.

SYSTEM DETAILS:

Entire electrification work and its associated accessories shall be designed for the system data given hereunder.

Rated System Voltage	:	415 Volts (+/-) 10%, 3 – Phase, 4 Wire.
Rated System Frequency	:	50 Hz (+/-) 3%
Rated System Fault level	:	35 MVA at 415 Volts symmetrical.
Highest System Voltage	:	456 Volts r.m.s. line to line at 415 Volts.
Rated Lighting Control System Voltage	:	250 Volts, 1 – Phase, 2 Wire and earth, 50 Hz
System Earthing	:	Effectively earthed neutral.

All material and its associated accessories shall also be designed to withstand for the desired services due to fluctuations in supply voltage and variation in frequency as permissible under Indian Electricity Act and Rules.

Meter Room Works :

150 mm. dia. R.C.C. pipe/s shall be provided for laying of Electric Supply Company's power cables from outside of plinth protection upto a chamber in the meter room. In case the distance from the outer edge of the plinth protection upto the chamber in meter room is more than 2 meters additional pipes shall be laid and all the pipes shall be properly laid and jointed with collars etc. the pipe at the end of the plinth protection shall at the level of 600 mm. below the ground level.

One end of the R.C.C. pipe inside the meter room shall open in a brick masonry chamber of size 300 mm. x 600 mm. and 300 mm. deep.

One no. 8 SWG G.I. Wire shall be laid in the R.C.C. pipe for pulling the power cables.

One / two / three / four light point/s shall be provided in the meter room, the control switches for which shall be near the door but inside, from the wiring provided for the staircase lights. A teak wood plank of 20

mm. thick and varnished (with two coats) on all sides shall be provided in the meter room for fixing of Electric Supply Co s Bus System, Cutouts, I.C. cutouts for individual meters and ELMCBs for flats, cable end box to terminate main incoming supply cables shall be provided for the S.F. unit with suitable cable glands. On the outgoing side of S.F. unit a 3 phase and neutral busbar chamber shall be provided. The busbars rating shall be 50% more than the capacity of the S.F.U. controlling it.

The lead wired to individual meters and cutouts shall be taken out from this busbar chamber. Each load distribution on all phases and the proper colour code is to be observed for lead wire. Lugs shall be crimped at both ends of these lead wires for termination.

Wherever the energy meters are to be fixed in the wooden meter box / cabinet, the same shall me made out of 50 mm. x 25 mm. wooden frame and 20 mm. thick wooden planks on all sides and metal grill shall be fixed on the front door (side). The door shall have locking arrangement and lock with keys shall be provided. The meter box shall be fixed
to the wall and before polishing / painting, anti-termite treatment shall be given to it. Polishing / painting, has to be done to all the sides of the box / cabinet.

The meter box shall accommodate main S.F.U. for terminating incoming cable, T.P.N. Bus chamber and other switch gears like I.C. cutouts main switches, ELMCBs energy meters etc. All meters, switches etc., shall be interconnected with wires of size suitable for the connected load / meter capacities as directed.

All wiring in the meter room related to metering etc. shall be carried out with single core PVC stranded copper wires of adequate size, fixed on the T.W. Plank with brass clips and brass takes. Earth wire shall be provided with the lead wires for connecting earth terminates of meters, main switches etc.

The Contractor shall submit the layout drawing of the meter room wherein all the above items shall be shown. This layout shall be got approved by the Contractor from the Clients as well as from the Electric Supply Co. In the meter room, outgoing from the meters will be taken to the main switch, ELMCB, the outgoing from which either cables or copper wires, as specified, will lead to the respective destinations as specified.

All codes and standards mean the latest, wherever not specified otherwise, the installation shall generally follow the I.S. codes of practice of the relevant Standard Codes of Practice in the absence of corresponding Indian Standard.

Switch fuse units and disconnects :

Switch fuse units shall have quick-make, quick-break silver plated preferable double break contacts, with operating mechanism suitable for rotary operation in the case of cubical mounting. All switches shall be rated according to equipment schedule or drawings, and shall withstand the system prospective fault current let through. Cam operated rotary switches with higher rating S.F. units shall be heavy duty type conforming to IS : 4047.

Fuses shall be HRC cartridge type conforming to IS:2208 with a breaking capacity corresponding to system fault level. Fuses shall be line type with visible indication. Screw type diazed fuses are not acceptable for any rating.

All disconnects shall consists of switch units quick-make, quake-break type with silver plated contacts. The switches shall preferably have double breaks. All switches shall be mounted in sheet steel enclosures, which in turn is mounted on suitable angle iron frame work. In wet location switches shall have cast iron enclosures Disconnects shall have minimum breaking capacity.

Cubical Boards :

All boards shall be combination of 14 & 16 SWG sheet steel, free standing, extensible totally enclosed. Dust-tight, vermin-proof cubical, flush dead front and modular construction suitable for 3 phase, 415 V, 4 Wire, 50 Hz system. All boards shall be accessible form the front for the maintenance of switches, Bus-bars, cable terminations, meters etc. Cables shall be capable of entering the board both from top as well as from bottom. All panels shall be machine pressed, with punched openings for meters etc. All sheet steel

shall be rust infibited through a process of degreasing, acid pickling, phasephating etc. The panels shall be finished with two coats of synthetic enamel paint of approved colour over one coat of red oxide primer. Engraved plastic labels shall be provided indicating the feeder details including the size of the incoming / outgoing cables, capacity and danger signs.

Earthing :

All switches panels shall be provided with an earth bar as specified earthing of the switch boards shall be through the equipment earthing system provided in the building.

All meters shall be calibrated and tested through secondary injection tests.

All field tests shall be witnessed by Clients representatives, lost certificates shall be furnished by the Contractors.

Installation :

All panels shall be supported on MS Channels incorporated in the panel during the fabricating. All such supports shall be coated with primer followed by two coats of approved synthetic enamel colour paint. After completion of the work, all panels shall be touched up for damaged painting. All work shall be carried out as per IS: codes, I.E. Rules, NEC.

All panels shall be meggared at phase and phase to Neutral using 1000 V meggar with all outgoing feeders in closed position. The meggar value should not be less than 2.50 megohms between phases and 1.50 megohme between phase and neutral.

Fabrication drawings of all panels shall be submitted by the Contractor to the Clients in triplicate and they shall proceed for fabrication after Clients approval.

Testing and Inspection :

All switch boards shall be factory inspected before finishing and dispatch, with the Clients representatives.

Certificate for all routine and type tests for circuit-breakers in accordance with IS:2516-1963 shall be furnished from the manufactures. In addition, all panels shall be meggared phase to phase and phase to Neutral, using 1000 V meggar with all the switchgear in closed position. The meggar value should not be less than 2.50 megohms between phases and 1.50 megohms between phase and Neutral.

Distribution Board :

Scope :

The scope of work shall cover supply, installation, testing and commissioning of lighting and power distribution boards. Associated civil work required for the erection of the D.B.S. is also included in the scope of this contract.

Standards :

The following standards and rules shall be applicable :

1)	IS : 2675 – 1983	:	Enclosed distribution fuse boards and cutouts for Voltage not exceeding 1000 V
2)	IS : 375 – 1963	:	Marking and arrangement of switchgear busbars main connections and auxillary wiring.
3)	IS : 8828 – 1978	:	Miniature circuit-breakers.
4)	IS : 2607 – 1976	:	Air-break isolators for Voltage not exceeding 1000 V.

5) IS : 9926 – 1981 : Fuse wire used in rewirable type Elec. fuses upto 650 V.

6) Indian Electricity Act 1910 and Amendments issued there under.

All codes and standard mean the latest, where not specified otherwise, the installation shall generally follow Indian Standards Codes of Practice and the relevant British Codes of Practice in the absence of Indian Standard.

Distribution boards along with the controlling M.C.B.s, Fuse or Isolator as shown be fixed in an M.S. Box, suitable for recessed mounting and in wall. D.B.S. should be factory made from the standard "approved" manufactures and not fabricated by the tenderer. D.B.S. shall be made of 16 SWG sheet duly rust inhibited through a process of degreasing, acid pickling, phosphating and spray painted or powder coated to an approved colour over a coat of red oxide primer. Three phase boards shall have phase barriers and wire channel on three sides. Neutral bars shall be solid tinned copper bars
with tapped holes and chase headed screws. For three phase D.B.S. 3 Nos. independent neutral bars shall be provided.

There shall be earth busbar of adequate size provided separately to terminate all outgoing circuit earth wire conduit knockouts shall be provided as required / shown on drawings and entire board shall be rendered dust and vermin proof and shall have conduit knockout entry.

MCBs shall have quick make and break non-welding self wiping alloy contacts both on the manual and automatic operation. Each pole of the breaker shall be provided with inverse time thermal overload and instantaneous over current tripping elements, with tripping must be on all the poles and operating handle must be common. Breakers must conform to MBS 3871 with facility for locking in off position. Pressure clamp terminals for stranded / solid conductor insertion are acceptable upto 4 sq.mm. aluminium of 2.5 sq.m.. copper conductors and for higher conductor sizes the terminal shall be suitably shrouded. Wherever MCB isolators are specified they are without tripping elements.

