



टाटा मूलभूत अनुसंधान संस्थान हैदराबाद /
TATA INSTITUTE OF FUNDAMENTAL RESEARCH HYDERABAD

परमाणु ऊर्जा विभाग की स्वायत्त संस्था, भारत सरकार
Autonomous Institution of the Department of Atomic Energy, Government of India

सर्वेक्षण सं. 36/पी, गोपानपल्ली गांव, सेरिलिंगमपल्ली मंडल, रंगारेड्डी जिला, हैदराबाद - ५०० ०४६, तेलंगाना।
Survey No.36/P, Gopanpally village, Serilingampally Mdl., Rangareddy Dist., Hyderabad - 500 046, Telangana.

टेलीफोन / Telephone: +91-40-2020-3010

ई-मेल / Email: rajasekharr@tifrh.res.in

वेबसाइट / Website : www.tifrh.res.in

तिथि / Date: 28.07.2026

NOTICE INVITING TENDER

निम्नलिखित कार्यों के लिए निविदा सह निविदा दस्तावेज (दो भाग सार्वजनिक निविदा) आमंत्रित करने की सूचना /
Notice Inviting Tender cum Tender Document (Two Part Public Tender) for the following works

Turnkey Works for Setting up of Student Sitting Space in Trishul Building First Floor at TIFR, Hyderabad	
निविदा सं. / Tender No.	TIFR/PD/CF26-59/260499
प्रकाशन की तिथि / Date of Publishing	28.07.2026
निविदा का प्रकार / Type of Tender	Two Bid System (Part-I: Technical cum eligibility Bid and Part-II: Financial Bid)
अनुमानित लागत / Estimated Cost	Rs.45,38,508/- (Inclusive of GST)
Location	Tata Institute of Fundamental Research 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District, Hyderabad 500046
ईएमडी की लागत / Cost of EMD (Earnest Money Deposit)	Rs.90,770/- (डिमांड ड्राफ्ट "टीआईएफआर सेंटर फॉर इंटरडिसिप्लिनरी साइंसेस" के पक्ष में तैयार किया जाना है, जो हैदराबाद में देय है (तकनीकी बोली भाग - I के साथ संलग्न किया जाना है)।" / Rs.90,770/- (Demand Draft to be drawn in favor of "Tata Institute of Fundamental Research Hyderabad", Payable at Hyderabad. (To be enclosed with the Technical Bid Part – I).

बोली-पूर्व बैठक की तिथि और समय / Pre-Bid Conference: (a) Date & Time: (b) Zoom Link (c) Venue:	03.08.2026 at 11:00 Hrs. For Pre-bid conference Zoom link, check TIFRH webpage-Tenders- TIFR/PD/CF26-59/260499 TIFR, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046. Phone: 040-2020-3001
निविदा प्रस्तुत करने की अंतिम तिथि / Last Date for Submission of Tender	11.08.2026 by 13:00 Hrs.
बोली खोलने की तिथि (केवल भाग-I: तकनीकी बिड) / Date of Opening Bids (Only Part-I: Technical Bid)	11.08.2026 by 15:00 Hrs.

टिप्पणी / NOTE:

- प्रतिष्ठित अनुसंधान संस्थानों, विश्वविद्यालयों, केंद्र सरकार / सार्वजनिक क्षेत्र के उपक्रम, निजी प्रयोगशालाओं, बहुराष्ट्रीय कंपनियों आदि में समान कार्य अनुभव रखने वाले ठेकेदारों से उपर्युक्त कार्यों के लिए सीलबंद ऑइटम दर निविदाएं आमंत्रित की जाती हैं। इच्छुक ठेकेदार जो टीआईएफआर, हैदराबाद द्वारा निर्धारित पात्रता मानदंडों को पूरा करते हैं, केवल अपनी बोलियां प्रस्तुत करेंगे। /
 Sealed Item Rate Tenders are invited for the aforementioned 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 eligibility criteria stipulated by TIFR, Hyderabad shall only submit their bids.
- तकनीकी सह पात्रता बोली (भाग-I) और वित्तीय बोली (भाग-II) दोनों को बोलीदाता द्वारा अलग-अलग लिफाफों में विधिवत रूप से लिखा हुआ सीलबंद किया जाना चाहिए और इन दोनों सीलबंद लिफाफों को एक बड़े लिफाफे में रखा जाना चाहिए, जिसे भी सीलबंद किया जाना चाहिए और उस पर निविदा संख्या, विवरण और नियत तारीख लिखी होनी चाहिए। /
 Both Technical cum eligibility Bid (Part-I) and Financial Bid (Part-II) should be sealed by the bidder in separate envelopes duly super-scribed and both these sealed covers are to be put in a bigger envelope which should also be sealed and duly super-scribed with the Tender No., Description and Due Date.
- यदि “भाग-I” और “भाग-II” बोलियां अलग-अलग लिफाफों में सीलबंद नहीं की जाती हैं तो निविदा अस्वीकार कर दी जाएगी। / In case, the “Part-I” and “Part-II” bids are not sealed in separate envelopes, the tender shall be rejected.

- तकनीकी बोली में मूल्य का कोई संकेत नहीं होना चाहिए। / Technical bid should not contain any indication of the price.
- बिना ईएमडी/अपर्याप्त ईएमडी के साथ प्राप्त तकनीकी बोली को सरसरी तौर पर अस्वीकार कर दिया जाएगा। / The Technical Bid received without EMD/with Insufficient EMD shall be summarily rejected.
- हाथ से डिलीवरी/कूरियर द्वारा भेजी गई बोलियां, टीआईएफआर, हैदराबाद सुरक्षा कार्यालय के सुरक्षा कर्मचारियों से मुहर, तारीख और हस्ताक्षर प्राप्त करने के बाद उन्हें सौंप दी जानी चाहिए। / Bids sent by hand delivery/courier are to be handed over to the security staff at TIFR, Hyderabad security office after obtaining stamp, date and signature from them.
- निविदा में उल्लिखित किसी भी तकनीकी या वाणिज्यिक शर्तों के स्पष्टीकरण के लिए श्री कृष्णा ए ई, टेलीफोन: **040-2020-3009**, ई-मेल: krishnaae@tifrh.res.in से संपर्क करें। / Contact Mr. **Krishna A. E.**, Tel: **040-2020-3009**, Email Id: krishnaae@tifrh.res.in for any technical or commercial terms clarifications mentioned in the tender.
- बोलियाँ प्रमुख, तकनीकी सेवाएँ, प्लॉट संख्या 36/पी, गोपनपल्ली गाँव, सेरिलिंगमपल्ली मंडल, रंगा रेड्डी जिला, हैदराबाद- ५०० ०४६, तेलंगाना, भारत को संबोधित की जानी चाहिए। / The Bids should be addressed to Head, Technical Services, Plot No.36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District. Hyderabad- 500 046, Telangana, India.
- भविष्य में सभी शुद्धिपत्र/परिशिष्ट टीआईएफआर हैदराबाद वेबसाइट/सीपीपी पोर्टल पर प्रकाशित किए जाएंगे और इसके लिए कोई अलग विज्ञापन जारी नहीं किया जाएगा। सभी संभावित बोलीदाताओं से अनुरोध है कि वे ऐसे किसी भी अपडेट/शुद्धिपत्र के लिए नियमित रूप से हमारी वेबसाइट देखें। / All future corrigendum/addendum will be published on TIFR Hyderabad website / CPP portal and no separate advertisement will be released for the same. All prospective bidders are requested to visit our website regularly for any such updates/corrigendum.
- कृपया संलग्न बोली दस्तावेज देखें जिसमें विनिर्देश, निष्पादित की जाने वाली विभिन्न प्रकार की वस्तुओं की मात्रा की अनुसूची और अनुबंध की शर्तों का पालन किया जाना तथा अन्य आवश्यक दस्तावेज शामिल हैं जिन्हें टीआईएफआरएच वेबसाइट / सीपीपी पोर्टल से भी देखा और डाउनलोड किया जा सकता है। / Please see the attached bid document consisting of specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents which can also be seen and downloaded from TIFRH website / CPP portal.
- निविदा प्रस्तुत करने की अंतिम तिथि 11.08.2026 को 13:00 बजे तक है। / Last date for submission of the tender is 11.08.2026 by 13:00 Hrs.



प्रमुख, तकनीकी सेवा विभाग /
Head, Technical Services Dept.
टीआईएफआर, हैदराबाद / **TIFR, Hyderabad.**

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CHAPTER-I INFORMATION AND INSTRUCTIONS TO BIDDERS

1. INTRODUCTION: The Tata Institute of Fundamental Research (TIFR) 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.

Webpage: <https://www.tifrh.res.in>

2. DEFINITION OF TERMS: In constituting these general conditions and the annexed specifications, the following words shall have the meanings herein assigned to them unless there is something in the subject or context inconsistent with such construction.

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

2.2. The term 'Engineer' and 'Engineer-in-Charge' shall mean Engineer-in-Charge, TIFR, Hyderabad or such other officers as may be duly authorized and appointed in writing by the TIFR, Hyderabad to act as Engineer-in-Charge for the purposes of the Contract.

2.3. The term 'Bidder' shall mean any individual or organization that submits a proposal or offer in response to the invitation to tender for participating in a Tender Process.

2.4. The term "Contractor or Supplier" shall mean the tenderer whose tender has been accepted by the TIFR, Hyderabad for award of contract and shall include such tenderer's heirs, successors and assigns approved by the TIFR, Hyderabad.

2.5. The term 'Sub-Contractor' shall mean the firm or person other than the contractor named in the contract for any part of the work or any person to whom any part of the work has been sublet by the contractor with the consent in writing of the Engineer-in-Charge and shall include such person's heirs, successors and assigns approved by the TIFR, Hyderabad.

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

2.7. The term 'Particulars' shall mean, the following:

2.7.1. Specifications

2.7.2. Drawing

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

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

2.7.5. Any other details governing the construction, manufacture and/or supply as

existing for the contract.

2.8. The term 'Specifications' shall mean the specifications annexed to or issued with these Conditions of Contract.

2.9. The term 'Site' shall mean the whole of the premises, buildings and grounds in or upon which the work or works is / are to be provided, executed, erected, done or carried out.

