TATA INSTITUTE OF FUNDAMENTAL RESEARCH
(Autonomous Institution of the Department of Atomic Energy, Government of India)
Survey No.36/P, Gopanpally Village, Serilingampally Mandal,Ranga Reddy District,
Hyderabad-500046, Telangana

Telephone:+91-40-20203009	**Date:08-07-2022**
Website :www.tifrh.res.in	**Email: rajasekharr@tifrh.res.in**

PUBLIC TENDER

(TWO PART TENDER) **for the following Works:**

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.	
Tender No.	**TIFR/PD/CF22-51/220546**
Type of Tender	**Two Part Tender (Part-I: Technical Bid and Part- II: Price Bid)**
Estimated Cost	**Rs. 52,77,000/-**
Cost of EMD	**Rs.1,05,540/- (Demand Draft to be drawn in favour of "TIFR Centre for Interdisciplinary Sciences", Payable at Hyderabad (To be enclosed with the Technical Bid Part – I)**
Pre bidding meeting & Time	**15-07-2022 at 11:00 Hrs**
Last Date for Submission of Tender	**22-07-2022 by 13:00 Hrs**
Date of Opening Bids(Only Part-I: Technical Bid)	**22-07-2022 at 15:00 Hrs**
Tender Fee	**Rs. 500/-(Demand Draft to be drawn in favour of "TIFR Centre for Interdisciplinary Sciences "Payable at Hyderabad (To be enclosed with the Technical Bid Part –I)). However, contractors who have a valid MSME/NSIC certificate are exempted from the tender fee.**

- In case the Part "I" and Part "II" bids are not sealed in separate envelopes the tender will be rejected.
- The technical bid should not contain any indication of the price.
- The Technical Bid received without payment of tender fees and EMD shall be summarily rejected.
- Contacts: Mr. Krishna, Tel: 040- 20203009 for any technical or commercial terms clarifications mentioned in the tender.

Sealed tenders are invited for the aforesaid works from contractors having similar work experience in reputed Research Institutions, Universities, Central Government/Public Sector Undertaking, Private Laboratories, Multinational Companies, etc. Interested contractors who are satisfying prequalification criteria stipulated by TIFR-Hyderabad shall only submit their bids. For further details and any clarification on the tender you may please contact Head-Technical Services, Survey No.36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District, Hyderabad-500046.

Last date for submission of the tender is 22-07-2022 by 13:00 Hrs.

(Rajasekhar. R)

Head-Technical Services

TENDER DOCUMENT

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.

NAME OF THE TENDERER:.....

Address: .....

.....

.....

.....

Last date of submission of the tender: On or before 22-07-2022 by 13:00 Hrs.

TECHNICAL BID
PART-I

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.

Tender Notice	:	**TIFR/PD/CF22-51/220546**
Name of Work	:	**Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III.**
Location	:	**Tata Institute of Fundamental Research Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District, Hyderabad – 500046.**
Estimated Cost	:	**Rs.52,77,000/-**
EMD	:	**Rs.1,05,540/- (Demand Draft to be drawn in favour of "TIFR Centre for Interdisciplinary Sciences", Payable at Hyderabad (To be enclosed with the Technical Bid Part – I).**
Delivery Period	:	**90 Days (Completion Period)**
Validity	:	**Seventy five (75) days after opening of Part-I, Technical Bid**

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SECTION-I	IMPORTANT INFORMATION

INTRODUCTION

The Tata Institute of Fundamental Research is a National Centre of the Government of India, under the umbrella of the Department of Atomic Energy, as well as a deemed University awarding degrees for master's and doctoral programs. Tata Institute of Fundamental Research Centre for Interdisciplinary Sciences, Hyderabad invites bids for the following work:

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.

1. PARTICULARS

a)	Location	TIFR, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.
b)	Pre-Bid Meeting Date & Time	15-07-2022 at 11:00 Hrs
c)	Closing date & time of receipt of bids	22-07-2022 by 13:00 Hrs
d)	Date & time of opening of Sealed Cover-I containing Technical Bid	22-07-2022 at 15:00 Hrs
e)	Date of opening of Sealed cover-II containing Financial Bid of eligible bidders	To be intimated to eligible bidders within 7 days from the date of tender open.

2. GENERAL INSTRUCTIONS

2.1. TIFR shall award the contract for the project through the two Bid systems.

2.2. The Contractor is advised to visit and examine the site of work and its surroundings and obtain any information that may be necessary, in addition to those provided in this document. The Contractor shall be deemed to have fully acquainted himself about the site condition, whether he inspects it or not.

2.3. The Contractor should adhere to the building bye-laws applicable for the area.

2.4. All clarifications shall be sought before the date of pre-bid meeting. The bidders may make suggestions which shall be considered during the Pre Bid Meeting. No further clarifications shall be issued after the issue of noteworthy replies to the pre-bid queries.

2.5. The submission of the bid by Contractor would imply that they have carefully read and agreed to the terms and conditions contained in this bid document.

2.6. The bid for the work shall remain open for acceptance for a period of 75 (seventy five) days from the date of submission of the bids, which period may be extended by mutual agreement and the Contractor shall not cancel or withdraw the offer during this period.

2.7. This bid document shall form a part of the contract agreement.

3. SUBMISSION OF BIDS

Bids shall be submitted to Head- Technical Services***, TIFR,*** **Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist, Hyderabad-500046** in a sealed Master envelope super scribed "Bid for **Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR** with our enquiry no. and due date, containing two separate sealed covers clearly super scribed as **"Technical Bid"** and **" Financial Bid"** before the closing date and time of submission in the following manner:

a) **"Technical Bid":** This will contain Technical part, Eligibility Documents along with testimonials. Earnest Money Deposit (EMD).

b) **"Financial Bid":** This will contain the complete bidding document with duly filled in Schedule of Financial Quote of Financial Bid & Tender Drawings.

The Bids without signature of the authorized person of bidder and seal, without EMD, with conditions or conditional rebates shall be summarily rejected.

4. EVALUATION OF BID

4.1. **EVALUATION OF TECHNICAL BID:** The bids received will first be first opened and will be examined for EMD/ Declaration Letter, Eligibility Criteria, Conditions, etc. Conditional Tenders and Tenders without EMD shall be summarily rejected.

4.2. **EVALUATION OF FINANCIAL BID:** The Financial Bid should contain the complete bid document with duly filled in Schedule of Financial Quote of Financial Bid and signed Tender drawings. Financial Bids of Technically qualified Bidders will only be opened. Work will be awarded to lowest bidder (L1) based on their quotes after making necessary arithmetical checks.

5. SCOPE & OBJECTIVE

The Objective of the tender is to **Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046** as per the specifications and Bill of quantities mentioned in the Financial Bid.

Period of Completion of Work: 90 days from the date of issue of work order

Defect Liability Period: 12 months from the date of handing over of completed system as per tender.

6. PAYMENT SCHEDULE:

The contractor shall submit the bills for payments along with a detailed statement showing the actual works carried out under different heads of items in the format specified by the TIFR. Minimum value of the work for interim payment (Running Bills) shall be **Rs.15,83,100/-**. All interim (Maximum three Running Bills) and final bills will be settled based on the joint measurements of each item of work and certified by TIFR Engineer. The bills for nonperishable materials on site may also be submitted and the payment by TIFR against the same shall be to the maximum extent of 60% of the value of these materials on production of sufficient documentary evidence ie. Original invoice, Inventory, etc. All interim bills will be paid within **15** days from the date of submission and Final Bill along with all relevant documents will be settled within **30** days from the date of submission with certification of TIFR Engineer.

SECTION-II **ELIGIBILITY CRITERIA FOR TENDER QUALIFICATION**

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.

- **Eligibility criteria:**

1. The Agencies/Contractors shall hold a valid 'A' grade electrical contractor license issued by appropriate authority and must be valid throughout the contractual period
2. The Agencies/Contractors shall hold a valid labour license issued by appropriate authority and must be valid throughout the contractual period.
3. The Agencies/Contractors shall submit a solvency certificate for an amount of Rs. 21.10 Lakhs from a bank.
4. IT Returns for the last three consecutive financial years ended on March 31, 2022 audited by CA.
5. The Agencies/Contractors should have an average annual turnover of Rs.21.10 lakhs during three previous financial years ending March 31, 2022.
6. The Agencies/Contractors shall be in profit for the last three financial years and should have valid PAN from Income Tax Authority, GST registration No. etc. and any other registration applicable/mandatory for contract.
7. The Agencies/Contractors should have executed similar works successfully at least
   - 7.1. One similar work costing Rs.42.21 Lakhs or
   - 7.2. Two similar works costing Rs. 31.66 Lakhs or
   - 7.3. Three similar works costing Rs. 21.10 Lakhs during the last 7 financial years ended on end date of receiving tender for Research Institutes, Universities, Private Laboratories, R & D institutes, etc. in any Government /PSU/Private organizations of repute.

   The Agencies/Contractors should furnish copies of work orders and completion certificates from the clients in support of the above.

Note:

- ❖ Agencies/Contractors should have a full-fledged in-house project management team to undertake the jobs.
- ❖ The Agencies/Contractors shall **strictly furnish** aforesaid information in the formats/schedules given. **Non adherence to furnishing of information in the given format/schedules given will lead to disqualification of tender.**
- ❖ Instructions to Agencies/Contractors for furnishing the information is given as under:
- ➢ Each page of the application shall be signed by a person having necessary authority to do so.
- ➢ If the space in the proforma is insufficient for furnishing full details, such information may be given in separate sheets.
- ➢ Applicants are required to furnish information against each item of the application. In case a certain item is not applicable, please write NA. Application containing incorrect and or inadequate information is liable to be rejected.

SCHEDULE – A

BASIC INFORMATION

1.	Name of the firm	:
2.	a) Address	:
	b) Telephone / Fax No.	:
	c) Mobile No. Contact Person	:
	d) PAN No.	:
	e) GST Registration No.	:
	f) Labour License Details	:
	g) Electrical A grade License Details	:
	h) Branch Office if any in Hyderabad	:
3.	Type of Organization (Proprietorships / Partnership) Ltd. Co. / Co-Operative) (Copy of relevant document to be enclosed)	:
4.	Date of Incorporation	:
5.	Nature of Business	:
6.	Experience as prime Agencies/ Contractors (in Yrs.)	:
7.	Name and address of Bankers	:
8.	Organization chart of the Company including names and positions of directors / key personnel	:

Signature of the Applicant (s)

SCHEDULE – B

Major Internal Electrification works (Copies of the completion certificate to be enclosed)

A. Similar work of costing Rs 42.21 lakhs or two similar works of costing Rs.31.66 lakhs or 3 similar works of costing Rs.21.10 Lakhs during last 7 financial year ending March 31st 2022 for Research Institutes, Universities, Private Laboratories, R & D institutes, etc

Sr.No	Name of the project & Address	Description of work in brief	Name of the Engineer	Name of the client also indicate whether Govt or semi Govt or Pvt body with full postal address	Contract Amount in Rs.	Year of commence ment	Date of Completion		Whether work was left /uncompleted or the contract was terminated from either side? Give Details.	Any other relevant information relevant information
							Stipulated	Actual		
1.										
2.										

B. List of works in progress above Rs. 21.10 lakhs.

Sr No.	Name of the project & Address	Description of work in brief	Name of the Engineer with full postal address.	Name of the Client. Also indicate whether Govt. or semi Govt. or Pvt. Body with full postal address	Contract Amount in (Rs.)	Date of Completion	Present stage of work with reasons if the work is getting delayed	Any other relevant information
1.								
2.								