Distribution Boards shall have MCBs as shown on the drawing / schedule. D.B.S. shall meet with the requirements of IS:2675 and marking arrangement of Bus-bars shall be accordance with IS: 375, Bus-bars shall be suitable for incomer switch rating and sized for a temperature rise of 35 Centigrade over the ambient temp. circuit diagram indicating the distribution shall be pasted on the inside of the DB s instructed. One earthing terminal for single phase and two terminals for 3 phase D.B.S. shall be provided with an earth strip connecting these earthing studs / terminals and the outgoing ECC earth bar. All MCBs shall be with a minimum short circuit rating of 10 Kamps. All outgoing feeders shall terminate or by means of insulated single conductor copper wires.

All termination shall be carried out by using crimping type ferrules or reducer type terminal lugs.

Installation and Testing:

All distribution boards shall mounted as directed either recessed or on adequate size of angle iron frame work in case they are to surface mounted. All mounting frames shall be coated with one coat of red oxide primer followed by two coats of synthetic enamel paint of approved colour, after installation. All D.B.S. shall touched up for damaged painting. All work shall be carried out as per NEC.

All boards shall be meggard phase to phase and neutral, using 1000 V meggar with all switchgear in close position. The meggar value should be not less than 2.50 megohms between and 1.50 megohms between phase and neutral.

E.L.C.B. (Earth Leakage Circuit Breaker) :

The E.L.C.B.s shall have leakage sensitivity of 30 ma / 30 Secs and shall have a short circuit current rating equal to that of MCB i.e. mini. of 10 KA. Current rating and No. of poles shall be as described in the B.O.Q. / Drawing. A test push knob facility shall be provided to periodically test the operation of E.L.C.B.s.

Medium Voltage Cabling:

Scope :

The scope of work shall be cover supply, laying, connecting, testing and commissioning of medium voltage power cables inclusive of all labour.

Standards :

The following standards and rules shall be applicable:

1) IS : 1554 (P-I) : PVC insulated electric cables (heavy duty)

2) IS : 1753 : Aluminium conductors electric cables (heavy duty)

3) IS : 3961 : Recommended current ratings for cables.

4) Indian Electricity Act and Rules.

5) NEC.

All codes and standards mean the latest. Whereas not specified otherwise, the installation shall generally follow Indian Standard Codes of Practice and the relevant British Codes of Practice in the absence of Indian Standard.

Cables :

All cables shall be 1100 Volt Grade, PVC insulated and extruded inner sheath with or without steel armouring as specified and with an outer PVC Protective sheet. Cables shall have high conductivity stranded aluminium or copper conductor as specified. Cores shall be colour coded as per Indian Standard.

All cables shall be new without any kind of visible damages. The manufactures name, insulating material, conductor size, voltage class and ISI mark shall be embossed on the surface of the cable at every 600 mm. centres.

Installation:

Cables shall be laid in the routes marked in the drawings, where the route is not marked, the Contractor shall mark it out on the drawing and also on the sire and obtain the approval of the Architect / Consultant before laying the cable. Procurement of cables shall be on the basis of actual site measurements and the quantities shown on the schedule of work shall be regarded as a guide. Payment shall be restricted to the quantity of cable installed (and measured jointly as per unit stated) at site. Cables rising indoors shall laid on walls, ceiling, shafts or trenches. Cables shall be fixed to walls or ceiling with supports saddles. Cables trays will be used wherever directed / necessary. All supports shall be at not more than 500 mm. apart. Plastic identification tags shall be provided at every 20 M in general at every floor in the rising shaft in particulars. Oversize M.S. Sleeves shall be used for cables passing through the walls. Cables shall be bent to a radius not less than 12 times the recommendations, whichever is higher, in case of direct buried cables the cable route shall be parallel or perpendicular to roadways, walls cushion to provide cushion against abrasion. Width of excavated trenches oversand cushion shall be covered with a mini. of excavated trenches will be as per drawings or as directed. The laid cables in protective layer of bricks on both sides and top. Backfill of the trench shall be with a minimum earth cover of 600 mm. to be properly rammed and consolidated. At road / pathway crossings cables have a pulled through R.C.C. pipe of 150 mm. dia. to be laid for each cable by the Electrical Contractor. A mini.of 100 mm. thick concrete bed has to be spread before laying the RCC pipes, topped by 150 mm. thick concrete to avoid any damage to the RCC pipe.

The cables shall be provided with cable route markers at every 20 meters and also at every in the direction of the route.

All cables shall be full runs from panel to panel without any joints or splices. A minimum of Eight (8) M loop shall be provided at each end of every cable. Cables shall be identified at end terminations indicating the feeder number and the Panel / Distribution

Board from where it is being laid. All cable terminations shall have tinned copper compression lugs. Cable terminations shall have necessary Brass glands. The Brass glands and armouring shall be earthed at both the ends of the cable. The end terminations shall insulate with a minimum of six half lapped layers of PVC taps.

Testing :

MV cables shall be tested before and upon installations with a 1000 V meggar and the following established.

1) Continuity on all phases.
2) Insulation Resistance
   a) Between conductors.
   b) Between all conductors and ground.

All test reading shall be recorded. Cables will be charges only after the above reading are found to be satisfactory.

Mode of Measurement :

Cables will be measured on the basis of unit length and shall include the following :

1) Cables, clamps, supports and spacers.
2) Installation, testing and commissioning.
3) Cable marking.

Each cable termination will be measured as one unit for payment.

1) Cable glands, lugs, bolts, nuts.
2) All joining materials.
3) Installation, testing and commissioning.
4) Earthing of glands and armour.

Cables buried underground will be measured on the basis of unit length and paid for unit rates and shall includes.

1) Excavated and backfilling as described above.
2) Sand for cushioning and protective bricks.
3) Cable route markers.

C.T.S. Wiring :

Scope :

The scope of work shall cover supply, installation, testing and commissioning of all C.T.S. wiring work.
All size of teak-wood battens should be varnished before fixing on the wall. The batten should be from good teakwood battens and should not have any knot in between, varnishing of batten is to be done on all sides. As far as possible overlapping of the battens should be avoided by providing the bridge. The wires should be fixed with appropriate types of tinned brass joint clips at every 2" to 2.5 distance. The teak-wood wires shall be fixed nettlefold screws and not by nails. Earthing wires shall be stranded copper conductor with Green / Yellow – Green colour insulation of 440 V Grade.

Conduits Wiring :

Scope :

The scope of work shall cover supply, installation, testing and commissioning of all conduit wiring. All works shall be carried out as per NEC.

Standards :

The following standards and rules shall be applicable :

1)	IS : 732	:	Code of Practice for Electrical Wiring installation (System voltage not exceeding 650 V)
2)	IS : 1646	:	Code of Practice for fire safety of buildings (General Electrical installation (Part II).
3)	IS : 9537	:	Rigid steel conducts for Electrical wiring (Part II)
4)	IS : 2667	:	Fittings for rigid steel conducts for Electrical Wiring.
5)	IS : 3480	:	Flexible steel conduits for Electrical Wiring.
6)	IS : 3837	:	Accessories for rigid steel conduit for Electrical Wiring.
7)	IS : 694	:	PVC insulated cables.
8)	IS : 9537	:	Rigid non-metallic conduits for Electrical Wiring.
9)	IS : 6946	:	Flexible (pliable) non-metallic conduits for Electrical Wiring.
10)	IS : 1293	:	3 – Pin plugs and sockets.
11)	IS : 8130	:	Conductors for insulated electric cables and flexible cods.
12)	IS : 5133	:	For switch boxes and other conduit accessories.

13) Indian Electricity Act 1910 and Amendments issued thereunder.

14) Regulations for the electrical equipment in buildings issued by the Mumbai Regional Council of Insurance Association of India.

15) NEC.

Rigid and Flexible conduits.

All conduits shall be heavy gauge black enamelled mild steel or galvanised steel or as specified in schedule of works. Conduits shall be with ISI mark.

Flexible conduits shall be formed from a conditions length of spirally wound inter locked strip steel with a fused zinc coating on both sides. The conduit shall be terminated in brass adaptors.

Accessories :

Conduit fittings such as bends, elbows, reducers, chase, nipples, split couplings, plug, etc., shall be specifically designed and manufactured for their particular application. All conduit fittings shall conform to IS : 2667 – 1964 and IS : 3887 – 1966. Conduit bends and elbows shall not be used. Instead, wherever bending is required, the conduit shall be properly bent using the bending machine. Only in unavoidable conditions, use of bends and elbows may be permitted.

Cast iron round junction boxes used for light and fan points shall be normally 75 mm. deep in case of slabs and 50 mm. deep in case of walls. Bottom of the junction boxes shall be flush with wall / bottom of the slab. The fabricated junction boxes shall be 1.60 mm. thick and of suitable dimension and minimum 75 mm. deep. Other dimensions shall be as per IS:5133. These boxes may be used for light / bell point in walls. Theses boxes shall be galvanised M.S. boxes. Checknuts shall be used on either side of the box for conduits. At conduit entry, bushes shall be provided to avoid cutting of insulation of wires.