2.10. The term 'Equipment' shall mean and include any equipment, stores and materials to be provided and work to be done by the contractor under the contract.

2.11. The term 'Contract' shall mean letter of Intent / Award, Letter of Acceptance of Tender and shall include the conditions of contract, specifications, schedules, tender, guarantee, drawings and any further conditions which may be specifically agreed to between the parties as forming a part of the contract.

2.12. The term 'Tests' shall mean such tests as prescribed in the contract and as instructed by the Engineer-in-Charge to be performed by the contractor before the works are finally accepted by the TIFR, Hyderabad ready for commercial use complete with all items to the satisfaction of the Engineer-in-Charge.

2.13. The term 'Writing' shall include any manuscript, typewritten or printed statement under or over signature and / or seal as the case may be. Words importing singular shall also include plural and vice versa where context requires.

2.14. The term 'Item Rate Tender' shall mean tenders in which the contractors are required to quote rates for individual items of work as given in the schedule of quantities.

3. SCOPE & OBJECTIVE:

3.1. The Objective of the tender is to execute "**Turnkey Works for Setting up of Student Sitting Space in Trishul Building First Floor as per the BOQ**" at TIFR Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad – 500 046 as per the specifications and Bill of quantities mentioned in the Financial Bid.

3.2. Period of Completion of Work: **180 days** from the date of signing the work order and Contract / agreement.

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

4. INSTRUCTIONS:

4.1. Pre-Bid Conference: All prospective bidders are requested to attend a pre-bid conference on the time, date and venue (in-person) / zoom meeting (online) mentioned in the NIT above & TIFRH Tenders webpage for clarification on the Tenders' technical

specifications and commercial conditions, besides discussions on any additional suggestions proposed by the bidders. If found necessary, a corrigendum to the tender documents would be issued and would be put up on TIFRH website for information of all contractors and thereafter no further query/condition shall be entertained.

4.2. Site visit by the tenderer: The tenderer is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

4.3. Sufficiency of Tender: The tenderer shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

4.4. 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 superscribed with Tender No. **TIFR/PD/TS/26-27/2602**, Description: **“Turnkey Works for Setting up of Student Sitting Space in Trishul Building First Floor as per the BOQ at TIFR, Hyderabad at TIFRH.”** and Due date: **11.08.2026**, 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:

4.4.1. **“Technical cum eligibility Bid (Part-I)”**: This will contain Technical part, Eligibility Documents along with testimonials and Earnest Money Deposit (EMD) which shall be submitted in the form of Demand Draft/Pay Order/Banker’s cheque issued by a Scheduled Bank, drawn in favor of **“TIFR Center for Interdisciplinary Sciences”**, Payable at Hyderabad, (To be enclosed with the Technical Bid (Part-I)).

4.4.2. **“Financial Bid (Part-II)”**: This will contain the complete financial bidding document duly filled in Schedule of Financial Quote & Tender Drawings.

4.5. Evaluation of Technical Bids: The technical bids received will be opened first and examined for EMD, Eligibility Criteria, Conditions, etc. Tenders without EMD shall be summarily rejected.

4.6. Evaluation of Financial Bids: Financial Bids of technically qualified bidders will only be opened. The financial bids should contain the complete financial bid document duly filled in Schedule of Financial Quote of Financial Bid and signed along with Tender drawings. Work will be awarded to the lowest bidder (L1) based on the financial evaluation.

4.7. Other Instructions:

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

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

4.7.3. This notice inviting bid document shall form a part of the contract document.

4.7.4. 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.

CHAPTER-II**TECHNICAL CUM ELIGIBILITY BID (Part-I):
TENDER ELIGIBILITY CRITERIA & INSTRUCTIONS TO BIDDERS****TECHNICAL CUM ELIGIBILITY BID
(PART-I)**

- (i) Earnest Money Deposit as stipulated.**
- (ii) “Eligibility Criteria” & “Schedules” for tender qualification.**

1. Earnest Money Deposit (EMD):

1.1. EMD shall be submitted in the form of Demand Draft/Pay Order/Banker's cheque issued by a Scheduled Bank, drawn in favor of "TIFR Center for Interdisciplinary Sciences", Payable at Hyderabad, (To be enclosed with the Technical Bid (Part-I)).

2. Eligibility Criteria: Contractors who fulfil the following requirements shall ONLY be eligible to apply:

2.1. The bidder should hold a valid labour license issued by appropriate authority and must be valid throughout the contractual period.

2.2. The bidder should provide copy of the following original certificates:

- PAN card from Income Tax Authority.
- GST registration document.

2.3. The bidder should submit IT Returns documents for the last three consecutive financial years ended on March 31, 2025 audited by the licensed Chartered Accountant.

2.4. Turnover: The bidder should have an average annual financial turnover (gross) of **Rs.13.61 Lakhs** during the immediate last three consecutive financial years ending March 31, 2025 (certificate from licensed Chartered Accountant to be provided). The value of annual turnover figures shall be brought to current value by enhancing the actual turnover figures at a simple rate of 7% per annum.

2.5. Profit/Loss : The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during the immediate last five consecutive financial years ending 31st March, 2025 certified and audited by the Chartered Accountant.

2.6. Experience:

2.6.1. The bidder should have an experience of having successfully completed similar works in Research Institutes, Universities, Private Laboratories, R & D institutes, etc. in any Government /PSU/Private organizations of repute during the last seven years ending last day of the month previous to the one in which tender is invited.

- Three similar completed works each costing not less than **Rs.18.15 Lakhs**, or
- Two similar completed works each costing not less than **Rs.27.23 Lakhs**, or
- One similar completed work costing not less than **Rs.36.31 Lakhs**.
- The value of executed works shall be brought to current costing level by enhancing the actual value of work at a simple rate of 7% per annum; calculated from the date of completion to previous day of the last day of submission of tender.

2.6.2. The bidder should furnish copies of work orders and completion certificates in support of the aforementioned works information..

2.6.3. Important Notes:

- a) 'Similar work' shall mean: "Similar Turnkey Works of HVAC, Electrical, Modular Panel Works"
- b) 'Cost of work' shall mean gross value of the completed work including the cost of materials supplied to the Client, but excluding those supplied free of cost. The applicant's performance for each work completed in the last seven years should be certified by an officer not below the rank of Executive Engineer or equivalent. Information.
- c) The bidder should have a full-fledged in-house project management team to undertake the jobs.
- d) Bidder's non-adherence to furnishing of information in the given format/schedule will lead to disqualification of the tender.

2.7. The bidder shall submit a Solvency Certificate for an amount equal to or not less than **Rs.18.15 Lakhs**, issued by any Scheduled Bank. The certificate shall have been issued within six (6) months prior to the bid end date.

2.8. The bidder should submit the Local Content Certificate as per Annexure-III enclosed with this tender document in 'Chapter-VI: Annexures'.

2.9. The bidder should not be blacklisted by any office / department of Central / State Government / Public Undertaking etc. The bidder should submit the undertaking form as per 'Annexure-VI' enclosed with this tender document in 'Chapter-VI; Annexures'.

(On bidder/firm's letterhead)

SCHEDULE – A
PROFILE AND DETAILS OF THE BIDDER

1. Name of the firm :
2. a) Address of the firm :
- b) Telephone No. :
- c) Mobile No. of Contact Person :
- d) Valid email id:
3. Type of Organization (Proprietorships / Partnership) Ltd. Co. / Co-Operative) (Copy of relevant document to be enclosed) :
4. Firm Registration Details: :
 - a) Year of Establishment / Date of Incorporation
 - b) Registration No.
 - c) GST Registration No.
 - d) Income Tax No. (PAN)
 - e) Labour License Details
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 :

SCHEDULE – B

DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DAY OF SUBMISSION OF TENDERS

(I) Major “Similar Turnkey Works of HVAC, Electrical, Modular Panel Works” (Copies of work orders and completion certificates are to be provided)

- Three similar completed works each costing not less than **Rs.18.15 Lakhs**, or
- Two similar completed works each costing not less than **Rs.27.23 Lakhs**, or
- One similar completed work costing not less than **Rs.36.31 Lakhs**.

Sr. No.	Name of work/ project and location	Description of work in brief	Name of the Engineer with full postal address.	Name of the client, also specify whether Govt. / Semi Govt. / Pvt. body with full postal address	Contract Amount in (Rs.)	Year of commencement	Date of Completion		Whether work was completed /uncompleted/ the contract was terminated from either side? Give Details.	Any other relevant information
							Stipulated Date	Actual Date		
1.										
2.										

(II) List of works / projects under execution above **Rs.18.15 Lakhs**.

Sr. No.	Name of work/ project and location	Description of work in brief	Name of the Engineer with full postal address.	Name of the Client, also specify whether Govt. or semi Govt. or Pvt. Body with full postal address	Contract Amount in (Rs.)	Stipulated date of work completion	Present stage of work; Slow progress if any, and reasons thereof	Any other relevant information
1.								
2.								
3.								

SCHEDULE – C**TECHNICAL PERSONNEL AND THEIR SPECIFIC EXPERIENCE**

1. List of technical personnel in your establishment and give details about their technical qualification and experience:

Sr. No.	Name	Age	Qualification	Project Experience	Nature of works handled	Name of the project Handled	Date of employment in your organization	Indicate specific experience in “ <u>similar works</u> ” which he/she was employed
1								
2								

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

(On bidder/firm's letterhead)

SCHEDULE – D

FINANCIAL POSITION AND WORKING RESULTS

		<u>2022-23</u>	<u>2023-24</u>	<u>2024-25</u>
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)	

(Authorised Signatory)

(On bidder/firm's letterhead)

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 arose during execution of the contracts in the last 5 years. | : |
| | | |
| 3 | Latest Income Tax Clearance Certificate | : |
| | | |
| 4 | Name of the two senior officials of Organizations preferably Govt./Semi Govt/ Autonomous/ Public Sector Organization for whom you have executed important and major process chillers and related 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. | : |

CHAPTER- III**TERMS & CONDITIONS OF THE CONTRACT****1. Validity Period of Tender:**

1.1. The validity period for acceptance of tender shall be of 75 (Seventy Five) from the last day of receipt of technical bid, further

(a) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to TIFR within 7 days after the last date of submission of bids, then the TIFR shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of earnest money absolutely irrespective of whether a letter of acceptance for the work is issued or not.