Signature of the Applicant (s)

SCHEDULE – C

TECHNICAL PERSONNEL & SPECIAL EXPERIENCE

List of technical personnel in your establishment giving details about their technical qualification and experience

Sr No.	Name	Age	Qualifications	Project Experience	Nature of works handled	Name of the project Handled	Date from which employed in your organization	Indicate special experience in Internal Electrification Installation & Testing projects in which were employed
1								
2								

2. Indicate other points if any to show your technical and managerial competency to indicate any important point in your favour.

Signature of the Applicant (s)

SCHEDULE – D

FINANCIAL POSITION AND WORKING RESULTS

				2019-20	2020-21	2021-22
1	Annual turnover	:	Rs.			
2.	Net Profit	:	Rs.			
3.	Credit Facilities from the Bank	:	Rs.			
a)	Cash Credit	:	Rs.			
b)	Overdraft Limit	:	Rs.			
c)	Guarantee	:	Rs.			
d)	Others	:	Rs.			
4.	Certificate from the Bankers regarding financial soundness of the applicant	:	Enclosed (Yes / No)			
5.	Solvency Certificate from the Bankers	:	Enclosed (Yes / No)			

Signature of the Application (s)

SCHEDULE – E
MISCELLANEOUS INFORMATION

1	Whether it would be possible to process Bank Guarantee for various advances during execution of the work.	:
2	Details of Civil Suits / Litigations arised during execution of the contracts in the last 5 years.	:
3	Latest Income Tax Clearance Certificate	:
4	Name of the two senior official of Organizations preferably Govt./Semi Govt/ Autonomous/ Public Sector Organization for whom you have executed important and major Electrical works, who may be directly contracted by TIFR to gather information about your ability, competence and capacity of your work/organization/etc.	:
5	Number of Supplementary sheets attached.	:

Signature of the Applicant (s)

SECTION-III **NOTICE & INSTRUCTIONS**

1. Sealed item rate tenders in the prescribed form are invited from Head-Technical Services, Tata Institute of Fundamental Research, Centre for Interdisciplinary Services, Hyderabad, for the following:

Tender Notice No.	**TIFR/PD/CF22-51/220546**
Name of Work	**Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.**
Estimated Cost	**Rs.52,77,000/-**
Time Limit	**90 days (Completion Period)**
Earnest Money Deposit	**Rs.1,05,540/- (Demand Draft to be drawn in favour of "TIFR Centre for Interdisciplinary Sciences", Payable at Hyderabad (To be enclosed with the Technical Bid Part – I)**
Tender Fee	**Rs.500 (Rupees Five Hundred only)**
Last Date & Time of Submission of Tender	**22-07-2022 by 13:00 Hrs**
Date & Time of Opening of Technical Bid	**22-07-2022 at 15:00 Hrs**

2. Submission of Tender & Opening:

Tenders shall be submitted in a sealed envelope super scribed with Tender enquiry No., Due Date and with heading as **Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046"** containing two separate sealed covers clearly super scribed as "TECHNICAL BID" and "FINANCIAL BID" on or before the closing date and time of submission in the following manner:

"TECHNICAL BID": This will contain the following:

a) Proof of Tender Cost paid already

b) Earnest Money Deposit as stipulated

c) Schedules giving information on Eligibility Criteria with supporting documents specified for tender qualification.

"FINANCIAL BID": Signed copy of the Financial Bid quoting amount in the stipulated format and signed copies of the tender drawings.

5. Acceptance of Tender: The competent authority, on behalf of TIFR, Hyderabad does not bind itself to accept the lowest or any other tender, and reserves to himself the authority to reject any or all the tenders received, without assignment of any reason. All tenders, in which any of the prescribed conditions is not fulfilled or any condition, including that of conditional rebates, is put forth by the tenderer, shall be summarily rejected.

The Competent Authority, on behalf of TIFR, Hyderabad reserves to itself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted. The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest tender or any other tender.

6. Validity of Tender: The tender for the work shall remain open for acceptance for a period of 75 days from the last date of submission of tenders. If any tenderer withdraws his tender before the said period, or before issue of Letter of Intent, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Department, then TIFR, Hyderabad shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money absolutely. Further the tenderer shall not be allowed to participate in the retendering process of the work.

7. Levy / Taxes payable by contractor:

i. GST or any other tax on materials and services in respect of this contract shall be payable by the contractor and TIFR shall not entertain any claim whatsoever in this respect.

ii. The contractor shall deposit royalty and obtain necessary permit as required for supply of the sand, aggregate, stone etc. from local authorities.

8. Deduction of Income Tax : As per Section 194-C of Income tax Act 1961, as amended by letter No. 275/9/72/9-TJ (Circular No. 86) dated 19.5.72 and No. 275/14/91-IT (B) (Circular No. 593) dated 5.2.91, received from Ministry of Finance, Department of Revenue, Central Board of Direct Taxes, New Delhi, the Income tax @ 2% and Surcharge thereon @12% (or any other amended rate by Ministry of Finance from time to time), of the gross value of the work done will be recovered from the bills. A certificate for the amount so recovered will be issued by the Department.

9. Site visit by the tenderer before tendering: Tenderers are advised to inspect and examine the site and its surroundings during working hours and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed.

10. Signing of Tender and receipts for payments: In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power-of-attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act-1952. Receipts for payments made on account of work, when executed by a firm, must also be signed by all the partners, except where contractors are described in their tender as a firm, in which case the receipts must be signed in the name of the firm by one of the partners, or by some other person having due authority to give effectual receipts for the firm.

11. Tenderer's responsibilities: The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that they have read this notice & all other contract documents, and has made himself aware of the scope & specifications of the work to be done and local conditions and factors having a bearing on the execution of the work.

12. Signing of contract: The Notice Inviting Tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of: the Notice Inviting Tender, all the documents including all conditions, specifications and drawings, if any, forms the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

13. Canvassing, either directly or indirectly, in connection with the tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection and may be barred from future participation in TIFR works.

Head-Technical Services

*For and on behalf of **TIFR, Hyderabad***

SECTION-IV **GENERAL CONDITIONS OF CONTRACT**

1. Definition of Terms:

1.1. In constructing these general conditions and the specifications the following works shall have the meanings herein assigned to them unless there is something in the subject or context inconsistent with such construction.

1.2. The `Purchaser' shall mean Tata Institute of Fundamental Research- -Hyderabad, Tata Institute of Fundamental Research, 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District, Hyderabad 500046 and shall include the Purchaser's heirs, successors and assigns.

1.3. The term 'Engineer In-Charge' and `Engineer' shall mean Engineer In-Charge, TIFR-Hyderabad or some other person for the time being or from time to time duly appointed in writing by the Purchaser to act as Engineer In-Charge for the purpose of the Contract or in default of such appointment the Purchaser.

1.4. The term `Contractor'/`Supplier'/`Bidder'/`Vender' shall mean the Bidder whose tender has been accepted by the Owner and shall include the Bidder's heirs, successors and assigns approved by the Purchaser:

1.5. The term `Sub-Contractor' shall mean the firm or persons named in the contract for any art of the work or any person to whom any part of the work has been sublet with the consent in writing of the Engineer In-Charge and shall include his heirs, successors and assigns approved by the Purchaser.

1.6. The Term `Inspector' shall mean any person appointed by or on behalf of the Purchaser to inspect supplies, stores or work under the contract or any person deputed by the Inspector for the purpose.

1.7. The term `Particulars' shall mean, the following :

1.7.1. Specifications

1.7.2. Drawing (ANNEXURE-V)

1.7.3. Sealed Pattern denoting a pattern sealed and signed by the Inspector.

1.7.4. Proprietary make denoting the product of an individual firm.

1.7.5. Any other details governing the construction, manufacture and/or supply as existing for the contract.

1.8. The term `Specification' shall mean the specifications annexed to or issued with these Conditions of Contract.

1.9. The term `Site' shall mean the place or places at which the Equipment is to be delivered or work done by the Contractor; and shall include, where applicable, the lands and buildings upon or in which the works are to be executed and shall also include the place or places at which fabrication and other work is being carried out by the Contractor.

1.10. `Electrical Equipment', `Stores', `Work' or `Works' shall mean and include equipment and materials to be provided and work to be done by the Contractor under the Contract.

1.11. The `Contract' shall mean acceptance of the work order placed on contractor/supplier under section (2) of these conditions and shall include these conditions of Contract, Specifications, Schedule, Drawing, Letter of Intent of the Purchaser and any subsequent amendments mutually agreed upon.

1.12. 'Tests on Completion' shall mean such tests which are prescribed by the specifications or have been mutually agreed to between the Contractor/Supplier and the Purchaser to be made before the equipment is taken over by the Purchaser.

1.13. Writing' shall include any manuscript, typewritten or printed statement under or over signature or seal as the case may be. Words importing `person' shall include firms, companies, corporations and association of individuals whether incorporated or not.

1.14. Words importing singular shall also include plural and vice versa where context requires.

1.15. Bidders are advised to visit and inspect the work-site to make themselves fully conversant with the site conditions and nature of work. Any claim by them after the opening of bids on account of themselves being unaware of any site condition shall not be entertained.

2. Contract

Contractor/Supplier/Manufacturer should send their acceptance letter on receipt of `Letter of Intent' or 'Work Order' or 'Purchase Order' within the stipulated period. On expiry of said period or exorbitant delay in commencing or executing the work, the Purchaser shall not be liable to any claim from the Contractor/ Supplier for work entrusted to and may revoke the contract.

3. Work at Site

3.1. Access to the works shall be allowed only to the Contractor/Supplier, Sub-Contractors or his duly appointed representatives. The Contractor/ Supplier shall not object to the execution of other works by other contractors or tradesmen and shall afford them every facility for execution of their several works simultaneously with his own.

3.2. Work at the Purchaser's premises shall be carried out at such time as the Purchaser may approve but the Purchaser shall give the Contractor/ Supplier all reasonable facilities for the same. The Contractor/Supplier shall provide sufficient fencing, notice boards etc. to guard the works and warn the public.

3.3. The Contractor shall obey Central, Local and State regulations and enactments pertaining to workmen and labour and the Engineer In-Charge shall have the right to enquire into and decide all complaints on such matters. The Contractor should comply with the Minimum Wages Act and should also ensure that safe practices are followed by his people at site.

4. Delays

The Contractor/Supplier shall not be entitled to any compensation for any loss suffered by him on account of delays in commencing or executing the work, whatever the cause for such delays may

be, including delays in procuring Government controlled or other materials and delay in obtaining instructions and decisions from the Engineer In-Charge.

5. Taking Over

The equipment when erected at site shall be deemed to have been taken over by the Purchaser when the Engineer In-Charge will have certified in writing that the equipment has fulfilled the contract conditions.

6. Extension of Time

If the Contractor/Supplier is delayed in the progress of work by changes ordered in the work, or by any cause, which the Engineer In-Charge shall decide to justify the delay, then the time of completion shall be extended by a reasonable time. In this regard, Contractor shall maintain proper hindrance register and record all such events with due signature of E-I-C on occurrence of such instants for seeking extension of time. However, no such extension shall be allowed unless requested for extension is made in writing by the Contractor/Supplier to the Engineer In-Charge within 15 days from the date of occurrence of the delay.

7. Liquidated Damages

7.1. For all delays, which do not merit any extension of time, the Contractor/ Supplier shall attract 1% penalty per week for the first 4 weeks of delay and 2% penalty per week for the next 4 weeks of the total contract value. The amount of liquidated damages shall be recoverable from the payment due to the Contractor/Supplier up to maximum of 10% of value of contract.

7.2. The deduction of liquidated damages shall not, however, absolve the Contractor/Supplier of his responsibility and obligations under the contract to complete the work in its entirety and shall also be without prejudice to action by the Purchaser under clause:

`Termination of Contract by the Purchaser'. After that the same shall be completed by the Purchaser at the Contractor's/Supplier's risk and cost.