Notes of Concealed Conduiting :

1) Routing of concealed conduits Location of conduit drop or rise in walls, location of junction boxes, vertical surface conduit runs in shafts etc. Wherever shown on the drawing is schematic only. Adjustments / Re-routing of the same shall be carried out by the Contractor to suit layout of lighting fixtures, ceiling fans, receptacles, telephone outlets, TV outlets room switch boards etc., shown on relevant drawings and to suit site conditions.

2) Passing of embedded conduit through columns for any reason whatsoever is totally prohibited, except in any of the really unavoidable situation, where Structural Consultants express permission in wiring will be a must before so doing.

3) Cross over of embedded conduit in slab, except at locations unavoidable should not be done, in case of cross-over of conduits where it is a must, the contractor shall obtain the specific permission for the location of cross-overs from the Consultant prior to concerning the slab.

4) Conduits droppers in columns shall not be permitted.

5) Concealed conduit running along the length of beam is to be avoided. Suitable conduit sleeves shall be provided in lintel beams where conduit droppers are required to be extended through such beams.

6) Standard typical details shall be referred for concealed conduit routing through sunk slab through staircase, walls, etc., and for provision of junction boxes, wherever required.

7) Conduit routing at Lift Machine Rooms and at Lift Wells shall be installed in consulation with Elevator Contractor.

8) The Contractor shall select the routes of surface conduiting in such a way that embedded conduits laid during civil works need not be punctured. In case embedded conduits get damaged, it shall be the responsibility of the Contractor to rectify the defective work at his own cost.

9) All conduit shall be of 25 mm. nominal bore except specified otherwise.

10) Bending radius of concealed conduit shall not be less than ten times the outside diameter of the conduit. Maximum distance between two junction boxes shall not be more than four meters.

11) Cast iron junction box for fan hooks shall be at appropriate location so as to avoid interference.
12) Conduit sleeves with threaded projections (50 mm.) shall be provided at suitable locations in Auxillary Beams, Lintel Beams to facilitate extension of conduits in walls.

13) Junction boxes, conduits etc., shall be suitably tied to reinforcing bars in slabs to avoid displacement and misalignment. Minimum 25 mm. thick concrete cover around conduit / junction box shall be ensured.

14) To facilities pulling of wires / cables, pull-out wires shall be provided in each length of conduit to be concealed. Also all open faces of junction boxes and open ends of conduits shall be suitably plugged or covered by the Contractor with care to avoid ingress of stones / sand / concrete mix etc. into junction boxes / conduits during pouring of concrete. Similar care must be taken at the locations where couplers etc., are used for extension of conduit.

15) During civil works, Contractor shall arrange to provide conduit sleeves (of adequate size and adequate in number) at ceiling level or walls for the passage of surface – conduits so as to avoid routing of

conduits along the beam contours at a later stage. Co-ordination in this regard shall be Contractor's responsibility.

16) Supply and installation of 150 mm. / 250 mm. dia. Hume pipes for main power cable, for earthing conductors and for direct line telephone cables shall be in Contractors scope. These pipes shall be laid in typical standard details as directed to avoid damage to these pipes.

17) Two Nos. earth electrode stations shall be provided for general earthing system of the buildings to be located to suit site conditions. Distance between two earth electrode stations shall not be less than 3.5 meters and that between the outer edge of plinth protection of the building and earth electrodes shall not be less than 2.00 meters.

Wiring :

All wires shall be single core stranded copper PVC insulated to IS: 694 and shall be 1100 V Grade. All wires including earth wire shall be terminated using crimping type ferrules or lugs. Earthing shall be of stranded copper conductor with Green or Yellow Green insulation of 440 V Grade with ISI Mark.

All wires shall be colour coded as follows:

Phase	Colour of Wires
R	Red
Y	Yellow
B	Blue
N	Black
Earth	Green (insulated)
(if any)	Grey.

All wires shall be with ISI Mark.

Installation :

All works shall be carried out as per National Electrical Code. The size of conduits shall selected in accordance with the number of wires permitted table given below :

Note : Even though 20 mm. dia. conduit is indicated in the table.
Contractor has to use minimum size of the conduit of 25 mm. dia. unless otherwise indicated. Size of wires shall be not less than 1.5 sq.mm.

Nominal Cross Section & Area (Sq.mm.) of wire.	20 mm.	25 mm.	32 mm.	40 mm.	No. of Strands Dia. in mm.
1.50	6	10	14	---	3/0.80
2.50	5	10	14	---	3/1.04
4.00	3	6	10	14	7/0.85
6.00	2	5	9	11	7/0.04
10.00	---	4	7	9	7/1.35
16.00	---	2	4	5	7/1.70

The above table is applicable for both straight as well as deviated runs.

Conduits shall be kept at a minimum of 100 mm. from the pipes of other Services such as T.V., Telephones etc., Pull / Junction Boxes shall be provided for straight conduit runs of more than 10 meters and also for deviated runs with more than 3 Nos. of 90 bends.

Separate conduits / raceways shall be used for

1) Normal lights, and 5 A – 3 pin sockets on lighting circuits.

2) Power outlets : 15 A – 3, 20/A 30 A 2 pin + scraping earth metal clad socket.
3) Separate conduit runs shall be used for incoming and outgoing circuits.
4) Wires of various circuits but of different phases.

Conduits runs in the slab shall be properly laid, fixed to the reinforcement bars, before concerning of the slab all conduit entries shall be properly blocked or sealed to avoid ingress of concrete slurry.

For vertical conduits drops in the wall proper chasing shall be carried out and conduit laid and fixed, chase restoration shall be done after installing the 24 SWG G.I. wiremesh over the chase and after which plastering shall be carried out to give a neat smooth finish.

As far as possible horizontal chase in the wall shall be avoided. If unavoidable, it shall not exceed 300 mm.

All final branch circuits for lighting and appliances shall be single core stranded copper conductor cable run inside conduits. The conduits shall be properly threaded and screwed into sockets junction boxes etc. or fixed properly, using epoxy soin, in case of PVC pipe. The exposed threading shall be given a coat of rust inhibiting chemical / paint.

Branch circuit conductor sizes shall be as shown in schedule of quantities and / or drawings.

Final branch circuits shall preferably be kept in a separate conduit upto cct. Branch distribution boards. No other wiring shall be bunched in the conduit except those belonging to the same phase. Each lighting branch circuit shall not having more than ten (10) outlets or 800 watts whichever is lower.

Flexible cords for connections to appliance, fans and pendants shall be 650 / 1100 V Grade (three or four cores i.e. with insulated neutral and earth wires of the same size) with stranded copper wires insulated twisted and sheathed. Colour of the sheath shall be subject to Architect's approval.

Looping system of wiring shall be used. Wires shall not be jointed. Where joints are unavoidable they shall be made through approved mechanical connection. Earth wire shall be provided fir all light, fan, bell and socket points, control switches having marking for light or fan as required shall be connected in the phase conductors only and shall be ON when knob is down. Unless otherwise stated, switches shall be fixed in 3 mm. white colour Hylam sheet on M.S. Boxes with cover plate as specified. Chromium plated brass screws shall be used. M.S. switch boxes for switch board shall be of sufficient dimensions to accommodate required no. of choke type fan regulators for flush mounting or electronics regulators as the case may be.

M.S. Boxes shall be fabricated from 1.6 mm. thick M.S. sheet and shall be galvanized. Switch boards accommodating 3 or more than 3 switches shall be provided with slide-in fuse holder of 10 Amps. Rating and proper rating fuse-wire.

Power wiring shall be distinctly separate from lighting circuit, M.S. conduits not less than 2.5 mm. and wires not less than 2.5 sq.mm. shall be used for power wiring. Wire size for circuits will be as per schedule of quantity.

Testing :

The entire installation shall be tested for :

A) Insulation resistance.
B) Earth continuity.
C) Polarity of single pole switches.

A test certificate shall be submitted in the Format, in triplicate as required / specified by the Electric Supply Company / M.S.E.B.

Point wiring rates shall include, but not limited to supply and installation of the following items.

PVC heavy gauge or M.S. conduiting embedded CONCEALED type or exposed SURFACE type as called for, branch and sub-circuit wiring with all items such as fabricated junction boxes, conduit fittings and accessories such as couplers, bends, tees, nipples, spacers, saddles, pull-out wires (2

mm. G.I. Wire), hardware, ceiling fan boxes to be embedded in the ceiling etc. Supports for exposed surface conduits shall be at an interval of 750 mm. for vertical run and at the interval of 450 mm. for horizontal run.

Recessed type M.S. covers as specified for various items such as room switch boards, receptacle board or light switch board etc. Housing with knock outs shall be tailor made or as specified to accommodate all switches, sockets, outlets, fan regulators, etc., as necessary for a particular location.