(b) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to TIFR after expiry of 7 days after last date of submission of bids, then TIFR shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of whether a letter of acceptance for the work is issued or not.

2. Acceptance of Tender:

2.1. 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.

2.2. "Letter of Intent": A "Letter of Intent (LOI)" will be issued as an intimation to the successful tenderer / contractor that his/her tender has been accepted and the successful tenderer / contractor should submit the requirements within the due date specified in the LOI.

3. Performance guarantee:

3.1. The successful tenderer / contractor shall submit an irrevocable Performance Guarantee (PG) amounting to 5% of the contract value within 7 (seven) working days from the date of issue of the "Letter of Intent (LOI)" in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement.

3.2. The performance guarantee shall be in the form of Demand Draft / Pay Order / Banker's cheque / Government Securities / Fixed Deposit Receipt (FDR) or Guarantee Bonds of any Scheduled Bank in accordance with the form as Annexure – I 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.

3.3. The Performance Guarantee shall be initially valid up to the stipulated date of completion period plus 60 days beyond the date of completion of all contractual obligations of the contractor including warranty obligations. In case the time for completion of work gets

enlarged, the contractor shall get the validity of performance Guarantee extended to cover such enlarged time for completion of work.

3.4. The letter for commencement of work / work order shall be issued to the contractor only after he/she submits the performance guarantee in an acceptable form within 7 (seven) working from the date of issue of the "Letter of Intent (LOI)".

3.5. The performance guarantee shall be returned to the contractor, without any interest, after recording of the completion certificate for the work by the competent authority.

3.6. The Engineer-in-Charge shall make a claim under the Performance guarantee except for amounts to which TIFR is entitled under the contract (notwithstanding and / or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above (or) 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.

(b) 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.

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

4. Security Deposit:

4.1. The successful tenderer / contractor shall also be required to submit a Security Deposit (SD) amounting to 2.5% of the contract value within 7 (seven) working days from the date of issue of the "Letter of Intent (LOI)" in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement.

4.2. The Security Deposit shall be in the form of Demand Draft / Fixed Deposit Receipt (FDR).

4.3. Security Deposit shall be initially valid up to one year from the date of completion of work. In case the time for completion of work gets enlarged, the contractor shall get the validity of Security Deposit extended to cover such enlarged time for completion of work. The Security Deposit shall be returned to the contractor, without any interest, after completion of defect liability period.

4.4. All compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security

deposit or from the interest arising there from, or from any sums which may be due to or may become due to the contractor by TIFR or any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by scheduled banks (if deposited for more than 12 months) endorsed in favor of the TIFR, HYDERABAD, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part Thereof.

5. Signing of Work Order and Contract / Agreement:

5.1. The Notice Inviting Tender (NIT) and all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto shall form a part of the work order / contract document.

5.2. A 'Work Order' will be issued to the successful tenderer / contractor fulfilling the provisions contained / issued in the "Letter of Intent (LOI)".

5.3. The successful tenderer / contractor within 7 days from receipt of 'Work Order' shall provide his/her acceptance by signing the work order and contract / agreement as per the provisions/requirements issued in the 'Work Order'.

5.4. Each page of the Work Order and Contract / Agreement and all the documents attached to it shall be signed by both the Engineer-in-Charge or his authorized representative and the contractor, as per the conditions of the NIT and Work Order.

5.5. The Contractor shall commence work immediately after signing the Work Order and Contract / Agreement.

5.6. No payment for the work done will be made unless the Work Order and Contract / Agreement is signed by the contractor.

6. Levy / Taxes payable by contractor:

6.1. GST or any other tax, levy or Cess in respect of input for or output by this contract shall be payable by the contractor and TIFR shall not entertain any claim whatsoever in this respect.

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

7. Deduction of Income Tax : Income Tax deductions shall be made from all payments made to the Contractor as per rules and regulations in force, in accordance with the Income Tax Act, 1961 under section 194-C prevailing from time to time.

8. Work at Site:

8.1. 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.

8.2. Work at the TIFR, Hyderabad's premises shall be carried out at such time as the TIFR, Hyderabad may approve but the TIFR, Hyderabad 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.

8.3. The Contractor shall obey Central, Local and State regulations and enactments pertaining to workmen and labor 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.

8.4. The contractor should follow safety precautions and maintain safety PPE's to their workmen throughout the project. Penalty will be imposed by TIFRH if violation of safety precautions.

9. Delays: The Contractor/Supplier shall not be entitled to claim any compensation for any loss suffered by him on account of delays in commencing or executing the work, including delays in procuring Government controlled or other materials and delay in obtaining instructions and decisions from the Engineer-in-Charge.

10. Taking Over: The equipment when erected at site shall be deemed to have been taken over by TIFR, Hyderabad when the Engineer-in-Charge will have certified in writing that the equipment has fulfilled the contract conditions.

11. Extension of Time: The time allowed for the execution of works as specified in para "Scope & Objective" above shall be the essence of the contract. If the work is hindered by the Contractor by any reasons, the Contractor should immediately give notice thereof in writing to the Engineer-in-Charge seeking extension of time within 14 days of the happening of the event causing delay in prescribed forms i.e. A form of application by the contractor for seeking extension of time (Annexure –V) to the authority is appended with this tender in "Chapter-VI: Annexures". The authority/Engineer-in-Charge shall, if justified, give a fair and reasonable extension of time for completion of work after due consideration of the same within 30 days of the date of receipt of such request from the Contractor in prescribed form.

12. Liquidated Damages:

12.1. For all delays, which do not merit any extension of time, the Contractor/ Supplier shall pay penalty or Liquidated Damages (LD) to the TIFR, Hyderabad at the rate of 0.5% of the

contract value per week for delay in completion of work subject to the maximum 10 per cent of the contract value.

12.2. 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. 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 TIFR, Hyderabad under clause: 'Termination of Contract by the TIFR, Hyderabad'. After that the same shall be completed by the TIFR, Hyderabad at the Contractor's/Supplier's risk and cost.

13. Other Damages and Insurance:

13.1. Contractor's workmen / employee's Insurance: The Contractor/Supplier/Manufacturer shall be responsible for providing insurance for his/her workmen / employees engaged in performance of the contract. TIFR, Hyderabad shall not be liable in respect of any damages or compensation payable at law in respect of or in consequence of any accident or injury to any workman or any other person employed by the contractor and the Contractor shall indemnify and keep indemnified TIFR, Hyderabad against all such damages and compensation and against all claims, demands, proceedings, costs, charges & expenses, whatsoever in respect of or in relation thereof.

13.2. The Contractor/Supplier/Manufacturer shall also indemnify the TIFR, Hyderabad against all claims which may be made upon the TIFR, Hyderabad 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. The contractor shall furnish a copy of the labor license before commencement of work. If the aforesaid are not applicable, the contractor should furnish declaration to this effect and shall indemnify TIFR, Hyderabad, for violation of any such compliances.

13.3. "Contractor's All Risk (CAR)" / "Erection All Risk (EAR)" insurance: The Contractor shall insure the work for a sum equivalent to the Contract value together with materials and plants for incorporation therein, to the full replacement cost by providing the CAR/EAR policy document before the commencement of work.

13.4. Any other Insurance(s) and Evidence: The Contractor/Supplier/Manufacturer shall also at his own cost carry and maintain any and all other insurance(s) which may be required for the Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

13.5. 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.

13.6. The Contractor/Supplier/Manufacturer shall indemnify the TIFR, Hyderabad against all claims which may be made against the TIFR, Hyderabad, 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'.

13.7. 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 Sub-Contractor 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 TIFR, Hyderabad 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.

13.8. The TIFR, Hyderabad, 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.

14. Guarantee and Defects Liability Period: 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 TIFR, Hyderabad. If the defects are not remedied within a reasonable time, the **TIFR, Hyderabad** may proceed to do so at the Contractor's/Supplier's risk and expense without prejudice to any other rights.

15. Terms of Payment:

15.1. The contractor will be paid only two 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. All interim and final bills will be settled based on the joint measurements of each item of work and certified by TIFR Engineer. The bills for non-perishable 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 i.e. Original invoice, Inventory, etc.

15.2. All interim bills will be paid within 30 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.

15.3. BILL FORMAT

Work Order-Item No.	Description of Items (At least 2 lines)	Unit	Work Order Quantity	Executed Quantity	Rate	% of work done	Total Amount

NOTE:

- All quantities in the bill should be cumulative.
- All measurements should be in the order of tender or work order sequence and should be recorded in the measurement book. The Measurement should be provided strictly in the below mentioned format only.

15.4. MEASUREMENT FORMAT

Work Order-Item No.	Description of Item & Location against each Measurement taken	Nos.	Length	Width	Height	Qty.	Remarks

NOTE:

- 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.

15.5. Final Payment:

Payments of Final bill shall be made after deduction of Security Deposit /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.

16. Special conditions of Contract governing supplies of the Equipment of this Tender:**16.1. Scope:**

16.1.1. 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.

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

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

16.2. Inspection & Testing and commissioning of Material:

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

16.2.2. All the materials shall be tested at factory as per IS Specifications of material by TIFR, Hyderabad's Engineer-in-Charge/Engineers before dispatch at the cost of Contractor/Manufacturer/Supplier.

16.2.3. 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.

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

16.4. Taxes & Duty:

16.4.1. Contractor/Manufacturer/Supplier shall quote the basic price of material. Excise Duty, Custom Duty, Sales Tax, GST, Octroi, Delivery Charges, Transit Insurance and/or any other charges, if any, must be indicated separately.

16.4.2. TIFR being a research institute of Govt. of India, is eligible for Excise Duty Exemption on equipment supplies. Necessary exemption certificate will be provided by TIFR.

16.4.3. Transit Insurance: The Transit Insurance from the point of dispatch to the site of erection shall be in the scope of Supplier and the cost shall be indicated separately.

16.5. Delivery of Material:

16.5.1. The Contractor/Manufacturer/Supplier 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 work order number and detail of the contents.