8. Other Damages:

8.1. The Contractor/Supplier/Manufacturer shall be responsible for all injury to persons, animals or things and for all damage to the works, structure of, and decorative work in the property which may arise from operation or neglect of himself or any of his Subcontractor or of his or Sub-Contractor's employees, whether such injury or damage may arise from carelessness, accident or any other cause whatever in any way connected with the carrying out of this contract. This clause shall be held to include any damage to buildings, whether immediately adjacent or otherwise, any damage to roads, streets, foot paths, as well as all damage caused to the works forming the subject of this contract by frost or other inclemency of weather. The Contractor/Supplier shall indemnify the Purchaser and hold him harmless in respect of all and any expenses on property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of Government or otherwise and also in respect of any award of compensation or damages consequent upon such claim. Contractor shall furnish necessary insurance documents (Contractor All Risk Policy) taken for the site before commencement of work.

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

8.3. The Contractor/Supplier/Manufacturer shall indemnify the Purchaser against all claims which may be made against the Purchaser, by any member of the public or other party, in respect of anything which may arise in respect of the works or in consequence thereof and shall, at his own expense, effect and maintain, until the work has been 'Taken Over' under clause 5.

8.4. The Contractor/Supplier/Manufacturer shall also indemnify the Purchaser against all claims which may be made upon the Purchaser whether under the Workmen's Compensation Act or any other statute in force during the currency of this contract or at common law in respect of any employee of the Contractor/Supplier or of any of his sub-contractor and shall at his own expense effect and maintain until the work has been `Taken Over', with an approved office. Contractor shall furnish a copy of the labour licence before commencement of work. If the aforesaid are not applicable contractor should furnish declaration to this effect and shall indemnify TIFR-Hyderabad, Hyderabad for violation of any such compliances.

8.5. The Purchaser, with the concurrence of the Engineer In-Charge, shall be at liberty and is hereby empowered to deduct the amount of any damages compensation costs, charges and expenses arising or accruing from or in respect of any such claims or damages from any sums due to or become due to the Contractor/Supplier.

9. Earnest Money Deposit and Performance Guarantee/Security Deposit:

9.1. **Earnest Money Deposit (EMD):** EMD shall be submitted in the form of Demand Draft to be drawn in favour of "TIFR Centre for Interdisciplinary Sciences", Payable at Hyderabad (To be enclosed with the Technical Bid Part-I))

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9.2. **Performance guarantee/Security Deposit:** The tenderer, whose tender is accepted, will be required to furnish a performance guarantee/security deposit of **3% of the tendered amount within 7 (seven) working days from the date of intimation** ie (including adjustment of EMD amount submitted). This guarantee shall be in the form Demand Draft / Pay Order / Banker's cheque / Deposit or Government Securities / Fixed Deposit Receipt (FDR) or Guarantee Bonds (BG) of any Scheduled Bank in accordance with the form as Annexure – II hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to TIFR as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to TIFR to make good the deficit.

9.3. The Performance Guarantee/Security Deposit shall be initially valid up to the stipulated date of completion plus 365 days. The performance guarantee/security deposit shall be returned to the contractor, without any interest, after recording of the completion certificate for the work by the competent authority.

9.4. The Engineer-in-charge shall make a claim under the Performance guarantee/Security Deposit for amounts to whichTIFR entitled under the contract (notwithstanding and / or without prejudice to any other provisions in the contract agreement) in the event of:

9.4.1. Failure to attend and rectify the problems in the guarantee period, in which event the Engineer- in-charge may claim the full amount of the Performance guarantee/Security Deposit.

9.4.2. Failure by the contractor to pay TIFR, Hyderabad any amount due, either as agreed by the contractor or determined under any of the Clauses / Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-charge.

9.5. In the event of the contract being determined under provisions of any of the relevant clauses of the agreement, the performance guarantee/security deposit shall stand forfeited in full and shall be absolutely at the disposal of TIFR, Hyderabad.

10. Guarantee and Defects Liability Period:

10.1. The Contractor/Supplier/Manufacturer shall guarantee that all equipment shall be free from any defect due to the defective materials and bad workmanship and that the equipment shall operate satisfactorily and that the performance and efficiencies of the equipment shall be not less than the guaranteed values. The guarantee shall be valid for a period of 12 months after the date of commissioning as certified by the Engineer In-Charge. Any parts found defective shall be replaced free of all costs by the Contractor/Supplier. The services of the Contractor's/Supplier's personnel if requisitioned during this period for such work shall be made available free of any cost to the Purchaser.

10.2. If the defects be not remedied within a reasonable time, the Purchaser may proceed to do so at the Contractor's/Supplier's risk and expense without prejudice to any other rights.

11. Terms of Payment

The contractor will be paid only 3 Running Account (RA) Bills and Final Bill considering the progress of works based on measurement of works completed. The contractor shall submit the bills for payments along with a detailed statement showing the actual works carried out under different heads of items in the format specified by TIFR-, Hyderabad. Minimum value of the work for interim payment shall be Rs.15,80,000/-.

BILL FORMAT

Tender Item	Description of Item (At least 2 lines)	Unit	Tender Qty	Executed Qty	Rate	% work done	Amount

NOTE: All quantities in the bill should be cumulative.

All measurements should be in the order of tender sequence and should be recorded in the measurement book.The Measurement should be strictly in the below mentioned format only.

MEASUREMENT FORMAT

Tender Item	Description of Item & Locati against each Measurement taken	Nos.	Length	Breadth /width	Height	Qty.	Remarks

The works which have been certified for running bills will also be verified along with the final bill and any defects found need to be replaced / rectified by the contractor at his cost. Till the time, the site is handed over in full, it is the contractor's liability to safeguard the works done and completed at site. The Progress of work should not be affected in any way quoting the reason of non-availability of funds / materials / releasing of Running bill. The liability of the contractor is to complete all works in his scope in the scheduled time as per the terms of contract and will not relieve the contractors from his obligations once the Running bill is paid / kept pending.

Final Payment

Payments of Final bill shall be made after deduction of Performance guarantee as specified. The Security Deposit / Performance guarantee, shall be refunded on expiry of the Defects Liability Period after rectifying all defects to the satisfaction of the TIFR-Hyderabad/E.I.C. The acceptance of payment of the final bill by the Contractor would indicate that he would have no further claim in respect of the work executed.

12. Special conditions of Contract governing supplies of the Equipment of this Tender:

12.1. **Scope:**

12.1.1. This specification covers the supply of material as per the enclosed details and quantities and supervision of erection/installation, testing and commissioning of the material.

12.1.2. The Contractor/Manufacturer/Supplier shall quote for all the materials along with accessories as mentioned in the enquiry.

12.1.3. All the supply shall be in accordance with relevant I.S. Specifications and recognized standards.

12.2. **Inspection & Testing of Material:**

12.2.1. Contractor/Manufacturer/Supplier shall submit the lists of Type Tests and Routine Tests to be conducted on the material in the Technical Data Sheet.

12.2.2. All the materials shall be tested at factory as per IS Specifications of material by Purchaser's Engineer In-Charge/Engineers before dispatch at the cost of Contractor/Manufacturer/Supplier.

12.2.3. Contractor/Manufacturer/Supplier shall inform the concerned Engineer In-Charge for inspection and testing in accordance and fix up a suitable date for the same.

12.3. **Test Certificates:**

Contractor/Manufacturer/Supplier shall submit the Test Certificates of all materials.

12.4. **Delivery of Material:**

12.4.1. The Contractor/Manufacturer/Supplier shall arrange for safe transit and shall be held responsible for loading of all equipment and for the stores being sufficiently and properly packed for transport by rail, road, sea or air so as to ensure their being free from any loss or damage on arrival at destination. The packing and marking of packages shall be done by and at the expenses of Manufacturer/Supplier. Each package shall contain a packing note quoting purchase order number and detail of the contents.

12.4.2. All the materials must be delivered at site i.e. Hyderabad - TIFR at 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District, Hyderabad-500046. The unloading and positioning of all equipment at the designated locations specified by the Engineer In-Charge shall be in the scope of the Supplier. The Supplier shall arrange for handling equipment, labour for rigging, etc. as required.

12.4.3. Material must be delivered at site in all respects as mentioned in the Purchase Order.

12.4.4. Contractor shall arrange necessary storerooms and security at site to store materials. TIFR shall not be responsible for any missing/theft of materials at site.

12.5. **Guarantee:**

If during the period of guarantee any fault or defect arises, the material shall be replaced/repaired immediately free of cost, as well as any replacement of accessories required shall be done free of cost.

12.6. **Mistake in Drawing:**

The Contractor/Supplier shall be responsible for and shall pay for any alterations in works due to any discrepancies, errors or omissions the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Purchaser or not.

12.7. **Responsibility for Completeness:**

Any fittings or accessories which may not be specifically mentioned in the specifications but which are usual or necessary are to be provided by the Contractor/Supplier without extra charge and the equipment must be complete in all details.

12.8. **Extra/Deviation items & Variations in quantity**

TIFR-Hyderabad has the right to omit/delete any of the items and also increase/decrease the quantities mentioned in the tender. No claim or any compensation in this regard will be accepted or paid to the contractor. However, if any new /additional items/deviated items are to be executed, the contractor is bound to execute such items with prior approval from TIFR-Hyderabad after furnishing the proper rate analysis for such extra/deviated items

12.9. **Rejection of Defective Equipment:**

12.9.1. If the equipment after the acceptance thereof is discovered to be defective, notwithstanding that such defects could have been discovered at the time of inspection or found to have failed to fulfill the requirements of the contract or developed defects after the erection within a period of 12 months from the date of erection, even if such erection is done by the Purchaser, he shall be entitled to give a notice on the Contractor/Supplier setting forth details of such defects or failure and the Contractor/Supplier shall, provided such notice is given within a period of 14 months from the date of such erection or acceptance, forthwith make the defective equipment good or alter the same to make it comply with the requirements of the contract at his own cost and further if in the opinion of the Purchaser, the defects are of such a nature that the defects cannot be made good or required without impairing the efficiency or workability of the equipment or if in the opinion of the Purchaser the Equipment cannot be repaired or altered to make it comply with the requirements of the Contract, the Contractor/Supplier shall, provided a notice given by the Purchaser in this behalf within a period of 14 months from the date of erection or acceptance thereof, remove and replace the same with the equipment conforming to the stipulated particulars, in all respects at the Contractor's/Supplier's own cost. Should he fail to do so within a reasonable time, the Purchaser may reject and replace, at the cost of the Contractor/Supplier, with equipment of the same particulars or if equipment conforming to the stipulated particulars are not in the opinion of the Purchaser readily procurable, such opinion being final, then with the nearest substitutes.

12.9.2. In the event of such rejection the Purchaser shall be entitled to use the Equipment in a reasonable and proper manner for a time reasonably sufficient to enable him to obtain replacement equipment as herein before provided.

12.10. **Inspection and Final Tests:**

All tests necessary to ensure that the Equipment complies with the particulars and guarantee shall be carried out at such place or places as may be determined by the Inspector. Should, however, it be necessary for the final test as to performance or guarantee to be held over until the Equipment is erected at site they shall be carried out within one month of completion of erection.

12.11. **Intimation about Delivery:**

If the Purchaser shall have notified the Contractor/Supplier in writing that the former is not ready to take delivery, no equipment or materials shall be forwarded until an intimation in writing shall have been given to the Contractor/Supplier by the Purchaser that he is ready to take delivery.