PVC insulated, unsheathed, stranded copper wires for phase, neutral and earth for branch circuits, for sub-circuits and for point wiring, cable, / wire upto lamp holder.

SP or DP or TPN / MCBs / ELCBs individual switches and accessories.

All consumables such as insulation tape, hardware, pipe sleeves and any other item not specified but required for completion of point wiring.

All work in complete wiring of a switch circuit of any length from the D.B. to the following via the switch board.

1) 3 Plate ceiling rose.
2) Connector.
3) Blank Plate.
4) Socket.
5) Lamp holder – Angle / Straight.
6) Fan boxes, hooks.
7) Any other terminal outlet.

All metal boards and boxes sunk or surface mounted.

Supply and installation of this item of work shall comply with all above requirements in co-ordination with the construction of civil works for provision of sleeves in walls / beams / slab and for laying embedded junction boxes / inspection boxes / pull out boxes / pull out wire etc. as required.

Earthing :

Scope :

This item of work is required for providing the earth-pits for electrical power network and also for lighting protection network. Earth pits for power network and lighting protection network shall be separate from each other without any interconnection. However, all Earth pits for power supply shall be interconnected with each other through buried earth conductors, similarly all earth pits for lighting protection shall be connected with each other through buried earth conductors. Spike earthing for St. Light poles is also covered. Each down common conductor of lighting protection network shall be terminated to a separate earth electrode pit through test-link.

Standards :

The following Standards and rules shall be applicable

1) IS : 3043 – 1987 Code of Practice for earthing.
2) Indian Electricity Act and Rules Electric Supply Co.'s Rules.
3) NEC.
4) IS : 2309 – Protection of building and allied structures against lighting.

All codes and standards mean the latest. Where not specified otherwise, the installation shall generally follow the Indian Standard Code of Practice. In the absence of Indian Standards, the relevant British Standard Codes shall be followed.

General Requirements :

1) The earthing shall generally carried out in accordance with the requirements of I.E. Rules as amended from time to time and relevant regulations of B.E.S.T / Electric Supply Company, If Rules No. 32, 51, 61, 62, 67, 69, 88(2) and 90 are particularly applicable.

2) All earth connections shall be carefully made visible for inspection and testing of individual earth electrode shall be possible.

3) The earthing electrode shall be away at a minimum distance of 2 mt. From the outer surface of plinth protection / Diaphragm wall in case of basements. A minimum clearance of twice the depth of electrode shall be maintained between two earth stations. Wherever adequate distance cannot be maintained due to site constraints. The decision of the Architect / Consultant will be final and binding.

4) A brick masonry chamber cement plastered from both inside and outside shall be provided on the top of the each earth station to house the funnel for watering and the earth connection. The size of this chamber will be 300 mm. x 300 mm. deep. The

   chamber will be provided with a lockable cast iron cover hinged to the C.I. frame embedded in the top portion of the masonry wall, by providing spikes for grouting. Lock with key shall be supplied for each pit. The top of the masonry chamber shall be 50 mm. above the surrounding G.L.

5) The earth conductor from electrode shall be taken out of the masonry chamber through a protecting pipe embedded in the masonry laid atleast 250 mm. below the ground level.

6) Earthing system shall be mechanically robust and the joints shall be capable of retaining low resistance even after passage of fault currents / strockes.

7) Joints shall be welded / soldered / tinned and double rivetted. All the joints shall be mechanically, electrically continuous and effective, joints shall be protected against corrosion by giving suitable treatment duly approved by Architect.

8) Contractor shall use the layout drawing issued by the Architect / Consultant for guidance only. He shall submit working drawings for approval of the Architect prior to execution of the work. He will thereafter submit as built drawings for conductor route showing locations of earth pits etc., for final records and reference alter executing the work.

9) Contractor shall use the schematic layout drawings for the quantity and route of the conductor issued by Architect / Consultant for guidance only. He shall work out the exact quantity of earth conductors with its associated accessories required for the job.

Earth Electrodes :

1) The materials of earth electrode and earth conductors shall be galvanised iron unless specified otherwise in the bill if quantities, specifications or drawings.

2) The earth electrode shall be free from paint, enamel, grease etc.

3) The earth electrode shall be embedded as far as possible in the moist soil and below permanent moist level.

4) Earth electrode shall not be installed in the proximity of a metal fence.

Types of Earth Electrodes :

The earth electrode shall be either a pipe electrode or plat electrode, as detailed in schedule of quantities. Plate electrodes shall be used for sub-stations and large medium voltage network and pipe electrodes for small medium voltage network and installations.

Pipe Electrode :

1) Pipe Electrode shall consist of 2.50 meter long single piece heavy duty G.I. pipe of minimum 40 mm. N.B. and shall be cut tapered at the bottom. 12 mm. dia. holes in a staggered manner shall be frilled on the pipe as per IS : 3034.

2) This Electrode shall be buried vertically in a specially prepared earth pit of size 30 cm. x 30 cm. and the earth pit shall be filled with alternate layers of charcoal, salt and fine washed sand with a minimum thickness of 150 mm. for each layer. A funnel with wiremesh inside shall be fixed to the top of G.I. pipe for watering purpose.

3) The earth conductor of 50 mm. x 6 mm. G.I. strips shall be connected to the electrode just below the funnel with proper terminal lugs, check nuts the other end of this 50 mm. x 6 mm. strip shall be terminated through a removable test-link, on the earth bus at meter room. Test link is to be provided in masonry chamber.

4) Details of chamber etc., have been already give below.

Plate Electrode :

1) The plate electrode shall consist of G.I. Plate of size 600 mm. x 600 mm. x 6.3 mm. as per B.O.Q. or drawings.

2) The electrode plate shall be buried vertically in a specially prepared earth pit which shall be dug up 2.50 M. deep from the ground level. The earth plate shall be placed in the earth pit with its faces vertical and embedded in the alternate layers of coal fine washed sand and salt with a minimum thickness of 150 mm.

3) The earth conductor of 50 mm. x 6 mm. G.I. strip shall be connected to the earth electrode plate with terminal lugs, the other end of this 50 mm. x 6 mm. G.I. strip shall be terminated through a removable test link provided in the masonry chamber, on the earth bus at meter room.

4) A 20 mm. G.I. pipe heavy gauge, shall be provided from the masonry chamber upto the top earth late for watering purpose. The G.I. pipe shall be provided with a funnel having wiremesh inside for watering.

5) Details of masonry chamber etc. have been already give above.

Simple Pipe Electrode for earthing individual Street Light Poles etc. with chamber :

1) Pipe Electrode shall consist of 2.50 meter long single piece heavy duty G.I. pipe of minimum 40 mm. N.B. and shall be cut tapered at the bottom. 12 mm. dia. holes in a staggered manner shall be frilled on the pipe as per IS : 3034.

2) This Electrode shall be buried vertically in a specially prepared earth pit of size 300 mm. x 300 mm. and 3 M. deep. The pit shall be filled with alternate layers of salt, charcoal, salt and fine washed sand, with a minimum thickness of 150 mm. for each layer.

3) The earth conductor of 25 mm. x 5 mm. G.I. strips shall be connected to the electrode just below the top with G.I. nuts and bolts and spring and flat washers with check-nuts. Other end of this earth strip shall be connected to the equipment to be earthed using suitable lugs for termination at both ends, etc.

Sub-Station Earthing :

In case of Sub-Stations, large installations and wherever specified earth electrode shall be 600 mm. x 600 mm. x 3.15 mm. copper plate. The earth lead shall be connected to earth plate, using termination lugs and brass nuts, bolts and washers, masonry chamber details being as given above, including heavy duty 40 N.B. G.I. Pipe, funnel for watering etc.

Earth leads and connections :

Earth lead shall be either bare copper or aluminium or galvanized steel as specified with sizes in the B.O.Q. Copper lead shall have a phosphor content of not over 0.15% aluminium and galvanized steel buried in ground shall be protected with bitumen and hessian wrap or polythene faced hessian and bitumen coating. At road crossings necessary hume pipes shall be laid. Earth lead run on surface of wall or ceilings, columns, beams etc., using G.I. spacers of minimum 6 mm. thick and saddles. The complete earthing system shall be mechanically and electrically continuous and robust and should provide an independent return path to the earthing source.

Testing of Earth-Stations / Pits :

After the erection of Earth-Stations is complete, Contractor should arrange for an earth-tester, carry out earth-resistance test (- average of 4 – readings -) in the presence of the Clients representative and records the results.

For substation earth-stations, the resistance of each earth station should not exceed 0.5 ohms.

For other earth-station, it shall be less than 0.2 ohms.

In case of higher resistance values, either the electrode shall be driven of more depth or to construct additional earth-pit assesblies at a distance minimum three meter apart to achieve the combined resistance less than or equal to the desired results as stated above.

Sizes of the G.I. Strips to be used :

1) 50 mm. x 6 mm. G.I. earth strip shall be used for connecting the earth-bus at meter room / meter box of chamber to be earth electrode pit.