16.5.2. All the materials must be delivered at site i.e. 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.

16.5.3. Material must be delivered at site in all respects as mentioned in the work order prior approval of the respective technical data sheet /pre dispatch inspection report by TIFR, Hyderabad E.I.C.

16.6. Guarantee:

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

16.7. 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 TIFR, Hyderabad or not.

16.8. 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.

16.9. 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.

16.10. Rejection of Defective Equipment:

16.10.1. 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 TIFR, Hyderabad, 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 TIFR, Hyderabad, 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 TIFR, Hyderabad 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 TIFR, Hyderabad 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 TIFR, Hyderabad 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 TIFR, Hyderabad readily procurable, such opinion being final, then with the nearest substitutes.

16.10.2. In the event of such rejection the TIFR, Hyderabad 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.

16.11. 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.

16.12. Intimation about Delivery:

If the TIFR, Hyderabad 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 TIFR, Hyderabad that he is ready to take delivery.

16.13. 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 TIFR, Hyderabad, the TIFR, Hyderabad 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 TIFR, Hyderabad may incur towards erection. The Contractor/Supplier shall, however not be entitled to any gain due to such an action by the TIFR, Hyderabad.

16.14. 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.

16.15. 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.

16.16. Termination of Contract by the TIFR, Hyderabad:

16.16.1. 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 TIFR, Hyderabad that the Contractor/Supplier –

16.16.1.1. has abandoned the Contract, or
16.16.1.2. 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
16.16.1.3. 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
16.16.1.4. 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
16.16.1.5. 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
16.16.1.6. 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 TIFR, Hyderabad 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.

16.16.2. 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 TIFR, Hyderabad 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.

16.16.3. If the Contractor/Supplier shall fail to comply with the requirements of said notice for seven days after such notice has been given, the TIFR, Hyderabad 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 TIFR, Hyderabad 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.

16.16.4. 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 TIFR, Hyderabad 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.

16.16.5. 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 TIFR, Hyderabad shall have the power to remove and sell the same holding the proceeds less the cost of removal and sale, to the credit of the Contractor/Supplier. The TIFR, Hyderabad shall not be responsible for any loss sustained by the Contractor/Supplier from the sale of the equipment and material.

16.17. Contractor's Representative:

The Contractor/Supplier shall employ at least one qualified representative (i.e. Air compressor work supervisor 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. The Contractor's/Supplier's representative shall be a qualified electrical/ mechanical engineer possessing adequate site experience in similar nature of works.

16.18. Completion Time:

Unless otherwise agreed in writing between the TIFR, Hyderabad 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 Order issued to Contractor/Supplier by the TIFR, Hyderabad.

16.19. Delivery of Material at Site:

The Contractor/Supplier/Manufacturer shall arrange for safe transit and delivery of material at site and unloading the material at site.

16.20. 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.

16.21. Spare Parts & Manuals:

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

16.22. Training:

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

16.23. 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.

16.24. Drawings and Documentation:

Contractor should make and submit the drawing as per the site conditions and take approval from EIC. As-built drawings as specified in this technical specifications shall be submitted by the Contractor.

16.25. 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. TIFR, Hyderabad shall assist in providing required declarations. Statutory fees shall be paid by the TIFR, Hyderabad.

16.26. Guarantee (Equipment):

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 15 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 TIFR, Hyderabad.

CHAPTER-IV**SPECIFICATIONS AND ALLIED TECHNICAL DETAILS****TECHNICAL SPECIFICATION****1. 4Way Cassette AC's :**

The ceiling-suspended hydronic cassette type fan coil unit shall be of 2 TR cooling capacity, factory assembled, tested, and suitable for chilled water air-conditioning systems. The unit shall provide four-way directional airflow with low noise operation and shall be complete with a minimum two-row deep chilled water cooling coil constructed of seamless copper tubes mechanically expanded into aluminium fins, a dynamically balanced multi-blade centrifugal fan, and a four-speed, permanently lubricated direct-drive motor. The casing shall be fabricated from galvanized iron and shall include a decorative panel with automatic swing louvers for uniform air distribution. The unit shall be provided with a washable air filter, infrared remote controller, LCD display, insulated condensate drain pan, built-in condensate drain pump with drain pump failure alarm, and all necessary condensate drain connections. Water-side accessories shall include a complete set of ball valves (with and without strainers), flexible piping connections, and a 2-way motorized control valve. Chilled water piping connections shall be made using copper pipes with suitable insulation. The unit shall be suitable for operation on $220 \pm 10\%$ V, 50 Hz, single-phase power supply and shall be complete with all internal wiring, controls, mounting accessories, and safety features. The fan coil unit shall be factory tested for performance and leakage, and performance test reports from NABL or AHRI accredited laboratories shall be furnished. The complete unit shall be supplied, installed, tested, and commissioned in accordance with the specifications, relevant IS standards, and good engineering practices, complete in all respects.

2. Chilled Water Piping with Insulation:

The chilled water piping shall be 65 mm nominal diameter, conforming to ASTM A53 Grade B/IS 1239 (Heavy Class)/IS 3589 or equivalent, suitable for chilled water applications with a minimum working pressure of 10 kg/cm^2 (PN 16). The piping shall be supplied, laid, installed, tested, and commissioned complete with all necessary fittings, including elbows, tees, reducers, flanges, unions, supports, hangers, guides, anchors, clamps, vibration isolators, sleeves, nuts, bolts, gaskets, and other accessories required for a complete installation, excluding valves, strainers, gauges, and other separately specified items. All welded joints shall be carried out by qualified welders using approved welding procedures, while threaded joints shall be made using approved thread sealant where applicable. The completed piping network shall be hydrostatically tested at 1.5 times the working pressure or as specified, ensuring leak-proof operation before insulation. The piping shall be insulated with closed-cell elastomeric nitrile rubber insulation of minimum 45 kg/m^3 density, thermal conductivity not exceeding $0.037 \text{ W/m}\cdot\text{K}$ at 20°C mean temperature, and Class 'O' fire performance, with all longitudinal and circumferential joints bonded using compatible rubber-based adhesive to ensure a continuous vapour barrier. Insulation shall be neatly finished with sealed joints and protected against damage wherever required. The piping system shall be installed in accordance with ASHRAE, SMACNA, relevant IS standards, and the manufacturer's recommendations, ensuring proper alignment, slope, accessibility for maintenance, and allowance for thermal expansion and contraction. The scope shall include repairing any damage caused to the building during execution, cleaning, testing, balancing where

applicable, and commissioning the complete chilled water piping system, complete in all respects as specified.

3. Manual Butterfly valve:

The 65 mm diameter manual butterfly valve shall be of wafer/lug type with a Cast Iron (CI) body, Stainless Steel (SS 304/SS 316) disc, EPDM/Nitrile rubber resilient seat and O-ring, suitable for chilled water applications with a minimum pressure rating of PN 16. The valve shall conform to BS 5155, IS 13095, or equivalent international standards and shall be provided with a lever-operated or gear-operated manual mechanism as required. The valve shall be supplied complete with matching MS/CI flanges, gaskets, high-tensile galvanized nuts, bolts, washers, extended stem for insulated piping, and all accessories required for installation. After successful pressure testing, the valve shall be insulated with closed-cell elastomeric nitrile rubber insulation of the same thickness and specifications as the connected chilled water piping. The complete assembly shall be supplied, installed, tested, and commissioned in accordance with the approved specifications and manufacturer's recommendations.

4. Flexible Connection:

The 65 mm diameter flexible connection shall be of reinforced EPDM/neoprene rubber construction with nylon or steel cord reinforcement, suitable for chilled water applications and designed to absorb vibration, thermal expansion, and minor pipeline misalignment. The flexible connector shall have flanged ends compatible with PN 16 piping systems and shall be supplied complete with matching flanges, gaskets, control rods, high-tensile galvanized nuts, bolts, washers, and all accessories necessary for installation. The flexible connection shall be installed at the inlet and outlet of pumps, chillers, or cooling equipment to minimise transmission of vibration and noise. The complete assembly shall be pressure tested, commissioned, and installed in accordance with the manufacturer's recommendations and relevant IS/BS standards.

5. Motorized Butterfly Valve:

The 65 mm diameter motorized butterfly valve shall be of wafer/lug type with a Cast Iron (CI) body, Stainless Steel (SS 304/SS 316) disc, resilient EPDM/Nitrile rubber seat and O-ring, having a minimum pressure rating of PN 16 and conforming to BS 5155, IS 13095, or equivalent standards. The valve shall be equipped with an IP55 or higher rated electric actuator suitable for 220–240 V AC, 50 Hz operation (or as specified) and capable of accepting 0–10 V DC or 4–20 mA control input signals, while providing corresponding position feedback signals to the Building Management System (BMS). The actuator shall include manual override, visual position indication, overload protection, and fail-safe operation where specified. The valve shall be supplied complete with matching flanges, gaskets, extended stem, high-tensile galvanized nuts, bolts, washers, and all necessary mounting accessories. After installation and successful testing, the valve shall be insulated with closed-cell elastomeric nitrile rubber insulation matching the thickness and specifications of the connected chilled water piping. The complete assembly shall be supplied, installed, tested, integrated with the control system, and commissioned in accordance with the manufacturer's recommendations and the project specifications.

6. Drain pipe:

The 50mm and 25mm diameter condensate drain piping shall be of heavy-duty (PVC) pipe conforming to IS 4985/IS 13592 or equivalent standards, suitable for condensate drainage from air-conditioning units. The piping shall be supplied, installed, tested, and commissioned

complete with all necessary fittings, including bends, elbows, tees, reducers, couplers, sockets, solvent cement joints, clamps, supports, hangers, sleeves, and accessories required for a complete installation. The piping shall be installed with the required slope to ensure free gravity flow of condensate without water stagnation. The entire drain piping shall be insulated with 9 mm thick closed-cell elastomeric nitrile rubber insulation, Class 'O' fire rated, having a thermal conductivity not exceeding 0.037 W/m·K at 20°C mean temperature, with all joints sealed using compatible rubber-based adhesive to prevent condensation. The work shall include making good all civil damages, testing for leak-free operation, cleaning, and commissioning, complete in all respects as per the approved specifications and manufacturer's recommendations.