12.12. **Delay in erection:**

Wherever erection of an equipment or machinery is the responsibility of the Contractor/Supplier as a term of the contract and in case the Contractor fails to carry out the erection as and when called upon as to do within the period specified by the Purchaser, the Purchaser shall have right to get the erection done through any source of his choice. In such an event, the Contractor/Supplier shall be liable to bear any additional expenditure that the Purchaser may incur towards erection. The Contractor/Supplier shall, however not be entitled to any gain due to such an action by the Purchaser.

12.13. **Definition of Equipment:**

The work `Equipment' wherever, it appears in these `Special Conditions of Contract' governing supplier of Equipment in this Tender shall mean all switchgears, panels, etc. or parts thereof or what the Contractor/Supplier agrees to supply under Contract as specified in the work order.

12.14. **Force Majeure:**

Normally Force Majeure shall cover only acts of God, fire, wars, strike, riots and civil commotion, floods, epidemic, quarantine related strikes, freight embargoes, etc. The contractor shall not be liable for any liquidated damages for delay or any failure to perform the contract arising out of Force Majeure conditions, provided that the contractor shall within ten days from the beginning of such delay notify the department in writing the cause of delay along with convincing supporting evidence. The department once convinced and accepted the reason may extend the supply completion period by a suitable / reasonable margin.

12.15. **Termination of Contract by the Purchaser:**

12.15.1. If the Contractor/Supplier commits any `Act of Insolvency' or shall be adjudged an Insolvent or shall have an order for compulsory winding up made against him or pass effective resolution for winding up voluntarily, or if the Contractor/Supplier shall suffer

any payment under this contract to be attached by or on behalf of any of the creditors of the Contractor/ Supplier, or shall assign the Contract without the prior consent in writing of the Engineer In-Charge, or shall charge or encumber this Contract or any payments due or which may become due to the Contractor/Supplier there under, or if the Engineer In-Charge shall certify in writing to the Purchaser that the Contractor/Supplier –

12.15.1.1. has abandoned the Contract, or

12.15.1.2. has failed to commence the works, or has without any lawful excuse these conditions suspended the progress of the works for seven days after receiving from the Engineer In-Charge written notice to proceed, or

12.15.1.3. has failed to proceed with the work with such due diligence and failed to make such due progress as would enable the works to be completed in accordance with the approved programme of work,, or

12.15.1.4. has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Engineer In-Charge written notice that the said materials or work were condemned and rejected by the Engineer In-Charge under these conditions, or

12.15.1.5. has neglected or failed persistently to observe and perform all or any of the acts matters or things by this contract to be observed and performed by the Contractor for seven days after written notice shall have been given to the Contractor/ Supplier requiring the Contractor/Supplier to observe or perform the same, or

12.15.1.6. has to the detriment of good workmanship or in defiance of the Engineer In-Charge's instructions to the contrary sub-let any part of the contract, then and in any of the above said causes, the Purchaser with the written consent of the Engineer In-Charge may, notwithstanding any previous waiver, after giving seven days' notice in writing under the provisions of this clause to the Contractor/Supplier, determine the contract but without prejudice to the powers of the Engineer In- Charge or the obligations and liabilities of the Contract, the whole of which shall continue to be in force as if the contract has not been so determined and as if the work subsequently executed has been executed by and on behalf of the Contractor/ Supplier.

12.15.2. After the issue of such notice, the Contractor/Supplier shall not be at liberty to remove from site any equipment, tools and materials belonging to him which shall have been placed thereon for the purpose of the works and the Purchaser shall have lien upon such equipment, tools or materials to subsist from the date of such notice and until the notice shall have been complied with.

12.15.3. If the Contractor/Supplier shall fail to comply with the requirements of said notice for seven days after such notice has been given, the Purchaser shall have the power to

enter upon and take possession of the works and site and all equipment, tools and materials thereon, and to engage any other person, firm or agency to complete the works, utilizing the equipment, tools and materials to the extent possible. The Purchaser shall not in any way be responsible for damage or loss of the tools, equipment and materials and the Contractor/Supplier shall not have any compensation therefore.

12.15.4. Upon completion of the works, the Engineer In-Charge shall certify the amount of expenditure properly incurred consequent on and incidental to the default of the Contractor/Supplier as aforesaid and such amount shall be deducted from the payments due to the Contractor/Supplier, including the Security Deposit. If the said amount exceeds the payment due to the Contractor/Supplier, the Purchaser shall be at liberty to dispose off any of the Contractor's/Supplier's materials, tools or equipment and apply the proceeds for the payments due from the Contractor/Supplier and recover the balance by process of law.

12.15.5. After the works have been completed after the amounts due to the Contractor/Supplier, the Engineer In- Charge shall give notice in writing to the Contractor/Supplier to remove the surplus equipment and material from site. If such equipment and materials are not removed within a period of 14 days after such notice, the Purchaser shall have the power to remove and sell the same holding the proceed less the cost of removal and sale, to the credit of the Contractor/Supplier. The Purchaser shall not be responsible for any loss sustained by the Contractor/Supplier from the sale of the equipment and material.

13. Contractor's Representative:

13.1. The Contractor/Supplier shall employ at least one qualified representative (ie. Electrical supervisory License with minimum 3 years of experience of similar works as stipulated by TIFR-Hyderabad in the work order) whose name shall have previously been communicated in writing to the Engineer In-Charge and approved by him to supervise the erection. Any written order or instructions given to the representative shall be deemed to have been given to the Contractor/Supplier. The Engineer In-Charge shall be at liberty to object to any particular representative/or any persons employed by the Contractor/Supplier on the work and the Contractor/Supplier shall remove the person objected to, on the receipt of the Engineer In-Charge, in writing, a request requiring him to do so and shall provide in his place another competent representative acceptable to the Engineer In-Charge.

13.2. The Contractor's/Supplier's representative shall be a qualified electrical/ mechanical engineer possessing adequate site experience in similar nature of works.

14. Completion Time:

Unless otherwise agreed in writing between the Purchaser and the Contractor/Supplier, the work contract shall be completed within the stipulated period mentioned elsewhere in this tender document from the date of Work/Purchase Order issued to Contractor/Supplier by the Purchaser.

15. Measurements:

All joint measurements of quantities shall be done by the Contractor at his own cost in the presence of the Engineer In-Charge or any authorized person deputed by him who will certify the routes, length and quantities etc. for the purpose of determination of the amount payable.

16. Spare Parts & Manuals:

Manufacturer/Contractor/Supplier should submit operation, maintenance and spare part list and manuals for all equipment.

17. Training:

Manufacturer/Contractor/Supplier should provide training for operation and maintenance free of cost for equipment supplied.

18. Special Instruction for bidding process

This tender is a two part tender. The Part-I: Technical Bid and Part-II: Financial Bid. Bidders shall seal each bid separately with a clear label on the envelope about its content. Both the bids should be submitted in a single drop two cover method. Any pricing details must not appear in the Part-I: Technical Bid.

19. Drawings and Documentation:

As-built drawings as specified in this technical specifications shall be submitted by the Contractor.

20. Permissions and Approvals:

All statutory permissions and approvals from Electricity authority as may be required for commissioning of the entire system shall be carried out by the contractor. All necessary documentation for obtaining such permissions and approvals shall be done by the contractor. Purchaser shall assist in providing required declarations. Statutory fees shall be paid by the purchaser.

21. Guarantee:

The equipment shall be guaranteed against all design and manufacturing defects, poor workmanship etc. for a period of 12 months from the date of commissioning or 18 months from the date of supply, whichever is earlier. Any defects discovered during this period shall be rectified by the vendor free of cost to the purchaser.

SECTION-V **TECHNICAL SPECIFICATIONS**

5.1 Scope of Works

5.1.1 Supply, Installation, Testing and Commissioning of 1.1KV grade armoured/unarmoured XLPE/PVC LT cables in ground/wall/false ceiling to draw power from MV panel to DBs and DBs to individual rooms, and circuits for power & lighting.

5.1.2 Supply, Installation, Testing and Commissioning of VTPN/TPN distribution Boards and MCCB & MCBs as per the drawings to distribute the power to hostel rooms and other circuits.

5.1.3 Supply, Installation, Testing and Commissioning of LED light fixtures to maintain the required lux level in hostel rooms & other common areas.

5.1.4 Supply, Installation, Testing and Commissioning of sub energy meters, Tag Key switch and Switch boards in hostel rooms.

5.1.5 **Other Works:** All other civil works which might not have been specifically mentioned in the specifications and in the Schedule of quantities but are essential for operational requirements of the entire system shall be in the scope of work. Bidder shall specifically bring out such items in Technical bid and submit quote in separate sheet along with the Financial Bid.

INTERNAL ELECTRIFICATION

Scope:

This specification is intended to cover the requirements of supply, installation, testing and commissioning of electrical wiring installation and other accessories required for its satisfactory operation. This covers the essential requirements or precautions regarding wiring installations for ensuring satisfactory and reliable service.

Standards:

The Electrical wiring installations and other accessories shall comply with latest IS: 732 - 1989 and National Electrical code – 1985 and to the latest amendments from time to time.

Construction:

Wall mounted switch boards shall be installed such that the bottom is at a minimum height of 1.35 m above finished floor level wherever applicable, as indicated in the drawing. Equipment which is on the front of a switch board shall be so arranged that inadvertent personnel contact with live parts is unlikely during the manipulation of switches, changing of fuses or similar operation.

In every case in which switches and fuses are fitted on the same pole, these fuses, shall be so arranged that the fuses are not live when their respective switches are in 'OFF' position.

No fuses other than fuses in instrument circuit shall be fixed on the back or behind a switch board 32 panel or frame.

Capacity of circuit:

Lighting Circuits shall not have more than a total of ten points of fans, 5A socket outlets and light points and its total load shall not exceed 800 watts. Lights, fans, and 5A socket outlets can be wired on a single common circuit. If fan circuit is drawn separately, circuit shall not be used more than eight points and load shall not exceed more than 800 watts. In the circuit, the neutral and earth wires can be looped up to 10points. From distribution boards Neutral & Earth wires shall be run for every circuit.

The power circuits shall not have more than two outlets per circuit if load to be fed by each outlet is less than 1KW, and if load is more than 2KW, each outlet shall be connected to a separate circuit.

Switches:

All switches shall be placed in the live conductor of the circuit and no single pole switch or fuse shall be inserted in the earth or earthed neutral conductor of the circuits. Single pole switches (other than for multiple control) carrying not more than 15 amperes may be of the piano flush type and the switch shall be 'ON' When the knob is down. Lamp holders : Lamp holders for use on brackets and the like shall have not less than 1.3 cm nipple and all those for use with flexible pendant shall be provided with cord grips. All lamp holders shall be provided with shade carriers. Where centre contact Edison screw lamp holders are used, the outer or screw contact shall be connected to the 'middle wire' or the neutral or to the earthed conductor of the circuit.

Lamps:

All incandescent lamps, unless otherwise specified shall be hung at a height of not less than 2.5 m above the finished floor level.

Ceiling rose:

a). A ceiling rose or any other similar attachment shall not be used on circuit, the voltage of which normally exceeds 250 volts.

A ceiling rose shall not embody fuse terminals as an integral part of it.

Every socket outlet shall be controlled by a switch. The switch controlling the socket shall be on the ‘live’ side of side line.5 Amps and 15 Amps socket-outlet shall normally be fixed at any convenient place 60 cm above the floor level or near such level as indicated in drawing. 15 Amps socket outlets

in kitchen shall be fixed at convenient place 23cm above the working platform. In a room containing a fixed bath or shower, there shall be no socket outlet and there shall be no provision for connecting a portable appliance.