2) 40 mm. x 6 mm. G.I. strip shall be used for interconnection of earth pits by directly buried underground system to a minimum depth of 600 mm. to form an earth grid.

3) 20 mm. x 3 mm. G.I. earth strip shall be used for connections between earth-bus and S.F. / M.C.B. / M.C.C.B. / E.L.C.B. units at meter room. Two pole units shall be connected with one such earth strip and three or four pole units shall be connected by two such earth strips.

4) 32 mm. x 6 mm. G.I. strip shall be used for horizontal air-termination network at terrace / roof level and for down covers to bond with earth-electrode pit through test-link.

5) The overlapping of strips at joints where necessary, shall be 75 mm. (minimum). The joints will be double riveted and then welded and painted with silver paint.

Equipment Earthing :

All apparatus and equipment transmitting or utilizing electric power shall be earthed in the following manner. Copper earth wires / strips shall be used where specified in B.O.Q.

1) **Power transmission apparatus** :

   a) Metallic conduits shall not be accepted as an earth continuity conductor. A separate insulated earth continuity conductor or bar of the size 50% of the size of the phase conductor subject to the maximum as given below shall be provided.

Copper	Galvanized Iron
Minimum 2.5 Sq.mm.	6 Sq.m..
Minimum 6.5 Sq.mm.	200 Sq.m..

The earth continuity conductor may be drawn inside the conduit in which case it should be insulated.

b) Armour of the cables shall be earthed by two distinct earth connections at both the ends to the armouring, the size of the connection being as for the metallic conduit.

c) In case of unarmoured cable, an earth continuity conductor shall either be run outside along the cable or should form a separate core of the cable.

d) 3 phase power panels and distribution boards shall have two distinct earth connections of the size co-related to the incoming cable size. In case of single phase D.B.'s and isolating switches 1 earth connection and in case of 3 phase, two distinct earth connections shall be provided, sizes being co-related to the sizes of incoming cables.

Testing :

The following earth resistance shall be measured with an approved earth-tester and recorded.

1) Earth resistance of each earth station.
2) Earthing system as a whole.
3) Earth continuity conductors.

Prohibited Connections :

Use of following as earth conductor is strictly prohibited for earthing an installation or ever as a link in the earthing system.

Neutral conductor, sprinkler pipes, gas pipes, water pipes, structural steel work, metallic enclosures or armour of cables and conductors, metallic conduits lighting protection system conductors are all prohibited to be used earth conductor.

Mode of measurement – as per schedule of quantity. However, the cost of earthing the following items shall become part of the item itself and no separate payment / rate of earthing these items shall be made.

a) Motors – earthing forming part of cabling / wiring for the motors.

b) Isolating switches and starters shall form part of mounting frame, switch starter etc.

c) Fan lightings, Exhaust fan fittings Light fittings – These shall form part of installation of these fittings only.

d) Conduit wiring cabling – shall form part of the wiring or cabling.

e) Street Lighting – should form that of the street light pole.

External Lighting :

The scope of the work covered the supply, installation and testing and commissioning of lighting poles, wiring to the fixtures, cable laying as specified and shown on drawings / B.O.Q. etc. All work shall be carried out as per NEC.

Standards :

The following standards and rules shall be applicable :

1)	IS : 1913 – 1969	:	General and safety requirements for light fittings.
2)	IS : 1944 – 1981	:	Code of Practice for Lighting Public through fares.
3)	IS : 3528 – 1966	:	Water Proof Electric Lighting fitting.
4)	IS : 2713 – 1978	:	Swaged type tubular poles.
5)	IS : 2149 – 1970	:	Luminaries for street lighting. 650 V.
6)	Indian Electricity Act & Rules.		
7)	N.E.C.		

All codes and standards mean the latest. Where not specified otherwise, the installation shall generally follow the Indian Standards Codes of Practice or the British Standard Codes of Practice in the absence of Indian Standards.

Lighting Poles :

The lighting poles shall be fabricated from heavy duty cold rolled street tubes to IS:2713 and hot dip galvanized of painted as specified. The pole shall have M.S. base plate and Junction Box a large access panel shall provide easy access to multiway porcelain connector and fuse board to be mounted inside the Junction Box. The access shall be specially fabricated with adequate reinforcement and weather gasket to prevent ingress of moisture and vermin proofed. Poles shall have large diameter entries for incoming and outgoing cables and two earth studs. The contractor shall make a drawing and have it approved before fabricated.

Cable Laying :

Cable shall be generally laid as specified in section "Cabling" cable shall be terminated in a 4-way terminal block inside the pole of attached therewith. Contractor shall mark out the cable route and got it approved before laying the cables.

Earthing :

All street lighting fixtures and poles shall be earth as specified under section "Earthing"

Mode of Measurement :

Each light fitting with lamp, control gear, earthing etc., shall be considered as one unit for measurement and payment. Each lighting pole, concreting, coping, base plate, earthing etc., shall be considered as one unit for measurement and payment. Wiring from terminal block to the light fitting shall be considered as one unit for measurement and payment. All cabling work shall be measured on the basis of unit length for supply and installation. The excavation and backfilling of cable trench, cable-termination in Junction Boxes or Terminal Box of the pole etc., shall not be measured separately.

Power Panel Boards:

The salient features of construction of power panel boards shall be as follows:

1) Construction: Totally enclosed, dust and vermin proof conforming to IP-54 of IS:2147, free standing, floor mounting, single front compartment, cubicle extensible type at both ends.

2) Welded shall be fabricated with shipping sections bolted together. All such joints to be gaskets. Lifting lugs shall be provided.

3) Panel shall be fabricated out of CRCA Sheets 1.6 mm. thick for front and rear doors and cover. Bottom and top of the panel for cable glands and component, mounting plates shall be fabricated out of 2 mm. thick CRCA Sheets. Frame work – 2 mm. thick.

4) All doors to be hinged type except bus-bar chamber which shall be bolted type. Panel shall be flush door design suitable for access from front.

5) Fabricated panel shall undergo seven tank process and two coats of primer before giving Epoxy resin paint finish. Final colour shall be Shade No. 631 of IS: 5. No welding or drilling shall be done on the panel after final painting.

6) Vertical bus-bars will be red from main horizontal bus-bars located at top. Panel compartment, bus-bar chamber and cable alley will be operated from, front. Depth of MCCB panel shall be 1000 mm. and the width of it shall be 7000 mm. The depth of the other section shall be minimum 500 mm. and width shall be 500 mm. vertical bus-bar chamber and cable alley width shall be 300 mm. Height of earth bus-bar chamber at the bottom shall not be less than 150 mm. Total height of the panel shall not exceed 2400 mm. Foundation channel shall be provided at the bottom and shall be of type MC 1000.

7) Bus-bars shall be electrolytic grade aluminum suitable for the current capacity as per BOQ and shall be supported by high quality FRP insulator of SMC type, to withstand short circuit of 500 KA at 415 Volts. Bus-bars shall be provided with heat shrinkable PVC sleeving with R, Y, B and neutral colour coding for identification. All bus-bar connections (huts and bolts) shall be accessible so that they can be checked with normal tools.

8) In a blank compartment provided at the bottom, G.I. earth bus-bar of 50 mm. x 6 mm. run through entire length shall be provided and project outside in vertical. Formation with facility for connection earth strip at either terminal on opposite sides to connect external earth conductor. All accessible live terminals / portion of components shall be provided with shrouds.

9) Separate compartment shall be provided for each three phase feeder. Each feeder compartment shall be provided with three pilot lamps with red lens on each for indication of power supply.

10) Indicating lamps shall be panel mounting type with filament or Neon lamps. Filament type lamps shall be provided with series resistors to prevent short circuiting of control supplies on fusing of lamps filaments. The lens shall be easily replaceable from the front.

11) **Indication Instruments and Meters** :

These shall be provided as per BOQ and shall be 96 mm. square size suitable for flush mounting and zero adjustment from outside. All meters except KWN meter shall be AE make. KWN meter shall be GEC / IMP make.

12) Current transformers shall be bar primary cast type or dry type, and shall have short-circuit-time withstand rating equal to that of associated switchgear for 1 sec.

13) **Push Buttons**: The push buttons shall be of the momentary contract to actuate for 10 Amp. At 240 V AC and 2200 V.D.C., provided with integral inscription plates engraved with their functions. They shall have required "NO' ass "NC" contacts. Only "Siemens" or E.E. Push Buttons shall be used.

14) All HRC switch Fuse Units, Contactors, single phase preventive and O/L relays, indicating lamps will be only "Siemens", "English Electric" or "Havells" Brands only.

15) **Control and Selector Switches** :

The control switches and selector switches shall be of rotary type having enclosed contacts, adequately rated for application but with a minimum rating of 10 Amps, at 2400 V AC and at 220 V.D.C. the plats

shall have clear position markings, control switches shall have momentary contacts, spring return to centre, with pistol grip handles, instrument and selector switches shall have stay-out contacts with oval knuried handles.

16) **Name Plates:** Main name plate shall be fixed at the top centre, name plate giving feeder details shall be provided and are to be fixed by screws. All labels / name plates shall be black plastic with white engravings of letters or minimum 6 mm. size.