7. MODULAR PANELS AND DOORS:

Work shall include but shall not be necessarily limited to the following system:

7.1.Wall Panel:

- a. Demountable, non-progressive module of 48 inch (1220mm) wide capable of four direction lateral expansion with reusable components.
- b. 100mm and 50mmthk. Modular powder coated clean room wall panels made of 0.8 mm thick for outer skin and 0.8 mm thick for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt., supports, cut outs, etc. Powder coating thickness shall be 60 to 80 micron. Aluminum interconnecting profiles, floor track for the level adjustment, etc. shall be provided. Powder coating thickness shall be 60 to 80 micron.. The panels are filled with PUF insulation of density 42 kg / cub. mt.The wall system is independent from the ceiling system. The wall panels should be UL/CE classified.
- c. Butt vertical joints shall be snap-in-type with continuous concealed dry gasketing. Utility raceways and piping placed along the wall on side.
- d. Hollow metal flush doors and frames in the cleanroom wall system shall be an integral part of wall system.
- e. Door hardware shall be supplied and installed as required for the cleanroom wall system.
- f. Provide plexi glass/toughened in wall partition wherever shown in the drawing.
- g. Keep provisions for electrical power sockets, paging system, intercom, retrun duct and LAN system as shown in the drawing
- h. Provision has to be made also for making openings in the partition wall for taking cables, etc., wherever necessary as per the instructions of the Owner/Consultant.
- i. Cleanroom support system shall consist primarily of bottom floor track and top runner system. The partition panel shall be with no exposed fasteners.
- j. Major accessory components shall include silicone sealant and continuous extruded closed cell polyethylene tape. Fasteners shall be as recommended by the system manufacturer.
- k. Any modification and/or deviation from manufacturer's standard demountable partitions accessories etc. specified herein or shown on the drawing shall be the responsibility of the contractor including any design, additional material etc. necessitated by the same.

7.2. CEILING SYSTEM:

Provide walkable ceiling panels of 50 mm thick. made up of 0.8 mm thick for outer skin and 0.8 mm thick for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt.,. Powder coating thickness shall be 60 to 80 micron. Cutouts for diffusers and light fixtures are to be pre-engineered and factory made. The panel is filled with PUF insulation of density 42 kg / cub. mt.,. The ceiling system is independent from the partition system. The roof (ceiling panels) should be UL/CE classified.

- a. Suspension: Zinc coated threaded hook rods from true ceiling with turnbuckle arrangement as shown in drawing.
- b. Ceiling systems shall include Insert springs, perimeter connection with 2 spacers and J Channels, corner pieces.
- c. Modular installation system shall be of Hilti / Mupro / Unistrut.
- d. The ceiling panels shall be supported from the true ceiling by M-8 rods with threaded ends, which shall be connected at one end to turnbuckles. The turnbuckle shall be attached to another M-8 threaded ends and a clip at the bottom of the rod to fit securely on the ceiling system. The turnbuckle assembly in the overhead structure shall permit final leveling of the ceiling panels. Overall ceiling shall be level within + 2.5 mm throughout the room.
- e. Perimeter connections: For fixed perimeter where vibration of building movement is not a design criteria, 1" Wide J channel with a chamber shall be used. For perimeter with expansion or vibration joints, Z- spacers shall be used to isolate the ceiling from movement of the adjacent wall.
- f. Suspension spacing: Design suspension spacing for dead load of ceiling plus 73 Kg/Sq. m. live load.
- g. The suspenders shall be fastened free of vibrations; for this reason no common suspension with media duct and other systems shall be allowed.

FIRE RATING: Ceiling panel confirms a minimum one hour fire rating. In case of cutouts, the fire resistance rate is maintained. The contractor has to submit proof from reputed/established laboratories like CBRI, Roorkee/UL/CE for complying with a minimum one hour fire rating for skin.

7.3. SWINGING FLUSH DOORS AND FRAMES:

- a. Swinging metal doors and frames of wall matching material location of which are indicated in schedule and in drawings.
- b. Vision glass and glass desiccant infill panels as per drawings.
- c. Finish hardware as specified in hardware schedule.

7.4. SYSTEM DESCRIPTION:

The door leaves are made of 2 metallic steel sheet skins 0.8 mm thick, bent, clipped and glued. The whole door shall be a monolithic solid element. Dimensions in width are as per site requirements, dimensions in height are according to the precise needs of the rooms to be built. The door leaves on both sides flush with the door frame and the partition, vision glass, iron monger, shop fabricated factory finished, infill and attachment devices.

7.5. MATERIALS:

- a) Electro zinc steel /Galvanized steel /Aluminum honeycomb
 - b) Fasteners: Stainless steel, Make – HILTI.
 - c) Door hardware: - Handles- Door closer- Reversible panel latch- Concealed flush bolt- SS304 Ball bearing butt hinges- BRITON EXIT hardware/DORMA- DORMA/RYOBI- BRITON EXIT hardware/DORMA- BRITON EXIT hardware/DORMA- BRITON EXIT hardware/DORMA-Panel latch with DDs box keeper- BRITON EXIT hardware/DORMA- Float vision glass- Lock (Mortise sash lock with- Ashai- DORMA(lever handles)- Automatic door button (concealed)-BRITON EXIT hardware/DORMA
- 5.6. COMPONENTS Doors: 46mm thick fully flush, double skin door shall with lock seam joints at stile edges. In-fill of puff insulation.

ELECTRICAL WORKS**1. 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.

2. Lamps:

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

3. 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 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 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.

4. 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:

- a. 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.

- b. Electrical continuity test: Each and every circuit shall be tested for electrical continuity by using a multimeter.
- c. 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.
- d. Earth electrode resistance test: The earth electrode resistance shall be tested as specified in section
- e. 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.

5. Distribution Boards:

All the distribution boards shall be with MCCBs/ MCBs as described in the respective schedule. The distribution boards shall be controlled by a switch fuse, miniature circuit breaker 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.

5.1 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.

6. L. T. CABLES:

All power and distribution cables shall be 1100V grade, PVC / XLPE insulated and sheathed, armoured/unarmoured, multi strand aluminum 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 conform 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.

6.1 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 the same trench. When more than one cable is laid in the same trench a gap of at least 150 mm 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 locations throughout the length of cables and at both ends.

6.2 JOINTING:

Jointing or end termination of cables shall be done by a 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.

6.3 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.
- The 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.

7. 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.

8. 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 are 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 the false ceiling area. Conduits above false ceiling in such cases shall run with proper supports / suspenders. Conduits shall not be rested on a false ceiling grid in any case. Flexible conduits shall not be used in concealed work.

9. 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.

9.1 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.

9.2 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 arresters with gaps for AC system.

IS : 13947-1993 L.V. Switchgears and control gears

IS:13032-1991 Miniature circuit breaker boards for voltage up to 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 household & similar purposes.

IS:4160-2005 Interlocking switch socket outlets –specification

IS:60309-2002 Plug socket –outlets & couplers industrial purposes.

9.3 CABLE

IS:12943-1990 Brass glands for PVC cables.

IS:1255-1983 Code practice for installation and maintenance of power cables Up to 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

9.4 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 Waterproof electric lighting fitting
IS:1944-1970 Code of practice for lighting of public thoroughfare

9.5 OTHER CODES

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

9.6 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.

CIVIL WORKS

The work shall comprise earthwork excavation, plain cement concrete (PCC), random rubble masonry (RRM), centering and shuttering, and reinforced cement concrete (RCC) for foundations, complete in all respects as per the approved drawings and specifications. Earthwork shall be carried out by mechanical means (hydraulic excavator) or manual means to the required lines, levels, widths, and depths, including dressing of sides, ramming of the bottom, dewatering wherever necessary, disposal of surplus excavated earth within the specified lead, and backfilling with approved excavated material after completion of foundation works. PCC shall be M20 grade design mix concrete using Ordinary Portland Cement (OPC)/Portland Pozzolana Cement (PPC), graded coarse aggregates, clean fine aggregates, potable water, and approved admixtures conforming to IS 9103, machine mixed, properly placed, compacted, cured, and finished as specified. Random Rubble Masonry shall be constructed using hard, sound, durable stones laid in cement mortar 1:6, with properly dressed bond stones, joints fully packed with mortar, and all voids filled to produce a solid and stable foundation in accordance with IS 1597.

Centering and shuttering shall be of steel or good-quality waterproof plywood supported on rigid staging, true to line and level, adequately braced to withstand construction loads without deformation, and removed only after the concrete has attained the required strength. Reinforced Cement Concrete shall be M25 grade design mix concrete, manufactured and placed in accordance with IS 456:2000, using approved materials, machine batching, vibration compaction, proper curing, and finishing to achieve the specified strength and durability. The contractor shall provide all labour, materials, machinery, tools, equipment, scaffolding, consumables, curing arrangements, testing, and quality control necessary for satisfactory completion of the work. The entire work shall be executed in accordance with relevant CPWD Specifications, IS Codes, National Building Code (NBC), and the directions of the Engineer-in-Charge, complete in all respects.