Recessed PVC conduit wiring system

a) Making of chase : The chase in the wall shall neatly be made and shall be of suitable dimension to permit the conduit to be fixed in the manner desired by the Engineer-in- charge. In the case of buildings under construction, chases shall be provided in the wall, ceiling, etc. at the time of their construction and shall be filled up neatly after erection of conduit and brought to the original finish of the wall.

b) Fixing of conduit in chase: The conduit shall be fixed by means of staples or by means of saddles not more than 600 mm apart. Fixing of standard bends or elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a long radius which will permit easy drawing-in of conductors. All the threaded joints of rigid steel conduits shall be treated with approved preservative compound to ensure protection against rust.

c) Inspection boxes : To permit periodical inspection and to facilitate replacement of wires, suitable inspection boxes shall be provided at convenient locations. They shall be mounted in flush with the wall. The minimum size of inspection boxes shall be 75 x 75 mm. Suitable ventilating holes shall be provided in the inspection box covers.

d) Types of accessories to be used: All outlets, such as switches and sockets, may be either of flush mounting type or of surface mounting type. The switches and other outlets shall be mounted on such boxes. The metal box shall be efficiently earthed with the earth continuity wire run along the conduit.When crossing through expansion joints in buildings, the conduit sections across the joint may be through flexible copper bellows of the same 33 size as PVC conduit. The Number of wires that can be drawn through a conduit shall be strictly as per IS 732 and as mentioned in Drawings.

TESTING OF WIRING:

The following tests shall be carried out on all types of wiring on completion of the work and before energizing the installation:

i) Insulation resistance test,
ii) Electrical continuity test,
iii) Earth continuity test,
iv) Earth electrode resistance test,
v) Switch polarity test.

i) Insulation Resistance test: The insulation resistance shall be measured by using 500 v megger between the following points. Phase and neutral conductor with all fuses in position and all switches in closed condition and main switch in OFF position with lamps and other devices removed. Between earth and whole system of conductors with all fuses in place, all switches closed and all lamps in position. Between all conductors connected to one phase of the supply of the above tests shall not be less than 50 divided by the number of points on the circuit. Where a whole installation is being tested, a lower value than that given by the above formula is acceptable subject to a minimum of one mega ohm.

The insulation resistance in mega ohm as obtained by each of the above tests shall not be less than 50 divided by the number of points on the circuit. Where a whole installation is being tested, a lower value than that given by the above formula is acceptable subject to a minimum of one mega ohm.

(ii) Electrical continuity test: Each and every circuit shall be tested for electrical continuity by using a multimeter.

(iii) Earth continuity test: The earth continuity conductor including metal conduit shall be tested for electrical continuity and the resistance of the same along with the earthing lead measured from the connection with the earth electrode to any point in the earth continuity conductor in the complete installation shall not exceed one ohm.

iv) Earth electrode resistance test: The earth electrode resistance shall be tested as specified in section

(v).Switch polarity test: Test shall be made to verify that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be marked for connection to the phase conductor.

Distribution Boards:

All the distribution boards shall be with MCBs as described in the respective schedule. The distribution boards shall be controlled by a switch fuse, miniature circuit beaker or an isolator as described in the respective schedule. Each outgoing circuit shall be provided either with MCB or a fuse on the phase. The neutral shall be connected to a common link and be capable of being disconnected individually for testing purposes. 34 The distribution boards shall be located as indicated in the respective electrical working drawings and as directed by Engineer - in - charge. The distribution boards shall be fixed on wall in the niche provided and marked with the details of circuits, source of supply, size of incoming wires Etc., All marking shall be clear and legible. The total load of the consuming devices shall be evenly distributed between the numbers of ways of distribution board. The consuming devices circuit shall be connected to distribution board in proper sequence, so as to avoid unnecessary crossing of wires. Cables shall be connected to a terminal only by crimped lugs. Cables shall be rigidly fixed in such a manner that a clearance of at least 2.5cm is maintained between conductors of opposite polarity or phase and between the conductors and any material other than insulating material. The incoming and outgoing cables shall be neatly bunched.

MOUNTING HEIGHTS: The Mounting heights of various fixtures shall be as specified in the Drawings. 10.Flexible conduits are strictly not envisaged, only industrial type GI Bind flexible conduit shall be used in a spot where the conduits and bends cannot be possible to run.

L. T. CABLES:

All power and distribution cables shall be 1100V grade, PVC / XLPE insulated and sheathed, armoured/unarmoured, multistrand aluminium conductor/ copper conductor cables unless otherwise specified. All control cables shall be 1100V grade PVC insulated and sheathed unarmoured multi-strand copper conductor cables unless otherwise specified. The cables shall confirm to IS 1554-1988 & IS 7098:1988 with up to date amendments. Type test certificates of the cables from manufacturers for the particular drums shall be provided.Shop inspection shall be offered for routine tests if specifically asked for.

LAYING:

- The cables shall be thoroughly inspected for transit damage and irregularity in sheath etc.
- Sufficient manpower with necessary equipment like jacks, rollers shall be provided for
- unwinding and laying the cables and dragging and twisting shall be avoided. Proper
- unwinding methods shall be used to avoid twists & cable should be meggered before starting laying.
- Cables shall be laid at a depth of at least 750mm from ground level with 50mm sand bedding, brick box with cushion for protection. Bending radius provision of at least 12 D shall be kept while laying. The trenches shall be filled and reinstated layer by layer leaving a crown on top.
- H.T. and L.T. cables shall not be laid in same trench. When more than one cable is laid in same trench a gap of at least 150mm shall be kept between the cables.
- Cables laid on walls; trenches shall be supported at every 600mm for vertical run and every 450mm for horizontal run. Suitable clamps shall be provided for fixing and support. Vertical runs near ground level shall be protected by GI Pipes of suitable size up to the height of at least 1200 mm.
- The length of the cables in schedule will be approximate and actual site measurements shall be taken by contractor prior to cutting any cable.
- Cable identification tags shall be provided at appropriate location throughout length of cables and at both ends.

JOINTING:

Jointing or end termination of cables shall be done by skilled person only. Straight through joints shall be avoided as far as possible. Heavy-duty compression type brass glands shall be used for all connections. Crimping type lugs with suitable brass/Chrome Plated hardware shall be provided for connections.

The cables on panel side are connected to bus bars Cu or Al, Care should be taken to avoid heating & corrosion at the joints. All LT cable joints in outdoor and humid atmospheres shall be done with double compression glands only / if done by Single compression Gland should be accommodated by PVC HOOD Of Appropriate size.

TESTING:

Cables shall be meggered as soon as they are brought to site. Insulation resistance shall also be tested.

a) After cutting.

b) After laying and preparing the joint.

Following test shall be taken after completing the installation.

a) Cable continuity.

b) Earth continuity.

c) Insulation resistance.

1000V megger shall be used for testing 3 phase 415 Volt systems. All HT cables shall be pressure tested after making the end joints at site. Insulation resistance tests shall be done by 5000V megger for all H.T. Cables.

CABLE ROUTE MARKER: Cable route marker shall oval shaped cast iron of minimum 150 mm length. The voltage levels shall be specifically marked on cable route markers. The cable route marker shall have 20 mm GI pipe or 20 x 20 x 3 mm MS angle support of suitable length grouted in 150 x 150 x 150 mm 1:3:6 concrete block buried in ground.

POINT WIRING

CONDUITS; ACCESSORIES & JOINTS:

All conduits unless otherwise specified shall be hot dip galvanized ERW steel conduits 16SWG up to 25mm dia and 14SWG above 25mm dia size. All conduit accessories shall be screwed type and conduits shall be joined by means of threaded couplings only. Check nuts shall be provided at all joints for tightening and sealing. Ends of conduits shall be free from burs sharp edges. All threaded portions shall be cleaned of any oil and shall be coated with plastic adhesive. All M.S conduits and accessories if used shall be painted with 2 coats of Red Oxide before installation and accessible parts of conducting after installation shall be painted with enamel paint to match the wall paint. Capacity of conduits is separately given. In case of rigid FRPVC conduits, the conduits shall be at least 2.0mm thick. The accessories shall be similar quality. The joints shall be made using special adhesives used for pressure pipe joints.

SURFACE CONDUITING:

The surface conduits shall be fixed with help of 20 SWG saddles on spacers at every 600mm for vertical run and every 450 mm for horizontal run. The runs shall be straight with pull boxes and inspection type bends as required. Contractors are required to provide suitable sleeves for structural member crossing at the time of casting. No elbows shall be allowed.

In case of false ceilings the conduits shall run on walls/trusses/slabs above false ceiling level as far as possible. The connections between such runs and fixtures shall be made with flexible conduits.

CONCEALED CONDUITING:

The concealed conduit work shall be carried out along with construction of walls prior to plaster. The work covers chasing walls with wall cutters only if necessary fixing the conduits, boxes, and accessories, redoing the damaged surface using chicken mesh. All horizontal conduit runs shall be straight at wall point light level to necessary junction/pull boxes and then straight vertical drop to switch box if necessary.

The conduits shall be laid such that they are little below the brick level to avoid cracks. Elbow shall not be used and bends shall be avoided as far as possible using offsets. Pull boxes shall be provided at suitable locations. All necessary sleeves shall be provided in beams, columns, and prior to casting. Deep junction boxes only shall be used in slabs.

The pull and junction boxes shall not be clustered at one place and shall be so arranged that they should not be easily seen from heavy movement areas. All cases shall be taken to secure joints and boxes in place. All vertical runs shall be sealed at top, while masonry civil works going on. Conduit with 25mm dia. minimum shall be used for all concealed work. Generally in areas with false ceiling conduits will not be concealed in slab but will be concealed below false ceiling area. Conduits above false ceiling in such cases shall run with proper supports / suspenders. Conduits shall not be rested on false ceiling grid in any case. Flexible conduits shall not be used in concealed work.

SWITCH BOARDS :

The switchboards shall be readymade modular type metal boxes of approved makes as per attached list with all sides knockouts except top. Top plate fixing arrangement shall be provided at all corners with tapped holes. At least 1No. earth stud shall be provided. Switchboard shall be at-least 50mm deep. M.S. Switch board shall be painted with 2coats of Red Oxide primer from inside and outside if not plated or galvanized. In case of surface mounted boards switchboards shall be powder coated with necessary treatment. The switch plate shall be 2mm thick while phenol-bonded sheet unless specified and shall be fixed with chrome-plated screws with cap washers. For modular switch range switch boxes shall be of same make. Metal boxes shall be used for concealed wiring where as ABS

plastic/Polyurethane boxes shall be used for surface mounting. Suitable readymade boxes & plates only shall be used.

SWITCHES & SOCKETS:

All 5/15 A switches shall be modular/fancy type 240 V grade of approved colour and of same shade throughout. 5A Sockets shall be 3pin & 15AMP Sockets shall be 5 pin (Universal).

All switches shall be provided on phase wires only. For power points more than 20AMP capacity 20/30AMP flush type DP Switches shall be provided, unless other wise specified.

All workstation sockets shall be universal multifunction.

WIRES & WIRING INSTALLATION:

All wiring shall be carried out with Non PVC / ZHLS 1100V grade multistrand copper conductor wires of specified sizes. The conduits shall be ventilated and drained before drawing the wires. The circuit wires shall be laid in looped formation with suitable termination arrangement in junction boxes. T joints shall be used. No joints shall be allowed in drawn lengths. Crimping type lugs shall be used for switch interconnections. Colour codes shall be followed. Separate earth wire of same class and suitable size shall be drawn along with other wires. Mains and sub-mains shall be drawn in separate conduit of adequate capacities with separate earth wires. All circuit wires shall be meggered for continuity and insulation resistance.