17) **Internal Wiring:** All internal power wiring shall be done either stranded PVC Copper wire 2.5 sq.mm. size 1000 V Grade or strips of insulated copper conductor of adequate size.

Small wiring for control circuit shall be done with stranded Copper wire PVC conductor 1100 V Grade.

Each end of control cable shall be provided with identification Ferrules Yellow in colour with black letters.

All wiring shall be terminated on stud type terminal blocks through crimping sockets. Not more than 2 connections shall be made on any one terminal block. All spare auxiliar contacts of contactors shall be wired to terminal block.

18) **Terminal Blocks** :

Terminal blocks for power and control wiring shall be of reputed make stud type, with washers, nuts, and lock nuts, and identification mark. All adjacent terminals shall have insulating barriers. All power terminal blocks shall be rated for a minimum current of 300 Amps. Terminal blocks for controls and instrument circuit shall be rated for minimum 115 Amps., and shall be suitable to receive 100 Sq.mm. conductor. All sets of power control power terminal blocks shall be identified with engraved plastic labels, black background and white letters.

19) **Cable Terminators** :

Dublic compression type of brass cable glands mounted on gland plates shall be provided to receive and support all power and control cables entering the switchgear. Size of the cable gland shall be suitable for cables entering the switchgear. Cable gland shall have earthing facilities for earthing armour of the cable.

20) **Tariff Advisory Committee and CPRI Tested** :

The switchgear shall be approved by the TAC for fire insurance and CPRI tested for short-circuit test and enclosures test.

21) **Tests** :

Following tests shall be performed before shipped the switchgear panels to Site :

1) high Voltage Test at 2.5 KV.
2) Insulation Resistance test before and after H.V. test, using 1000 V Meggar.
3) Operational Test.
4) Three sets of Test Certificates to be submitted.

22) **Documentation** :

Contractor shall arrange to get from Manufacturers and shall supply following drawings in quadruplicate for approval before starting manufacturing operations within 4 weeks from the LOI / date of order.

a) General Agreement Drawings.
b) Scheme and Wiring Diagram Drawings.
c) Instructions and Service manual for all the Components.

Approval of drawings by Clients/ Consultant does not relieve the contractor of the "Performance" of the panels.

After supply and installation and commissioning of the panels and switches Contractor shall submit 6 sets of the above documents of as built in panels.

23) **Air-Break Switches** :

For all places in this project : Metal Clad.

1) The air-break switches shall be of AC 23, heavy duty, quick make-quick break type as per IS : 4047.

2) Switches shall be capable of withstanding the mechanical and thermal stresses produced by overloads and short-circuits.

3) All switches of all rating shall have interlocks with the compartment doors. Switches 250 A and above shall be lockable in "OFF" position. All live parts shall shrouded. It shall be possible to intentionally defeat the interlocks if required.

4) Red indicating lamps shall be provided for "ON" indication.

5) Brands : Only L & T, Siemensm English Electric, Hevells, controls and switchgear brands to be used.

The switches shall have the following standards rating :
32, 63, 100, 125, 200, 250, 300, 400 and 600 Amps.

24) **Fuses** :

The fuses shall comply with the following :

1) HRC Cartridge Fuse : Link type with carriers.

2) Certified reputing capacity not less than 46 KA at 415 Volts A.C .as per IS : 2000.

3) All fuses shall have visible indication to indicate "Blown" condition.

4) Pressure clamp terminals for wires upto 4 sq.mm. and bolted lugs for higher ratings.

5) HRC Fuses:Make : E.E., L & T, Siemens, Havells.

6) Fuse Puller: Contractor shall supply 3 sets of Fuse Pullers.

25) **Moulded case circuit breakers** :

M.C.C.B.

1) The M.C.BC.B.'s shall be 4 pole construction wherever specified and shall have independent Manual opening and closing mechanism of quick make, quick break type and they shall be trip free in operation. "ON" , "OFF" and "TRIP" mechanism shall be clearly indicated.

2) They shall conform to IS : 2516.

3) Bolted type neutral link will be provided with T.P. M.C.C.B. only.

4) It shall be possible to mount accessories on the M.C.C.B's like shunt trip, U.V. release, alarm contacts etc.

5) The M.C.C.B.'s shall have adjustable thermal / static trip devices.

26) **Contactors** :

1) The Motor starter contactors shall be of electro-magnetic type double break, non-gravity type rated for uninterrupted duty suitable for operation under AC – 3 utilization category of as per IS : 2959. The contacts shall be silver plated.

2) 2 Nos. and 2 NC auxiliary contacts shall be included.

3) The operating coils shall have Class "E" insulation of wire and shall be suitable for operation of any specified control supply systems.

27) **Thermal overload Relays** :

1) These shall be 3 elements, positive action, ambient, temperature compensated with a time lag and adjustable settings.

2) The setting range shall be selected according to the ratings of the motor.

3) The relay shall be self – reset type / hand reset type. The reset button in case of hand reset type – shall be fixed on the compartment door.

4) The relay shall have atleast on "NO" and one "NC" or changeover contact or as per requirements.

LIST OF APPROVED MANUFACTURERS FOR LT ELECTRICAL WORKS		
S.N.	**MATERIALS**	**APPROVED MANUFACTURERS**
1	Moulded Case Circuit Breaker (MCCB)	i) Legrand
		ii) Schneider
		iii) Hager
		iv) Siemens
		i) Havells
2	Switch Fuse Unit (SFU)	i) L & T
		ii) Siemens
		iii) ABB
3	Power Contactors	i) L & T
		ii) Siemens
		iii) Schneider
4	Meters	i) HPL
		ii) IMP
		iii) L & T
5	Armoured LT cable	i) Polycab
		ii) Finolex
		iii) R R Kabel
		iv) CCI

6	Cable Termination	i) Dowells
		ii) Comet
		iii) Frontier Technologies
7	Cable Tray	i) Profab
		ii) Metalemms
		iii) Asian Ancillary Corporation
8	PVC Conduit & Accessories	i) Allied Conduits
		ii) SRG
		iii)New India Trading
9	Wires (FRLS only)	i) RR Kabels
		ii) Havells
		iii) Finolex
		iv) Polycab
10	MS Conduit & Accessories (ISI Mark).	i) BEC
	Medium - 1.6 mm thick.	ii) AKG
	Heavy - 2 mm thick.	iii) NIC
10	Modular Switches & Sockets with PVC Box	i) Legrand - (Arteor model)
		ii) MK - (Blenz model)
		iii) Schneider - (Zencelo model)
		iv) Elleys - (Fotolia model)
11	Distribution Board, MCB, RCCB & RCBO	i) Legrand
		ii) Schneider Hager
		iii) Hager
12	Data/ Voice Cable & accessories	i) D-Link
		ii) AMP
13	Light Fixtures	i) CG
		ii) Philips
		iii) CGL
		iv) Osram
		ii) Bajaj
		iii) Orient
		iv) Havells
14	Tubes, PL's & CFL's	i) Philips
		ii) Osram
15	Ceiling Fan	i) CG

		ii) Havells
		iii) Bajaj
16	Exhaust Fan	i) CG
		ii) Almonard
		iii) Alstom
17	Speakers	i) BOSCH
		ii) Ahuja
18	Amplifier	i) BOSCH
		ii) Ahuja
19	Electrical LT Panel	CPRI Approved Panel Manufacturer Only.
20	Capacitors	i) Siemens
		ii) L& T
		iii) GE
		iv) ABB
		iii) Universal
21	CT'S / PT'S	i) AE
		ii) Kappa
		iii) Ricco
		iv) Rishabh
22	APFC Relay.	i) HPL
		ii) Emercon
		iii) Alstom
		iv) Beluk
		v) L & T
23	Contactor / Timer	i) Schneider
		ii) Hager
		iii) L & T
		iv) Siemens
		iv) Legrand
24	Energy Meters	i) Trinity
		ii) Schneider
		iii) L & T
		iv) Tecnic
		v) AE
		vi) HPL

NB. 1) The contractor should obtain prior approval from Employer / Consultants before placing order for any specific materials. Employer may / delete any of the makes or brands out of the above list.

2). All materials should conform to relevant standards and codes of BIS.

3) Materials with I.S.I. mark shall be used duly approved by the SBIIMS Engineer / Architect.

Note: - If any material is found to be not up to the mark, the contractor will have to produce original bills/certificate from the manufacturer or his authorised Distributor for authenticity and genuineness of the material for consideration and as per make approved by the SBIIMS. The same will not be considered for payment.