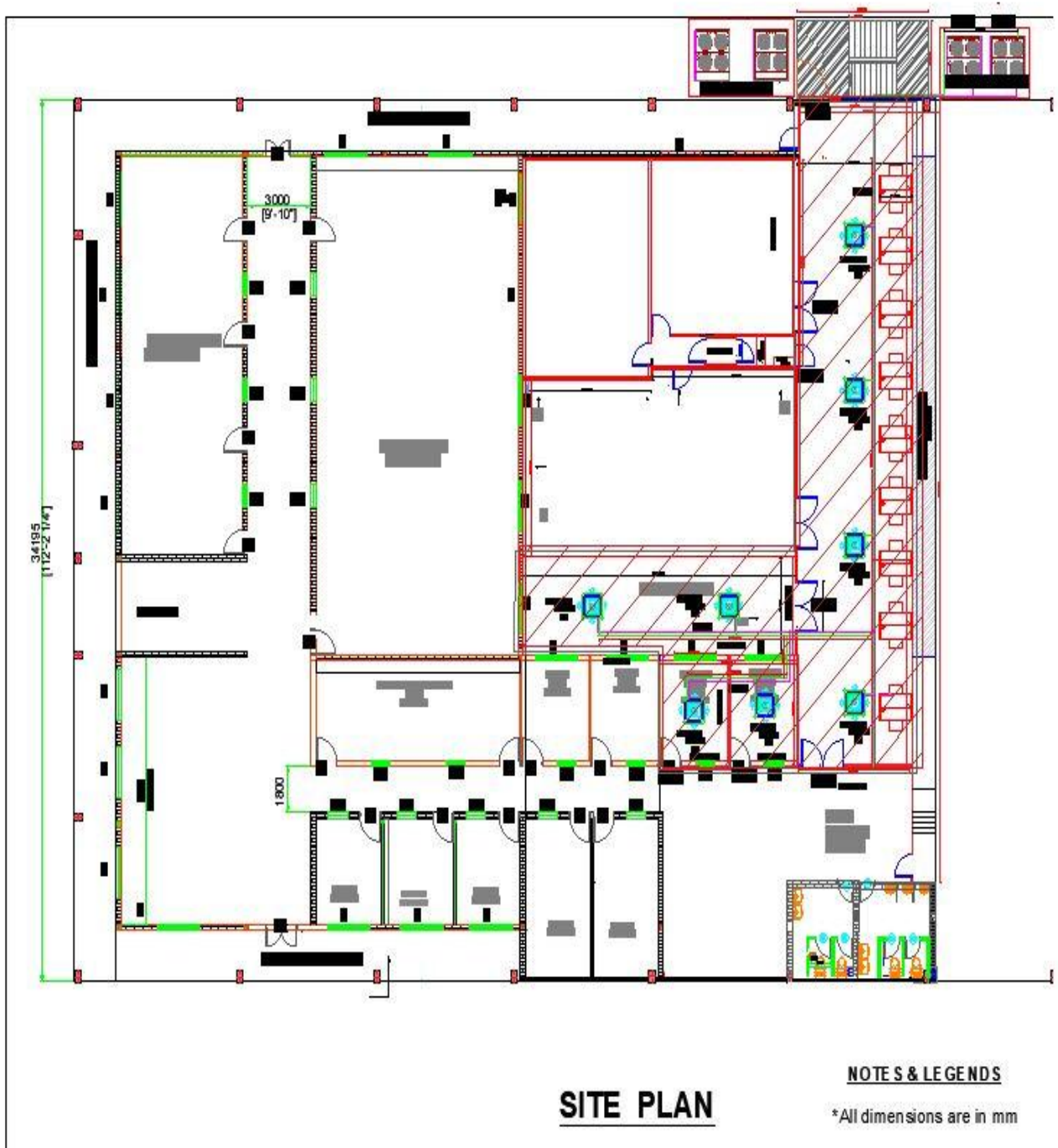
LIST OF APPROVED MAKES

Sl. No.	Item Description	Approved Makes
1	4Way Cassette AC	Carrier/Daikin/Equivalent
2	Piping	TATA/Jindal/Equivalent
3	Butterfly Valve	Advance/Honeywell/Equivalent
4	Flexible Bellow	Easyflex/Resistoflex/Equivalent
5	Motorised Butterfly valve	Honeywell/Johnson Controls/Equivalent
6	LT Cables	Poly Cab/ Havells/KEI/ Equivalent Approved
7	Brass Cable Gland	Dowells/Crompton/Bico/Siemens/Commet/ Equivalent Approved
8	PVC Glands	Peeco,/ Commet,/ Dowells's/ Equivalent Approved
9	Cu Lugs	Peeco/, Commet, /Dowells's/ Equivalent Approved
10	Distribution Boards	Legrand/Schneider/Hager/ Equivalent Approved
11	MS Enclosure	Legrand/Schneider/Hager/ Equivalent Approved
12	MCB	Legrand/Schneider/Siemens/ Equivalent Approved
13	MCCB	Legrand/Schneider/Siemens/Equivalent Approved
14	Cu strip	99% Electrolyte Copper
15	LED lights	Phillips/Havells/Wipro/ Equivalent Approved
16	PVC Conduits	Sudhakar/Polycab/Equivalent Approved
17	Industrial Plug & Sockets with Enclosure	Legrand/Schneider/Equivalent Approved
18	Switches & Sockets Modular	Legrand/Schneider/Equivalent Approved