WIRING CLASSIFICATION:

General wiring requirement for points unless otherwise specified in BOQ /Drawing shall be as listed below:

Lighting Sub mains	2 x 2.5 + 1 x 1.5 sq. mm wires
Light / Fan / 5A / ExFan Pts.	2 x 1.5 + 1 x 1.5 sq. mm wires
Call Bell.	
15A Point	2 x 2.5 + 1 x 1.5 sq. mm wires
As above but Looped	2 x 4.0 + 1 x 2.5 sq. mm up to1st Point. 2 x 2.5 + 1 x 1.5 sq. mm for Looped Point.
1.5 Tonne window A/c & 20A Power Point	2 x 4.0 + 1 x 2.5 sq. mm wires
Window A/c 2.0 Tonne, Geyser & 30 AMP Pts.	2 x 6.0 + 1 x 2.5 sq. mm wires

CONDUIT CAPACITIES:

WIRE SIZE	1.5	2.5	4.0	6.0	10.0
CONDUIT SIZE (GI ERW)					
19/20 mm	7	4	3	----	----
25 mm	10	8	6	5	----
32 mm	18	14	12	8	4
40 mm	---	---	---	10	8

No. of wires in respective size of conduits shall not exceed capacities given.

Capacities as given for conduit runs with pull boxes at not more than 4.25 mtrs. and deflection not more than 15 - 20% reduction shall be applied for conduit runs with deflection more than 15-20% additional wires shall be allowed in the same size FRPVC conduits.

MOUNTING HEIGHTS (ABOVE FFL):

The general recommended heights for Points as given below:

a)	Light Points on Walls	2250 mm. (Center)
b)	Switch boards DB's	1200 mm. (Bottom)
c)	Socket outlets	1200 mm / 300 mm. (Bottom) / 800 mm at Work Station
d)	Telephone Sockets	300 mm. (Bottom) / 800 mm (bottom) at work stations
e)	Geyser outlets	1800 mm. (Bottom) / Switch on Nearest switch Board.
f)	Exhaust fan outlet	Switch at 1200 mm Socket near Ex fan,
g)	A/c Point	window seal/Near A/c Equipment.

Contractor shall refer specific point schedules and architects drawings for exact lights of Points.

POINT DEFINITIONS:

1. All points shall include necessary circuit mains from distribution boards up to switch boards as specified, point wiring up to points locations from switchboard, switch, switch sockets & boxes with switch plates as specified, Connector, ceiling rose or brass light holder as required at point location.
2. The circuit mains will not be separately measured in any case.
3. The points will not be distinguished as primary / secondary or short / long points. Generally 2 ceiling light points will be controlled by one switch in open areas and one light point will be controlled by individual switches in small rooms, cabins, toilets unless otherwise specified. Individual switches will control all wall light points.
4. Points controlled directly from the MCB DB by MCB shall be identified separately.
5. Call bell points shall include call bell either dual tone or musical.
6. A/C points unless otherwise specified shall be with 20A Industrial sockets & SPMCB in A readymade box near the A/C location on left side.
7. Fan point unless otherwise specified shall include electronic step control regulator with RF filter and fan box / fan fixing arrangement.
8. Any socket outlet separated by minimum 1.0 mtrs. From the nearest switchboard shall be considered an independent socket outlet.
9. All power / A/C, Geyser points shall include wiring from the MCB DB's and no separate mains shall be measured for these points.
10. In case of multiple sockets on an independent socket board one socket point will be
11. considered as independent points and other sockets as points on switchboard.

GENERAL & CODES

All the supply and work shall be in accordance with the relevant I.S. Specification and recognized standards and modern approved practice and shall meet the requirement of the latest issue of applicable codes, factory rates and regulations, supply codes and all standard accepted practice in locality where the installation is to be made.

All the materials and accessories provided by Contractor under terms of this contract shall conform to the relevant Indian Standard Specifications. Samples of all equipment, materials and accessories to be supplied by the Contractor shall be submitted for the approval of the Engineer before they are supplied and used.

Contractor shall provide all necessary labour, tools, and other requisite work like drilling, cutting, welding etc. at his own cost.

Good workmanship is the essence of this contract and shall be complied with at all time. The Contractor shall have the works supervised by qualified and experienced engineers. All the defects pointed out by the engineer shall be rectified immediately by the Contractor free of cost.

The installation shall generally be carried out strictly in conformity with the requirement of latest edition of the Indian Electricity Act, 1910 as amended and the Indian Electricity Rules, 1956 framed there under and all others statutory regulations that may be relevant to the installation

No alteration which may affect the structures and architecture of building shall be done without the prior approval of the engineer. All work shall be carried out in such a manner that it should not cause any inconvenience to other works which are under progress. The Contractor shall cooperate with other agencies in the area for the smooth execution of all works.

Accidental damage to any property shall be reported immediately to site engineers and letter confirmed in writing.

The equipment shall comply with the requirement of latest revision of following standard issued by BIS (Bureau of Indian Standards), unless otherwise specified.

EARTHING & LIGHTNING PROTECTION

IS : 3043 – 1987 Code of practice for earthing.
IS : 2309 – 1989 Code of practice for Protection of buildings and allied structures against lightning.

LOW VOLTAGE SWITCHGEAR & PANELS

IS : 8623 – 1993 Specification for low voltage switchgear and control gear assemblies
IS : 10118-1982 Code of practices for selection, installation and maintenance of switchgear and control gear.
IS : 12063-1987 Classification of degrees of protection provided by enclosures of electrical equipment.
IS :7752-1975 Guide for improvement of power factor in consumer installation
IS : 12360-1988 Voltage bands for electrical installations including preferred voltages and frequency.
IS : 2147 – 1962 Degrees of Protection provided by enclosures for low voltage switchgear and control gear.
IS : 3070-1993 Metal oxide surge arrestors with gaps for AC system.
IS :13947-1993 L.V. Switchgears and control gears
IS:13032-1991 Miniature circuit breaker boards for voltage upto and including 1000 volts A.C.

IS:13925-1998 Shunt capacitors for ac power systems having a rated voltage above 1000V.
IS:12729-2004 Common specification for high voltage switchgear & controlgear standards.
IS:1293-2005 Plug & socket outlets for house hold & similar purposes.
IS:4160-2005 Interlocking switch socket outlets –specification
IS:60309-2002 Plug socket –outlets & couplers industrial purposes.

CABLE

IS:12943-1990 Brass glands for PVC cables.
IS:1255-1983 Code practice for installation and maintenance of power cables upto and including 33kV rating.
IS:10418-1982 Drums for electric cables.
IS:7098-1988 Cross linked polyethylene insulated PVC sheathed cables.
IS:1554-1988 PVC insulated (heavy duty) electric cables.
IS:694-1990 PVC insulated (heavy duty) electric cables

INTERNAL (POINT WIRING, FAN, FIXTURES)

IS : 4648 – 1968 Guide for electrical layout in Residential buildings.
IS : 732 - 1989 Code of practice for electrical wiring installations.
IS:6665-1972 Code of practice for industrial lighting
IS : 2268 – 1994 Electrical appliances electrical call bells and buzzers for indoor use.
IS : 3646-1992 Code of Practice for interior illumination
IS :11037-1984 Electronic type fan regulators.
IS:9537-1980 Conduits for electrical installation
IS:14768-2000 Conduits fittings for electrical installations general requirements.
IS: 14927-2001 Cable trunking & ducting systems for electrical installations
IS : 1913 - 1978 General and safety requirement for luminaries
IS:3528-1966 Water proof electric lighting fitting
IS:1944-1970 Code of practice for lighting of public thorough fare

OTHER CODES

SP30-1985 National Electrical code (Fourth Reprint 1998)
NBC-2008 National Building Code First Reprint 2006
ECBC 2009 Energy Conservation Building Code

GENERAL

SP : 31-1986 Chart and treatment for electrical wiring installations.
IS : 2551 – 1982 Danger notice plates.
IS : 5216 - 1982 Guide for safety procedures and practices in Electrical work

Site/Climate Conditions:

The Equipment shall be suitable for installation and satisfactory continuous operation in a sub-station in a generally hot and humid atmosphere. The equipment shall be designed to operate continuous under site condition as specified below.

Location	: Hyderabad
Max. ambient air temperature,	: 50 ^{0}C
Min. ambient air temperature,	: 10 ^{0}C
Max. average daily ambient air temp.,	: 40 ^{0}C
Max. yearly weighed average ambient temp,	: 32 ^{0}C
Max. relative humidity, %	: 95%
Average Annual rainfall, mm	: 800 mm
Max. altitude above mean sea level (Meters)	: 540 m

Completeness of work:

Contractor shall include and provide all necessary materials and labour for completing the job in approved manner following all applicable standards and code of practices.

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SECTION-VI **LIST OF MAKES**

LIST OF APPROVED MAKES

S.No	Item Description	Approved Makes
1	LT Cables	Poly Cab/ Universal/Havells/KEI/ Equivalent Approved
2	Brass Cable Gland	Dowells/Crompton/Bico/Siemens/Commet/ Equivalent Approved
3	PVC Glands	Peeco,/ Commet,/ Dowells's/ Equivalent Approved
4	Cu Lugs	Peeco/, Commet, /Dowells's/ Equivalent Approved
5	Distribution Boards	Legrand/Schneider/Hager/ Equivalent Approved
6	MS Enclosure	Legrand/Schneider/Hager/ Equivalent Approved
7	MCB	Legrand/Schneider/Hager/ Equivalent Approved
8	MCCB	Legrand/Schneider/Hager/Equivalent Approved
9	UPVC Trunking	Legrand/MK/Hager/Equivalent Approved
10	Cu strip	99% Electrolyte Copper
11	LED lights	Phillips/Havells/Wipro/ Equivalent Approved
12	Industrial Sockets	Legrand/Schnider/Hager/ Equivalent Approved
13	Switches & Sockets	Legrand/MK/Equivalent Approved
14	PVC Conduits	Sudhakar/Equivalent Approved
15	Electrical Geyser	Havells/Crompton/Hindware/ Equivalent Approved
16	KWh Sub Energy Meter	HPL/L&T/Equivalent Approved
17	2 module 32A DP switch with Key Ring	GM/ Equivalent Approved
18	Ceiling Fans	Crompton/Havells/Equivalent Approved
19	All other items not covered above	AS PER SAMPLES APPROVED

SECTION-VII **ANNEXURES**

ANNEXURE-I

FORM OF PERFORMANCE GUARANTEE (BY BANK GUARANTEE)

1. In consideration of the TIFR-Hyderabad, Hyderabad having agreed under the terms and conditions of Letter of Intent / Agreement No……. dated..... made between and……..…… (Here in after..... called " the said Contractor{s}") .for the work ……..……. (Here in after called "the said Letter of Intent / Agreement") having agreed to production of a irrevocable bank Guarantee for Rs..... (Rupees …….. only), as a security / guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement, we ……..……..(Indicate the name of Bank) (hereinafter referred to as "the Bank") Here by undertake to pay to TIFR an amount not exceeding Rs. ……..... (Rs only) on demand by TIFR.

2. We..... (indicate the name of Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from TIFR stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs…… (Rupees..... only).

3. We, the said bank, further undertake to pay to TIFR any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Contractor(s) shall have no claim against us for making such payment.

4. We (indicate the name of Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of TIFR under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-charge on behalf of the TIFR certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5. We (indicate the name of Bank) further agree with TIFR that TIFR shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by TIFR against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of TIFR or any indulgence by TIFR to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

7. We,..... (indicate the name of Bank) lastly undertake not to revoke this guarantee except with the previous consent of TIFR in writing.