SCHEDULE OF QUANTITIES FOR ELELCTRCAL WORK AT THANE BRANCH					
SR.NO.	**DESCRIPTION**	**QTY**	**UNIT**	**RATE**	**AMOUNT**
A	**MAIN / SUB MAIN DB'S**				
1.A	Supply, installation, testing & commissioning of 250A IC TPN SFU with 250 A HRC fuses (L&T / Siemens/ABB make) 440 V 3 phase & neutral 50 c/s AC23 duty on MS angle iron frame fabricated out of 40 mm. x 40 mm. x 5 mm MS angle duly painted with cable end boxes, earthing, name plate danger board fixing accessories etc.	**1**	Nos		
1.B	Supply, installation, testing & commissioning of 150 A IC TPN SFU with 150 A HRC fuses (L&T / Siemens/ABB make) 440 V 3 phase & neutral 50 c/s AC23 duty on MS angle iron frame fabricated out of 40 mm. x 40 mm. x 5 mm MS angle duly painted with cable end boxes, earthing, name plate danger board fixing accessories etc.	**1**	Nos		
2	Supply and Installation of main LT panel and Automatic Power Factor Control panel floor ' mounted, front operated, dead back, totally enclosed vermin proof, indoor, non-draw out, cubicle type power dist. panel fabricated out of 2mm thick CRCA sheet having gasketed hinged door on each cubicle, fully powder coated / enamel painted after seven tank treatment, incorporating horizontal and vertical sleeved copper bus bars 'complete with all internal wiring, danger board, two earthing lugs, cable chamber etc. as required 'housing below mentioned switch gears / meters.				
	Note :- GA & Control Drawing of the panel shall be approved by the Bank before fabrication. (Panel shall be CPRI approved only.)				
	Incomings -				
	1 Nos 200A MCCB, TP, 36 Ka breaking capacity with all standard accessories & with Static releases, as follows.				
	i) O/L Release Range: 0.4Ir-1.0Ir				
	ii) Rotary Operating Handle.				
	iii) Shunt trip				
	iv) 100x100mm Danger Notice Board in English and Marathi				
	Outgoings:				
	a) 6 Nos., 63A,TPN, MCB with neutral & accessories (submain panel for generator,AC panel,APFC & spare)				
	b) 2 Nos., 100A,TPN, MCB with neutral & accessories (submain panel for generator,AC panel,APFC & spare)				
	c) 1 Set of 300A TPN tinned Copper bus bar with PVC sleeving & accessories				
	d) 1Set, RYB, LED indicating lamps with resistors and fuses				
	e) 1 no., 0-250A, Digital Ammeter with CT & inbuilt S/S				
	f) 1no., 0-500V, Digital Voltmeter with inbuilt S/S				

	g) 1 No of 100 A TPN SFU with 63A HRC fuses for APFC panel				
	h)1 no of 6 stage APFC Relay module Digital readout of Syntron 1179D/Beluk with Binary Switching				
	i)Auto Manual switch with On-delay timer in manual mode				
	j) Capacitors 3(2No),5(2No) &10 (2No.) KVAR 415 volts 50 hz AC 3 Phase Delta connected Double Dielectric Metalized Polypropylene for 5 stages with discharge resistors & series Inductor coil				
	k) 6 nos Capacitor duty Contactors with HRC fuses with base as bachup fuses & 2A HRC fuses for contactor coils				
	l) 6 nos of LED read indicating lamps for ON stage indication.				
	m) Push type Red & Green switches for making stages ON/OFF in manual mode.	**1**	no		
3	Supply,installation,testing and commissioning of 4-way VTPN double door generator power main panel having vertical fishbone busbsr type, factory assembled wall mounted sheetmetal fabricated, fully power coated having dust proof & vermin proof hinged door with internals such as DIN channels, neutral link, internal wiring com-lete with double earthing lugs including DB wiring dressing with ferruling etc. with all accessories				
	Incomer: 1 No 100 A FP MCCB Out going: 2 Nos. 32/40A TPN, 6Nos 20/25/32 A SPN MCBs (to UPS,E-lobby, Server room AC, Lighting DB & BM cabin AC)	**1**	No		
4	Supply,installation,testing and commissioning of 8-way TPN double door **AC panel** having vertical fishbone busbsr type, factory assembled wall mounted sheetmetal fabricated, fully power coated having dust proof & vermin proof hinged door with internals such as DIN channels, neutral link, internal wiring com-lete with double earthing lugs including DB wiring dressing with ferruling etc. with all accessories				
	Incomer: 1 No 100 A FP MCCB Out going: 7Nos 63/40A TPN, 3 Nos 20/25/32 A SPN MCBs (to singage,AC units & raw power)	**2**	No		
5	Supply, Installation, Testing & Commissioning of 4 way **Distribution Boards** complete with MCBs/Isolators/ Bus bars and interconnections. Standard DB's of specified makes as per list of materials shall be used (DOUBLE DOOR IP42)	**2**	Nos		
a)	TPN 4 Way as follows: LDB & RPDB				
	1 no., 32A, FP MCB+ELCB as incomer				
	Outgoing 10 A/16A/20 A SP MCBs - 12Nos.				
b)	SPN as follows (UPS DD 12 way DB's)	4	Nos		
	Incommer 32A, DP MCB - 1 No.				
	Outgoing 10/16A SP MCBs -10Nos.				
6	Supply, installation, testing & commissioning of 20/25A Plug Sockets with 3P with 20/25A SP switch (for AC units) with 2x2.5& 1Nos 1.5 sq. mm. wire circuit from AC DB.	17	No		

7	Supply,Installation,Testing & Commissioning of 32A/25A DP MCB in M.S box UPS output	2	Nos		
8	Supply,Installation,Testing & Commissioning of 40/63A 4P MCB in M.S box.	2	Nos		
9	Supply & Installation of 16A AC1, Timer Switch alongwith 1 no. 2NO 40A 3M contactor alongwith suitable size enclosure box for signage, etc. including power circuit wiring of (2x4 + 1x4 Sq.mm) FRLS flexible wires laid through PVC conduit directly taken from DB including all necessary hardware & accessories, etc. complete as required. (Schneider / Hager / Siemens / Legrand make as approved by client / consultant)	1	Nos		
10	Supply & Installation of 63/40A, TPN MCB with weatherproof box for terminating supply to AHU's, Pump machines, etc. alongwith all necessary hardware & accessories, etc. complete as required. (Schneider / Hager / Siemens / Legrand make as approved by client / consultant)	12	Nos		
	TOTAL of SECTION (A)				
B	CABELS / MAINS				
1	Supply & Installation of 1100V grade armoured cable having sector / circular shaped aluminium / copper conductor PVC insulated cores, laid up, PVC tape wrappe d inner sheathed, GI strip / wire armoured and overall extruded PVC sheathed confirming to IS: 1554, laid on wall / ceiling using GI clamps & spacers as per route shown at site and further as directed by Consultant at site in the following sizes :-				
1.1	31/2 x 120 Sq.mm AL from main source to main panel with 2x 8swg Cu earth wire.	0	Mtrs		
1.1	31/2 x 95 Sq.mm AL from main source to main panel with 2x 8swg Cu earth wire.	0	Mtrs		
1.2	31/2C 30 sqmm AL armoured cable from main panel to generator panel & AC panel with 8swg GI earth wire	50	Mtrs		
1.3	4C x 6 Sq.mm Copper armoured cable from sub main (Generator) panel to UPS panel & for AC outdoor Units with bare 12 swg GI wire.	250	Mtrs		
1.4	4C x 4 Sq.mm Copper armoured cable from submain (Generator) panel to LDB panel with bare 12 swg GI wire.	50	Mtrs		
1.5	3C x 4 Sq.mm Copper armoured cable for UPS I/P & O/P from main panel to Glow Sign Board.	30	Mtrs		
1.6	3C x 4 Sq.mm Copper armoured cable from main panel to Glow Sign Board.	15	Mtrs		
1.7	4C x 6 Sq.mm Copper flexible lead wires from UPS input DB to UPS inputs with 1 run 0f 4sqmm Cu flexible wire for Body earth in PVC rigid or flexible pipe.	10	Mtrs		
1.8	4C x 10 Sq.mm Copper armoured cable with bare 12 swg GI wire from generator panel to e-corner	50	Mtrs		
2	Supply & Installation of end termination of above mentioned cables including compressed type brass glands, crimping type copper lugs, insulation tape etc. as 'required complete with earthing of glands in following sizes				
2.1	31/2C x 120/95Sq.mm AL	0	Nos		
2.2	31/2Cx 30 Sq.mm Al	0	Nos		
2.3	4C x 6 Sq.mm Copper	34	Nos		