CHAPTER-V

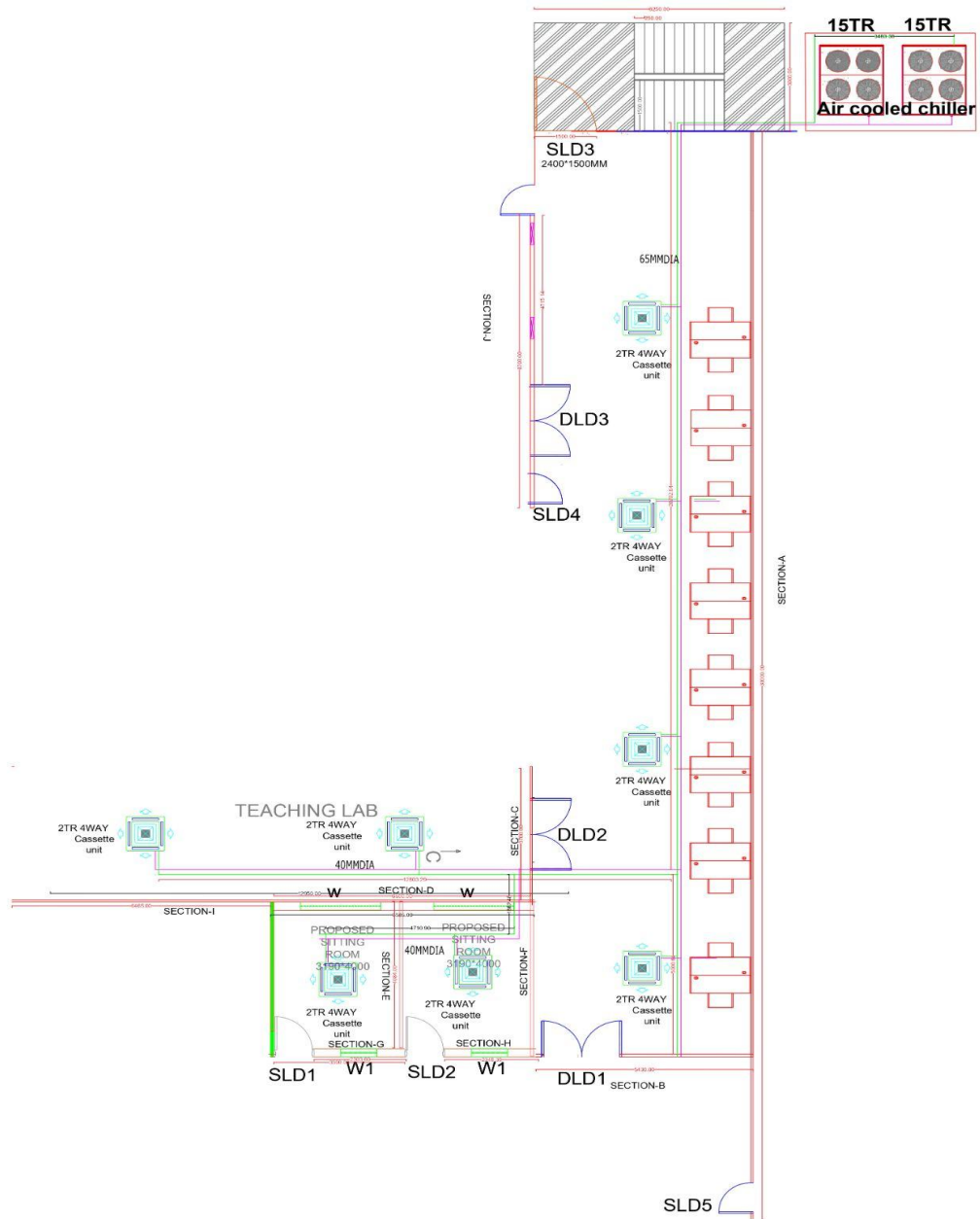
DRAWINGS

TOTAL FLOOR LAYOUT

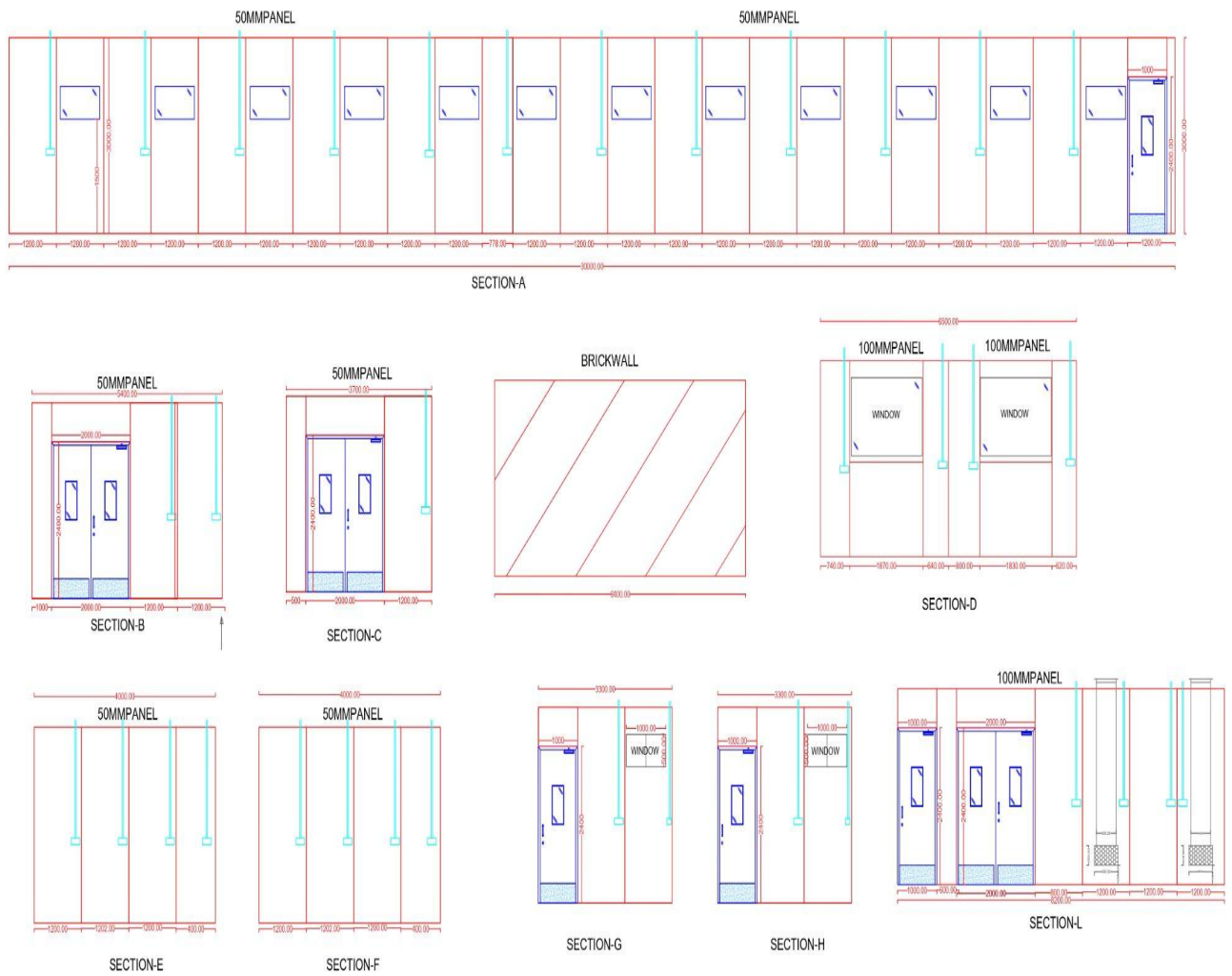


NOTE: Hatched area is the Layout for the work to be carried out.

SITE AREA LAYOUT



SECTION DRAWINGS



CHAPTER-VI

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 an 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 the Bank) (hereinafter referred to as "the Bank") Hereby undertake to pay to TIFR Hyderabad for an amount not exceeding Rs..... (Rupees..... only) on demand by TIFR Hyderabad

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 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 Occ

ANNEXURE-III

(To be submitted on bidder / firm's letterhead)

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 Gol 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:
Bidder**

Seal & Signature of the

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

Site Visit Declaration Certificate (To be submitted on bidder / firm's letterhead)

CERTIFICATE OF TENDERER'S VISIT TO SITE

1. This is to certify that I _____(Name of bidder or his Representative) am from _____(Name of Firm of tendering) visited the site at TIFR, Hyderabad in connection with the Tender Ref No.TIFR/PD/CF26-59/260449, Survey No. 36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad-500046, Telangana, India.
2. Having previously studied the contract documents, I carefully examined the site.
3. I have made myself familiar with all the local conditions likely to influence the works and the cost thereof.
- 4.I further certify that I am satisfied with the description of the work and the explanations given by the said Representative and that I understand perfectly the work to be done as specified and implied in the execution of the contract.

Signed by tendering firm representative and name:

Signed by tenderer and name:

Date:

ANNEXURE-V

(To be submitted on the bidder / firm's letterhead)

FORM OF APPLICATION BY THE CONTRACTOR FOR SEEKING EXTENSION OF TIME

1. Name of contractor: _____
2. Name of work as given in the work order: _____
3. Work Order No. & Date: _____
4. Work Order Value: _____
5. Period allowed for completion of work as per the work order: _____
6. Date of commencement of work: _____
8. Period for which extension of time if has been given by authority previously:

S. No.	Letter No. and Date	Reasons for which extension have been previously given (copies of the previous applications should be attached)	Extension granted	
			Months	Days
(a) 1st extension				
(b) 2nd extension				
Total extension previously given				

10. Period for which extension is applied for at present : _____ and Reason: _____

Submitted to the Authority with a copy to the Engineer-in-charge.

Signature of Contractor: _____

Dated: _____

Contractor Signature

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ANNEXURE-VI

(To be submitted on the bidder / firm's letterhead)

UNDERTAKING REGARDING NOT BLACKLISTING / NON – DEBARMENT

To

The Head,
Department of Technical Services.
TATA INSTITUTE OF FUNDAMENTAL RESEARCH
Plot No.36/P, Gopanpally Village,
Serilingampally Mandal, Ranga
Reddy District. Hyderabad -
500046,
Telangana, India.

We hereby confirm and declare that we, M/s
-----, is not blacklisted/ De-registered/
debarred by any Government department/ Public Sector Undertaking/ Private Sector/ or
any other agency for which we have Executed/ Undertaken the works/Services during
the last 5 years.

Authorised Signatory

Date:

ANNEXURE-VII

(To be submitted on the bidder / firm's letterhead)

Audited Annual Turnover

S.No.	Financial/ Accounting Year	Profit (Rs.)	Loss (Rs.)	Annual Turnover (in INR)
1.				
2.				
3.				

Authorized Signatory
with Seal

Note:

(i) This Audited Annual Turnover for the last 3 years should be certified by Chartered Accountant (CA) as per the format given above duly signed and stamped by the CA on their letterhead.

(ii) The bidder should have an average annual financial turnover (gross) of Rs.18.15 Lakhs during the immediate last three consecutive financial years ending March 31, 2025.

ANNEXURE-VIII

(To be submitted on the bidder / firm's letterhead)

List of Documents to be enclosed along with the bid submission:

Sr. No.	Documents	Attached (Yes / No)
1	Proof of Firm Registration	
2	GST & PAN of the Firm	
3	A valid Labour License	
4	Earnest Money Deposit	
5	A valid Solvency Certificate	
6	Annual Turnover during three previous financial years ending March 31, 2025 duly certified by the licensed Chartered Accountant. Refer to ANNEXURE-VII	
7	Income Tax returns for the last three consecutive financial years ended on March 31, 2025 audited by the licensed Chartered Accountant.	
8	Profit/Loss statements for the last five consecutive financial years ending March 31, 2025 duly certified by the licensed Chartered Accountant.	
9	'Undertaking by the Tenderer as per the specified format in Annexure-II	
10	'Site Visit Declaration Certificate' as per the specified format in Annexure-IV	
11	'Undertaking by the Tenderer' regarding Not Blacklisting / Non-Debarment as per the specified format in Annexure-VI	
12	'Local Content Certificate' by the Tenderer as per the specified format in Annexure-III	
13	Work Completion Certificates along with Work Orders and BOQs as specified the eligibility criteria.	
15	Acceptance of Terms and Conditions of the tender by the tenderer by signing every page of the tender document with stamp.	

CHAPTER-VII**FINANCIAL BID (Part-II):****FINANCIAL BID (PART-II)****Tender No. TIFR/PD/CF26-59/260449****Work: Turnkey Works for Setting up of Student Sitting Space in Trishul Building at TIFRH.****Location: TIFR, Survey No.36/P, Gopanpally (Village), Serilingampally (Mandal), Ranga Reddy Dist., Hyderabad – 500 046.****INSTRUCTIONS:**

1. Tenderer needs to submit the signed copy of the Financial Bid quoting amount in the stipulated format and signed copies of the tender drawings.
2. Rates must be filled both in words and figures. The amount should be worked out for all the items.
3. The bidder shall quote his rates keeping in mind the specifications, terms & conditions, additional and special conditions etc. and nothing extra shall be payable unless otherwise specified.

(To be submitted on the bidder / firm's letterhead with ref. no. and date)

SCHEDULE OF QUANTITIES / BOQ

Work: Turnkey Works for Setting up of Student Sitting Space in Trishul Building First Floor at TIFR, Hyderabad

S. No.	Description	Unit	Qty(A)	Rate(B)	Total Amount (C=A*B)
1	Supplying, installation, testing, and commissioning of 2TR chilled water ceiling-suspended hydronic cassette type fan coil unit with four-way directional airflow and low noise operation. Each unit shall be complete with two rows of deep chilled water cooling coil, multi-blade centrifugal fan, and test reports from NABL/AHRI accredited laboratories. The unit shall include a set of ball valves (with and without strainers), and a 2-way motorized control valve. It shall be provided with an insulated condensate drain pan, drain pump assembly with drain pump failure alarm, and piping connections using copper pipes. The unit shall be equipped with a filter, infrared remote control, LCD display, four-speed motor, and automatic swing louvers with decorative panel. All necessary condensate drain connections shall be included. The unit shall be suitable for 220 ±10% volts, 50 Hz, single-phase power supply, complete in all respects as per specifications.	Nos	8		
2	Supplying, laying/fixing, testing, and commissioning of the 65MM Dia nominal sizes of chilled water piping inside the building, including all necessary clamps, vibration isolators, and fittings, but excluding valves, strainers, gauges, etc. The piping shall be duly insulated with closed-cell elastomeric nitrile rubber insulation of minimum density 45 kg/cu.m, having thermal conductivity of 0.037 W/mK or better at 20°C mean temperature, Class 'O' insulation, applied using suitable rubber-based adhesive. The work shall include complete installation, finishing, and repair of any damage caused to the building during execution, strictly as per specifications and	Rmt	100		

	complete in all respects.				
3	Supplying, laying/fixing, testing, and commissioning of the 40MM Dia nominal sizes of chilled water piping inside the building, including all necessary clamps, vibration isolators, and fittings, but excluding valves, strainers, gauges, etc. The piping shall be duly insulated with closed-cell elastomeric nitrile rubber insulation of minimum density 45 kg/cu.m, having thermal conductivity of 0.037 W/mK or better at 20°C mean temperature, Class 'O' insulation, applied using suitable rubber-based adhesive. The work shall include complete installation, finishing, and repair of any damage caused to the building during execution, strictly as per specifications and complete in all respects.	Rmt	50		
4	Supplying, laying/fixing, testing, and commissioning of the 25MM Dia nominal sizes of chilled water piping inside the building, including all necessary clamps, vibration isolators, and fittings, but excluding valves, strainers, gauges, etc. The piping shall be duly insulated with closed-cell elastomeric nitrile rubber insulation of minimum density 45 kg/cu.m, having thermal conductivity of 0.037 W/mK or better at 20°C mean temperature, Class 'O' insulation, applied using suitable rubber-based adhesive. The work shall include complete installation, finishing, and repair of any damage caused to the building during execution, strictly as per specifications and complete in all respects.	Rmt	16		
5	Supply, Installation, Testing and Commissioning of 65mm Diameter Butterfly valve (Manual) with CI body SS Disc, Nitrile Rubber Seal & O-Ring with matching flanges, bolt & nuts, extended stem etc. Duly insulated to the same specifications as the connected piping. Pressure rating shall be PN 16.	Nos	4		
6	Supply, Installation, Testing and Commissioning of 65mm Diameter flexible connections at inlet and outlet of coolers and pumps with matching flanges, gaskets, control unit, bolt & nuts, etc. Pressure rating shall be PN 16.	Nos	4		