8. This guarantee shall be valid up to ....., unless extended on demand. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs (Rupees ……..……. only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Signed and sealed

Dated the ……..... day of……..…… for..... (indicate the name of Bank)

***(Note: The Letter of Intent shall form part of the Agreement)**

ANNEXURE II

UNDERTAKING BY THE TENDERER

I / We have read and examined the Tender document including terms & conditions, specifications, Schedule of quantities, drawings and designs, general rules & directions, General Conditions of Contract, Special Conditions of Contract and all relevant other documents, publications and rules referred to in the Conditions of Contract and all other contents in the tender documents for the work.

I / We, hereby tender for execution of the work specified for the TIFR-Hyderabad, Hyderabad within the time specified and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

We agree to keep the tender open for seventy five (75) days from the last date of its submission and not to make any modifications in its terms and conditions. A sum of Rs..... ……has been deposited in cash / receipt treasury challan / deposit at call receipt of scheduled bank / fixed deposit receipt of scheduled bank / demand draft of a scheduled bank / Bank Guarantee issued by a Scheduled Bank as earnest money. If I / we, fail to furnish the prescribed performance guarantee within prescribed period, I / we agree that the said TIFR-Hyderabad, Hyderabad or its authorized officer shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / we fail to commence work as specified, I / we agree that the TIFR-Hyderabad, Hyderabad shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by TIFR- Hyderabad, Hyderabad towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein.

Further, I / We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

I / We hereby declare that I / We shall treat the tender documents, drawings and other records connected with the work as secret / confidential documents and shall not communicate information derived there-from to any person other than a person to whom I / We am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Seal & Signature of Contractor Postal Address

Dated

Witness

Address Occupation

ANNEXURE-III

CERTIFICATE OF LOCAL CONTENT

***We [name of manufacturer] hereby confirm in respect of quoted item(s) that local Content is equal to or more than 50% and come under 'Class-I Local Supplier' Category. As being 'Class-I Local Supplier', we are eligible for Purchase Preference under 'Make in India' Policy vide GoI Order No.P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019 and 04.06.2020)**

OR

***We [name of manufacturer] hereby confirm in respect of quoted items(s) that Local Content is more than 20% but less than 50% and come under 'Class-II Local Supplier' Category.**

The details of the location (s) at which the local value addition made is / are under:

1. ……

2. ……

Date: **Seal & Signature of the Bidder**

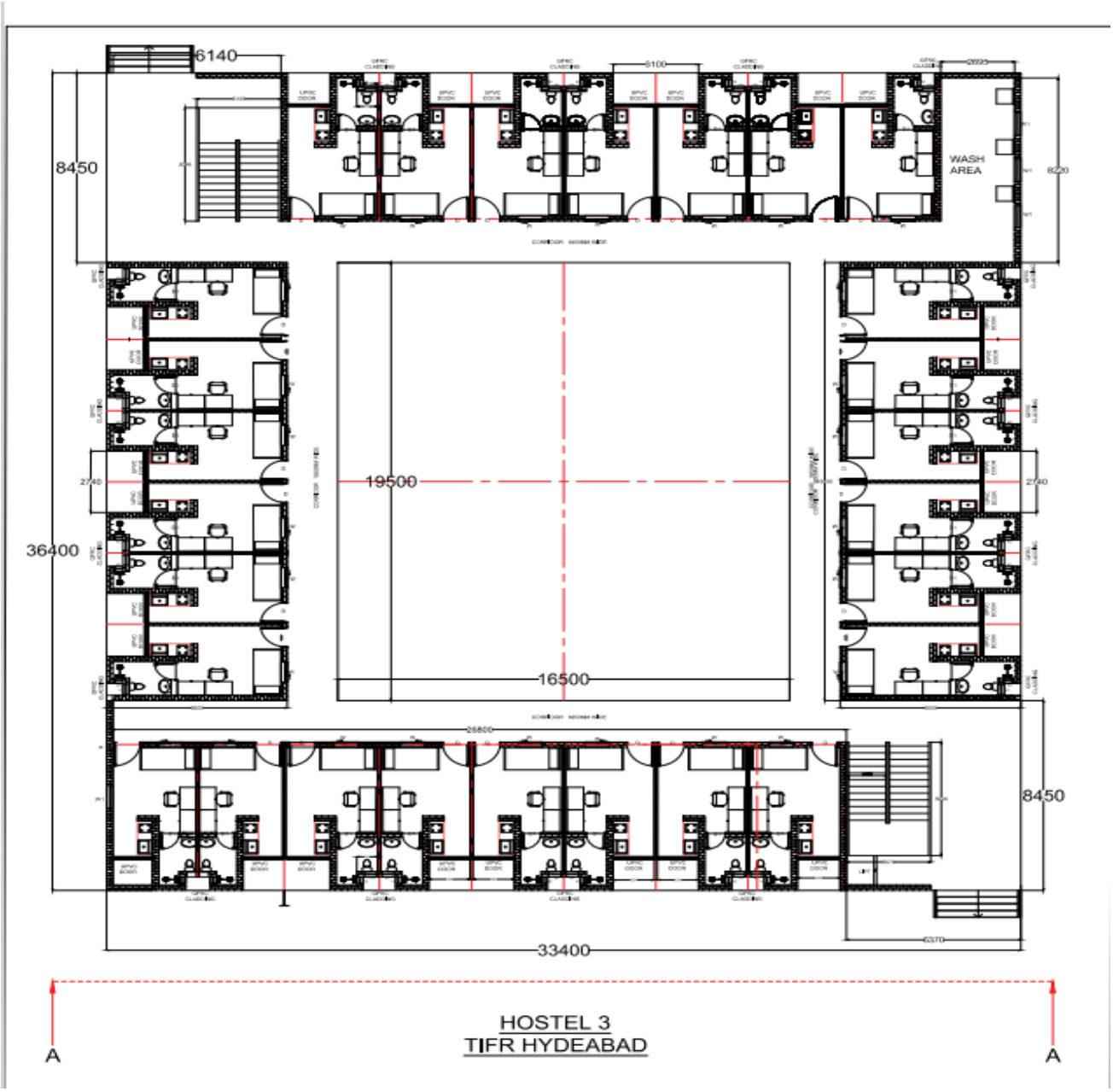
NOTE:

Self-certification that the item offered meets the minimum local content (as above) giving details of the location(s) at which the local value addition is made in case the bidder wishes to avail the benefits under the make in India policy, if applicable.

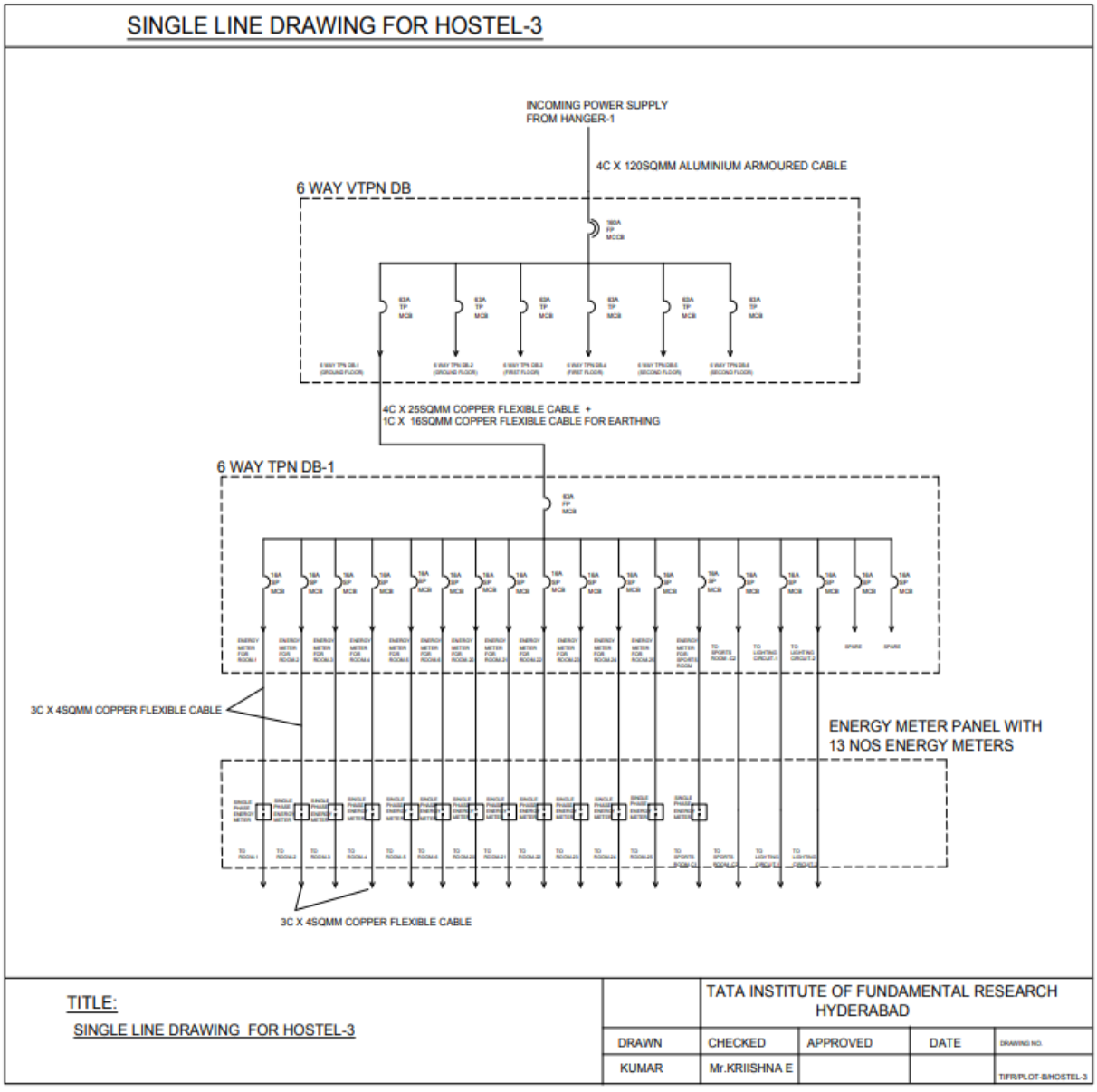
In cases of procurement for a value in excess of Rs.10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content to avail the benefits under the make in India policy, if applicable.

ANNEXURE-IV

FLOOR LAYOUT FOR HOSTEL BLOCK-III



SLD FOR HOSTEL POWER DISTRIBUTION



SECTION-VI	FINANCIAL BID

INVITATION OF BIDS FOR

Supply, Installation, Testing and Commissioning of Internal Electrification and other related works for Hostel Block-III, at TIFR, Plot-B, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046.