2.4	3C x 4 Sq.mm Copper	5	Nos		
2.5	4 x 6 Sq.mm Copper flexible lead wires	2	Nos		
2.6	4C x 10 Sq.mm Copper armoured cable	2	Nos		
	TOTAL of SECTION (B)				
C	**LIGHTING & POWER WIRING**				
1	Supply & Installation of concealed / surface **point wiring** using 600v grade 3 nos of 1.5 sqmm copper conductor PVC insulated **FRLS** wires (with proper R,Y,B color code) pulled through heavy gauge PVC conduits / casing-capping laid concealed over false ceiling or in wall chases or on the ceiling in case of an open ceiling as per the instructions given at site including 2.5 sqmm circuit wires from the relevant DB and also including 2.5 sqmm green color copper earth wire and switch plate, switches, etc. as approved by the consultant. The wires from ceiling junction to light points shall be drawn in flexible PVC conduit with adoptor & cover junction box & crimp type lugs at both ends.Saddle & clamps shall be PVC (Each circuit shall not feed more than 8 points OR 800 watts as per following configuration.)				
1.1	Primary light points including the cost of MS concealed box grid plate & 6A switch.	105	Nos		
1.2	Secondary light points looped from the above point	105	Nos		
1.3	Two way light points including the cost of MS concealed box grid plate.	2	Nos		
1.4	6A 2/3 -pin combined shuttered socket points separetly on boards(primary)	20	Nos		
1.5	Secondary 6A Plug point on switch board / looped from above 6A primary plug point.	20	Nos		
1.6	**Exhaust/wall fan points** comprising of 5A socket near fan and switch on light switch board or exhaust/wall fan	7	Nos		
1.7	**Ceiling fan points** comprising of wiring as above with steps type electronic regulator on lighting board(120 watts) and supply and installation of anchor fastener & hook to suspend the ceiling fan	27	Nos		
1.8	BELL POINT comprising of wiring as above including G- Magic wireless out door bell 4061 with remote, 32 -melodies & flash light.	6	nos		
2	Supply,laying,installation & testing of following concealed **SOCKET POINT wiring** using 1100 v grade 3 nos of 2.5 sqmm Copper conductor PVC insulated **FRLS wires** (with Proper RYB colour code) pulled through rigid /flexible 25mm /20mm PVC conduits of medium quality & crimp type lugs at both ends for pantry/toilet/strong room etc .Each circuit feeding not more than three points.				
2.1	5/15 A socket & 16 A switch point directly taken from lighting DB	6	nos		
2.2	5/15 A socket & 16 A switch point loop from above point	6	nos		
	TOTAL of SECTION (C)				
D	**CONDUITS / RACEWAYS FOR POWER WIRING:**				

1 1.2	Supply and laying of following **RACEWAYS/CONDUITS** in required size trenches with proper ties / clamps at appropriate intervals. The rate shall be inclusive of carefully removing the floor tiles by machine cutting &removing the malwa below the tiles for laying raceways conduits for power, telephone,Data cables etc. The depth of the trenches shall be minimum 2" or upto the RCC of slab from the finished floor level . The rate shall also inclusive of back filling the trenches with mix of 1:2 PCC after laying the raceways /conduits for smooth finish upto the floor level. 25 mm dia ISI mark PVC heavy duty conduits	 500	 Mtrs		
2	Supply and laying of following sizes of FLOOR JUNCTION BOXES with top cover for above raceways /conduits fabricated out of hot dip Galvanized Steel with removable screwed cover plates on all four sides for blocking the entry All the junction boxes to be properly earth bonded with raceways pipe using 14 SWG Copper bare wire. Stainless Steel plate of 14 SWG paper coated mirror finish for junction boxes with mirror screws for fixing				
2.1	300mm X 300mm X 50mm X 2mm thick	10	Nos		
2.2	200mm X 200mm X 50mm X 2mm thick	35	Nos		
2.3	100mm X 100mm X 50mm X 2mm thick	5	Nos		
3	Supply,laying,installation & testing of following **RAW /UPS POWER SWITCH SOCKET POINTS** on skirting/walls by using 3 X 2.5 sqmm Copper conductor PVC **FRLS wires** pulled through already laid floor . raceways/conduits and taken upto the position marked, using PVC rigid /flexible conduits run concealed within walls/partitions/ work station etc with concealed MS box flush to the surface, front plate etc & hardware as required .Not more than three points in one circuits .Rate is inclusive of all raiser PVC flexible conduits as required.				
3.1	5/16 A socket & 16 A switch point directly from UPS/RAW DB	10	Nos		
3.2	5/16 A socket & 16 A switch secondary point .	10	Nos		
3.3	6 A 2/3 pin socket & 6 A switch point directly from UPS DB	10	Nos		
3.4	6 A 2/3 pin socket & 6 A switch point directly from UPS DB	10	Nos		
4	Supply,laying,installation & testing of following **COMPUTER SWITCH SOCKET POINTS** on skirting/walls by using 3C X 2.5 sqmm Copper conductor PVC **FR sheathed WHITE colour** flexible cable pulled through already laid floor . raceways/conduits and taken upto the position marked, using PVC rigid /flexible conduits run concealed within walls/partitions/ work station etc with concealed MS box flush to the surface, front plate etc & hardware as required .Not more than three points in one circuits .Rate is inclusive of all raiser PVC flexible conduits as required.				
4.2	3nos of 6A 3-pin socket below the work station on 8 module plate & 1 no 5/16 A 3-pin socket and 16 A SP switch with indicator above the work station with above mentioned wiring from UPS DB	45	Nos		
4.3	2nos of 5/16A 3-pin socket & 2 no 16A SP switch with indicator above the work station	6	Nos		
	TOTAL of SECTION (D)				

E	**LIGHTING FIXTURES**				
1	Supply ,installation and commissioning of the following concealed or surface mounted **LIGHT FIXTURES** with lamps of makes as specified or equivalent (**from approved makes only**) with all accessories like suitable ballast/Drivers etc. The fixtures shall be assembled and installed at position with necessary required for installation hardware such as clamps,nuts, bolts, screws,S-hook,chain and suspension rods as required or as per the requirement of light fixtures.				
1.1	2x2 full glow 36w LED	95	Nos		
1.2	15W LED SPOT LIGHT with metal body	110	Nos		
1.7	(1 X 18W) LED Tubelight.	18	Nos		
1.8	(1 X 9W) LED Tubelight.	4	Nos		
1.9	S & I of Wall mounted E**xhaust fan** (9" dia,230V,1400 rpm) of decorative plastic body and blade with louvers outside.	7	Nos		
1.10	S & I of Wall mounted **Ceiling fan** (48").	12	Nos		
1.11	S & I of Wall mounted **wall fan.**	15	Nos		
	TOTAL of SECTION (E)				
F	**EARTHING**				
1	Preparation and commissioning of **earth pits** as per IS 3043-1987 made up of the following size electrode embedded 3 meter in ground with 115mm alternate layer of charcoal ,salt and sand. The bus bar bolted to earth plate by a bolt and check nut & washer. Watering arrangement of funnel for chamber with cast iron cover for whole assembly.				
1.1	**GI** earthing pit made up of 600 x 600 x6mm thick hot dipped galvanized electrode.	1	Nos		
1.2	**COPPER PLATE** earthing pit made up of 600 x 600 x6mm thick hot dipped galvanized electrode.	2	Nos		
1.3	25 X 3mm thick copper strip	20	Mtrs		
1.4	25 X 3mm thick GI strip	50	Mtrs		
1.5	1C x 10 sq.mm flexible Cu. Wire through heavy guage PVC conduit (Dedicated UPS Earthing)	100	Mtrs		
	Isolated Earthing bus bar comprising of 300 X 40 X 6 mm thick Copper bar fixed on insulated support and having 25 nos of holes and nut and bolts for clamping the earth leads. The whole assembly in MS box of size 400mmX 300mm X50mm deep and having transperant acrylic cover etc.	2	Nos		
	TOTAL of SECTION (F)				
G	**VOICE NETWORKING**				
1	Supply and fixing of 50 Pair telephone MDF consisting of tag blocks in groups of 10 Pair krone, disconnector type, with S.S brackets for krone complete with powder coated metal enclosure, krone tag block mounting arrangement, telephone distribution chart and locking arrangement (for EPABX Field side).	2	Nos.		
2	Supply and laying of 50 pair Cu ARM jelly field cable of 0.5 sqmm electrolytic grade tinned copper PVC insulated twin twisted pairs with terminations and ferruling in respective of Krone type connector wherever necessary **through already laid conduits/ Raceways**.	150	mtrs		

3	Supply & installation of Telephone point wiring on workstations/tables/partitions by using 2-pair cable pulled through already laid floor raceways/conduits and taken upto the table top using PVC rigid / flexible conduits run concealed. Each point consists of one RJ-11 jack type telephone socket, MS box flush to the surface, front plate etc & hardware as required.	42	Nos.		
4	Providing temporary supply to work stations, lighting ,telephone connections during the work in progress. Removing all unwanted wires, casing cap, conduits etc	1	lumsum		
	TOTAL of SECTION (G)				
H	BUYBACK OF ALL ELECTRICAL ITEMS INCLUDING PANELS,DBs, LIGHT FITTINGS, FANS ETC	-1	lumsum		
Nos	**Description of Items**				
A	MAIN / SUB MAIN DB'S				
B	CABLES / MAINS				
C	LIGHTING & POWER WIRING				
D	CONDUITS & RACEWAYS FOR POWER WIRING				
E	LIGHTING FIXTURES				
F	EARTHING				
G	VOICE NETWORKING				
	TOTAL - (A to G)				
	BUYBACK (H)				
	TOTAL AFTER BUYBACK				
	GST(18%)				
	TOTAL INCLUDING GST				
	RUPEES :				