PART II

FINANCIAL BID

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
(Autonomous Institution of the Department of Atomic Energy, Government of India)
Survey No.36/P, Gopanpally Village, Serilingampally Mandal,Ranga Reddy District,
Hyderabad-500046, Telangana

SCHEDULE OF QUANTITIES

Sl. No.	Item Description	Unit	Qty (A)	Supply Rate/Unit (B)	Amount for Supply (C) = AXB	Installation Rate/Unit (D)	Amount for Installation (E)=AXD	Total (F)=C+E
1	Supply and laying of 300mm Dia, NP-2 Class Hume Pipes direct in ground with suitable Collars to join the pipes properly and as per the instructions of Engineer In Charge (E.I.C)	Mtrs	60					
2	Excavation/digging of cable trench of size: 0.6 Meter wide × 0.9 Meter depth for approximately 500Meters length (i.e. +/- 15% variation) at a site, in the earth of soil or soft/hard murum or rock as encountered during the excavation work and backfilling the trench with the excavated material, dewatering, consolidation, disposal of excess earth and making good to the original finish etc., as per the Engineer In Charge.	CUM	270					
3	Supply, Laying, Testing and Commissioning of one number of 1.1 KV grade 4C X 120 sq.mm , Al conductor, XLPE insulated, Armoured power cable direct in ground including sand cushioning, protective covering etc as required and as per site conditions and as per instructions of Engineer In Charge.	Mtrs	500					
4	Supplying and making end termination with brass compression gland and aluminium lugs for 1.1 KV grade 4C X 120 sq.mm , Al conductor, XLPE insulated, Armoured power cable mentioned in Sr. No.3	Set	4					

5	Supply, laying, testing & commissioning of 4C X 25 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments & as per technical specifications. Cable shall be laid on the wall/ceiling through PVC conduits and as per the instructions of E.I.C. Make: Polycab/Havells/Finolex/RR Cables	Mtrs	310					
6	Supply, Installation of suitable single compression PVC Gland, Copper Lugs and accessories for termination of cable mentioned in Sr. No.5 in the Distribution Board.	Set	12					
7	Supply, laying, termination, testing & commissioning of 1C X 16 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments & as per technical specifications & as per the instructions of E.I.C. Cable shall be laid on the wall/ceiling and rates are all inclusive of accessories like clamps. screws, saddles, etc required to lay on wall/ceiling Make: Polycab/Havells/Finolex/RR Cables"	Mtrs	200					
8	Supply, laying, termination, testing & commissioning of 3C X 4 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for Lighting circuits and laying on existing Concealed PVC Conduit on wall or False ceiling including suitable copper lugs for termination in DBs Make:Polycab/Havells/Finolex/RR Cables`	Mtrs	2690					
9	Supply, laying, termination, testing & commissioning of 3C X 2.5 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for power & lighting circuits and laying on existing Concealed PVC Conduit on wall or False ceiling including suitable copper lugs for termination in DBs Make:Polycab/Havells/Finolex/RR Cables	Mtrs	3600					

10	Supply, laying, termination, testing & commissioning of 3C X 1.5 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for Lighting circuits and laying on existing Concealed PVC Conduit on wall or False ceiling. Make:Polycab/Havells/Finolex/RR Cables	Mtrs	4260					
11	Supply, installation , testing & commissioning of 6Way Ready Made VTPN Distribution Board along with 25KA, 415V, 160A Thermal Magnetic MCCB-1 No. as incomer including Spreader links and C type 415V, 63A TP MCBs- 6 No.s as outgoing. Distribution Board shall be surface/recess mounting , made of sheet steel, dust protected ,duly powder painted and double door type. VTPN DB shall have the provision of 250A Copper Busbar for each phase, 2 neutral bars and 2 earth bars. VTPN DB shall be IP43 and as per IEC 61439-3.VTPN DB shall be equivalent to Legrand Catalogue No. 5077 46, MCCB shall be equivalent to Legrand Catalogue No. 4200 57 and MCB shall be equivalent to Legrand Catalogue No. 4086 61. (Make : Legrand/ ABB/ Siemens /equivalent approved)	Set	1					
12	Supply, installation , testing & commissioning of 6Way Ready Made TPN Distribution Boards shall be surface/recess mounting vertical/horizontal type , 415 volts TPN MCB for Incoming, distribution board of sheet steel, dust protected ,duly powder painted, inclusive of 100 amps tinned copper interconnections with appropriate capacity size of PVC insulated copper conductor wires (ISI marked) suitable for mounting necessary isolators /MCBs/ELCBs etc., and suitable for concealed mounting /wall mounting with M.S enclosure fabricated out of min 18 SWG/20 SWG thick M.S CRCA sheet as per manufacturers standard, with concealed hinged door locking arrangement etc., including earthing clamps ,common neutral	Nos	6					

	link, earth bar, din bar for mounting MCB's (but without MCB's) as required as per IS:13032 and IEC 60647-2 equivalent to Legrand Cat No.5076 71 (Make : Legrand/ ABB/ Siemens /equivalent approved)							
13	Supply, installation , testing & commissioning of ISI Marked and accepted standard of 63A, FP Miniature Circuit Breaker (MCB) of 'C' series suitable for 240/415 Volts AC , 50Hz, 10kA confirming to IS: 8828 : 1996, IEC: 60898-1 : 2002. MCBs and Distribution Boards should be the same make only. (Make:Legrand/ABB/Siemens/Schneider/Equivalent approved) (Equivalent to Legrand Catalog No. 4087 02	Nos	6					
14	Supply, installation , testing & commissioning of ISI Marked and accepted standard of 6-32A SP Miniature Circuit Breaker (MCB) of 'C' series suitable for 240/415 Volts AC , 50Hz, 10kA confirming to IS: 8828 : 1996, IEC: 60898 : 2002. MCBs and Distribution Boards should be the same make only. approved (Make: Legrand/ABB/Siemens/Schneider/Equivalent to Legrand Catalog No. 4085 87 to 4085 95)	Nos	120					
15	Supply, Installation, Testing & Commissioning of 1200 mm (48 inch) Energy Efficient, High Speed Ceiling Fan with BLDC Motor without Remote type and required accessories, suitable Extension metal pipe to fix on ceiling hook including Ceiling Hook, etc. as per instruction of Engineer In Charge & as per site conditions Specifications: 1200 mm (48 inch),370 RPM, 220-240V AC, 50Hz Make:Crompton/Havells/Equivalent Approved. (Equivalent to M/s.Crompton High Speed Model No.Energion Riviera BLDC motor without Remote)	Nos	81					

16	Supply , Fixing, Testing and Commissioning of 6 modular switch board (16A Sockets -2No, & 20/16A Switches -2Nos Indicator type) with suitable Metal flush Box and cover plates with interconnections. Switch Boards shall be concealed on the wall. (Make: Legrand /MK/ Equivalent to M/s. Legrand Catalogue No. 5734 71 & 5720 63)	Set	195					
17	Supply , Fixing, Testing and Commissioning of 3 modular switch board (16A Sockets -1No, & 20/16A Switches -1Nos Indicator type) with suitable Metal flush Box and cover plates with interconnections. Switch Boards shall be concealed on the wall. (Make: Legrand /MK/ Equivalent to M/s. Legrand Catalogue No. 5734 71 & 5720 63)	Set	81					
18	Supply , Fixing, Testing and Commissioning of 3 modular switch board (6A Switches -2No, & 20/16A Switches -1Nos Indicator type) with suitable Metal flush Box and cover plates with interconnections. Switch Boards shall be concealed on the wall. (Make: Legrand /MK/ Equivalent to M/s. Legrand Catalogue No. 5734 00 & 5720 63)	Set	81					
19	Supply , Fixing, Testing and Commissioning of 3 modular switch board (6A Switches -3No) with suitable Metal flush Box and cover plates with interconnections. Switch Boards shall be concealed on the wall. (Make: Legrand /MK/ Equivalent to M/s. Legrand Catalogue No. 5734 00)	Set	84					
20	Supply, installation, testing & commissioning of 32A DP Tag switch-1 No, Fan Regulator Stepless -1No & 10A 1 way switches-3Nos including 6 module modular plate and Metal flush box Make: GM/ Equivalent Approved	Nos	81					

21	Supply, installation, testing & commissioning of 75W LED Flood lights System efficacy :110 lm/W CCT: 5700K IP rating: IP66 Input Voltage : 140-270V. Necessary mounting arrangements like welding to be arranged as per site conditions. Make: Phillips/Wipro/Havells (Equivalent to M/s. Phillips Catalogue No. BVP192 LED82 CW NB FG GR PSU)	Nos	2					
22	Supply, Installation, Testing & Commissioning of LED 36W T Batten Light - 4 Feet. Initial LED luminaire efficacy : 100 lm/W Init. Corr. Color Temperature : 6500 K Make: Phillips/Wipro/Havells (Equivalent to M/s. Phillips Catalogue No. BN 021 LED40S PSU GR)	Nos	81					
23	Supply, Installation, Testing & Commissioning of LED 10W Batten Light set 2Feet. Initial LED luminaire efficacy : 100 lm/W Init. Corr. Color Temperature : 6500 K Make: Phillips/Wipro/Havells/Equivalent to Phillips catalogue No. BN012C LED10/CW L600 G2)	Nos	162					
24	Supply, Installation, Testing & Commissioning of LED 9W Down Light set suitable to ceiling mounting.Initial luminous flux (system flux) :1000 lm Initial LED luminaire efficacy : 110 lm/W Init. Corr. Color Temperature : 6500 K Make: Phillips/Wipro/Havells (Equivalent to M/s. Phillips Catalogue No. DN295B LED10S-6500 PSU WH)	Nos	171					
25	Supply, Installation, Testing & Commissioning of 4W LED step light (Foot Lamp) including suitable 4 module metal flush box to mount the step light. Make: Phillips/Wipro/Havells (Equivalent to M/s.Legrand Skirt Light)	Nos	81					

26	Supply and Installation of LED Strip Light of length 17 Mtrs with Drive. Make : Wipro	Set	2					
27	Supply and Installation of 3W LED Spot light. Colour: Warm White Recessed Ceiling mounted. Make : Philips	Nos	8					
28	Supply and laying and fixing of 32 mm Heavy Duty PVC conduit (Black Colour) of ISI marked, laying in wall including **cost of chipping of wall to conceal the pipe and plastering work with smooth finishing** including required accessories like Bends Junction Boxes Make: Sudhakar/Equivalent Approved)	Mtrs	2640					
29	Supply and laying and fixing of 25 mm Heavy Duty PVC conduit (Black Colour) of ISI marked, laying in wall including **cost of chipping of wall to conceal the pipe and plastering work with smooth finishing** including required accessories like Bends Junction Boxes Make: Sudhakar/Equivalent Approved)	Mtrs	2075					
30	Design, Manufacture, supply, installation, testing & commissioning of Wall mounting Energy Metering Panel including 14Nos KWH Energy Meters and shall be front operated, front access, cubicle panel totally enclosed, dust and vermin proof with IP- 42 protection with hinged and lockable doors (double door system). Panel shall be fabricated from 2 mm thick CRCA sheets suitable for use at 230V, 1 phase 3 wire 50 Hz system, and complete as per specifications, as required . The Terminal Links to be provided at top for connecting Energy meter incoming & outgoing cables and wiring to be done from Engery meter to Terminal links with 4sqmm flexible wire to connecting Energy meter incoming & outgoing cables and as required. Final painting of panel to be done with powder coating and as per site conditions & as per instructions of Engineer In Charge. KWh Sub Energy Meter Details: Meter shall be Single Phase, 5-30A	Nos	6					

	and Class 1 accuracy.Make: HPL/L&T/Equivalent Approved (Equivalent to M/s. HPL Catalogue No. SPEM 02)							
31	Supply and Installation 150mmx110mmx70mm Terminal Junction Box including suitable 30Amps rated 6 way Terminal Connector.	Nos	81					
32	Supply, Fabrication of MS Flat/ MS Angle for Support of Cables & PVC Conduits and applying of Red oxide & Synthetic Enamel paint and any touchup work if required and as per site condtion	Kgs	150					
	Sub Total							
	GST @ 18%							
	Grand Total Supply & Installation in Rs.							
	Grand Total in words Rs……..only							

Note:	
1	**Rates are all inclusive of profit, packing & forwarding, Transport, loading & unloading, labour and Taxes, Etc.**
2	**TIFR, Hyderabad has right to delete any of above items from scope of work or may increase/reduce quantities as per its requirement during execution of work. No claim or compensation for such deletion/increase/decrease will be accepted/paid to the contractor. Payment will be made as per actual quantities executed at tender rates**
3	**Manufacturer's warranty of respective supply items to be provided.**
4	**For any above item quantity exceeding more than 10% of projected qty, contractor shall take prior approval from TIFR Engineer In charge in writing.**
5	**For any deviating items, the contractor shall take prior approval from TIFR Engineer In charge with proper rate analysis.**