7	Supply, Fixing, Testing and Commissioning of following sizes 65mm Diameter Motorized Butterfly Valves with CI body, SS Disc, O-ring and minimum PN-16 rating, Conforming to BS5155, IS13095 with IP-55 actuator, capable of accepting upto 10V DC and upto 20mA electric signal and providing similar transduced feedback output to control system as required. Duly insulated to the same specifications as the connected piping.	Nos	2		
8	SITC of 50mm drain pipe PVC drain piping heavy duty with supports and insulation with 9 mm thick class 'O' nitrile rubber insulation for ac units drain piping.	Rmt	65		
9	SITC of 25mm drain pipe PVC drain piping heavy duty with supports and insulation with 9 mm thick class 'O' nitrile rubber insulation for insulation for ac units drain piping	Rmt	10		
10	Repair, servicing, testing, and commissioning of the existing bluebox chiller unit, including fault identification and rectification, checking of compressor, condenser, evaporator, expansion valve, condenser fans, electrical and control systems, and replacement of minor defective components as required. The scope also includes leak detection and rectification, system vacuuming, refrigerant gas topping/charging (10.5Kgs) as per OEM recommendations, oil level checking and top-up if required, and testing of all safety controls and interlocks. The work shall include complete trial run and performance testing to ensure proper operation of the system, and shall be carried out as per OEM standards and specifications, complete in all respects. Unit make: Bluebox, Model: SBI0001475, Capacity-15TR.	Nos	2		
11	Supply, Installation, Testing and Commissioning 4 C x 25 sq. mm PVC Armoured Aluminium power Cabling for chillers. Cable shall be as per IS 694 with latest amendments for power circuits including suitable copper lugs for termination in DBs Make: Polycab/Havells/Finolex/RR Cables` including clamps, double compression glands, lugs, end terminations .	RMT	80		

12	Supply, Installation, Testing and Commissioning of 300mm size Factory Fabricated GI ladder type Cable Tray with all accessories for fixing and laying	RMT	40		
13	Supplying and fixing of Unplasticised Poly Vinyl Chloride (UPVC) 3 track sliding windows/door with mesh shutter of reputed make Wintech/ Lesso/ Wento or its equivalent (2-glass shutters and 1-mesh shutter) as per design/ drawing duly manufactured using UPVC reinforced profiles (Composition of profile shall consists a minimum of 5.5 PHR of TiO ₂ and not more than 12 PHR of CaCo ₃ for every 100 parts of PVC resin) of (94 mm x 45 mm)/(80 mm x 52 mm) x 2.20 mm for outer frames, (58 mm x 39 mm)/(54 mm x 38 mm) x 2.20 mm for sliding shutter frames capable of mounting single glazing system structurally reinforced with hot dip galvanized up to 50 microns of minimum thickness of 1.0/1.2 mm prefabricated & welded through fusion welding. The window sash shall be fitted with 5 mm thick clear float glass of reputed make Modi/ Saint Gobain/AIS and mesh shutter frame shall be (42 mm x 25 mm)/(52 mm x 21.5 mm) x 2.0 mm fitted with SS mesh of 304 grade on rollers/ pulley duly fixed with Grey colour TPV Gasket for sash & Glazing bead shall be co-extruded with Grey colour soft PVC. System shall have single point locking with Touch Lock and the system is to be installed at the site using anchor fasteners, silicon rubber sealant, easy glazing/ deglazing at site etc., including cost and conveyance of all materials, accessories, labour charges for transportation, erection at site, over head & profit etc., complete for finished item of work. (1.8*1.2Mts*2Nos, 1*0.5Mts*2Nos)	SQMTR	4		
14	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge. ((3*5*1.2Mts)	CUM	18		

15	Providing and laying M20 grade concrete in position ready mixed or site batched design mix cement concrete for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge(3*5*0.2Mts)	CUM	3		
16	Providing and Construction of Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with Cement mortar 1:6 (1 cement : 6 coarse sand) etc., complete all as per the directions of the Engineer - in - charge.((3*5*1.2Mts)	CUM	18		
17	Providing and fixing Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns(0.2*5Mts+0.2*3Mts)*2	SQMTR	4		
18	Providing and laying M25 grade concrete in position ready mixed or site batched design mix cement concrete for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge(3*5*0.2Mts)	CUM	3		
19	Supply, fabrication, installation and painting of with MS Channels / Angles. Cross members shall be installed across the structural beams wherever	Kgs	1500		

	required for taking the supports for Puf Panel, ducts, AC units. Cross members shall be welded to structural beams and shall be painted with one coat of the primer and two coats of the finish paint.				
20	Providing and fixing factory-made double glazed flush view panel of approved size in PUF insulated partition panel, comprising 5 mm frosted/tinted toughened glass + 12 mm air gap + 5 mm frosted/tinted toughened glass.(or as approved), complete with powder-coated aluminium/UPVC framing, silicone sealing, necessary reinforcement in PUF panel, all fixing accessories, cutting of panel opening, finishing and making good the disturbed surface, complete in all respects as per approved drawings and site requirements.	SQMTR	6.00		
21	Supply and Installation of 100 mm thk. modular powder coated clean room wall panels made of 0.8 mm thk for outer skin and 0.8 mm thk for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt., supports, cut outs, etc. Powder coating thickness shall be 60 to 80 micron. Aluminium interconnecting profiles, floor track for the level adjustment, etc. shall be provided. Coving shall be painted as that of wall / ceiling panels. Panels shall have all the provisions required for services entry, return air grilles, switch boards, isolators, etc. The areas of doors and view panels will not be included in the measurement. All cutouts shall be properly finished with end cover with concealed screws, etc. All cutouts shall be done at factory as per the approved shop drawings. Shop drawings shall be submitted for review and approval. 32 mm dia GI conduits and 2/3 module GI metal box shall be provided for electrical wiring one in each panel as per the drawing. Return air raisers shall be provided in the panel of size 750 x 75 mm and opening shall be provided for air suction(Pre-filter) size 470 x 770 mm or as required made of 24 G shall be provided in the clean room panels wherever	SQMTR	50.00		

	required and as per the drawing in the above cleanroom wall panels of following width. 25 mm thick insulation shall be provided at the back of the return air risers. Return risers shall be provided with one set of MS angle frames with 25 x 25 x 3 mm thick MS angle for connecting to ducting. MS angle frames shall be painted with one coat of primer and two coats of finish paint. Tentative drawing is enclosed and however needs to be provided as per actual requirement. All cutouts shall be done at the factory as per the approved shop drawings.				
22	Supply and Installation of 50 mm thk. modular powder coated clean room wall panels made of 0.8 mm thk for outer skin and 0.8 mm thk for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt., supports, cut outs, etc. Powder coating thickness shall be 60 to 80 micron. Aluminium interconnecting profiles, floor track for the level adjustment, etc. shall be provided. Coving shall be painted as that of wall / ceiling panels. Panels shall have all the provisions required for services entry, return air grilles, switch boards, isolators, etc. The areas of doors and view panels will not be included in the measurement. All cutouts shall be properly finished with end cover with concealed screws, etc. All cutouts shall be done at the factory as per the approved shop drawings. Shop drawings shall be submitted for review and approval. 32 mm dia GI conduits and 2/3 module GI metal box shall be provided for electrical wiring one in each panel as per the drawing.	SQMTR	115.00		
23	Supply and Installation of 50 mm thk. modular powder coated cleanroom ceiling panels made of 0.8 mm thk for outer skin and 0.8 mm thk for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt., supports, cut outs, etc. Powder coating thickness shall be 60 to 80 micron. Panels shall have ceiling suspension system with GI threaded rods, leveling arrangement, Hilti anchor fasteners, aluminium interconnecting profiles, etc. The ceiling panels shall have cutouts for AC's, lights,	SQMTR	265.00		

	provision for fixing the smoke detectors, etc. The cutouts for light fixtures / ACs / etc. will be deducted from the measurement. All cutouts shall be done at factory as per the approved shop drawings. Shop drawings shall be submitted for review and approval. Ceiling shall be capable of taking the dead load and suitable for walking freely.				
24	Supply and Installation of powder coated clean room 50 mm thick single leaf flushed doors made of 0.8 mm thick for outer skin and 0.8 mm thick for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub. mt., with all fittings, view panel, door closure, etc. Size of the door shall be considered tentatively as indicated in the drawing. Powder coating thickness shall be 60 to 80 microns. Doors shall have door frame, double glazing see thru glass / view panel, hardware like door closure, SS handles, SS ball bearing butt hinges and automatic door bottom seal, etc. Each door shutter shall be with lock seam joints at style edges with required no. of stainless steel butt hinges SS304 of size 100mm*75mm-(3nos) with HSN screws. Mortice Lock(make: Door set)-1no., auto drop bottom seal 1 set, SS Sick plate-1set, Dtype 19mm dia *250mm steel handel for pull & push -2no., Door closer (Dorma/ equivalent make) 1no. All the fittings shall be compatible for a clean room. Doors shall have an automatic bottom flap to seal the gap below the door when the door is closed. Utmost care shall be taken in order to arrest the air leaks from the door and an SS strip of 5 mm thick shall be fixed on the floor for the door width to arrest the air leakages from the door. View panel size in each leaf of the door shall be 600 x 300 mm. Complete door hardware and accessories shall be of Dorma make. Door Size : 1000 x 2400 mm 4 nos.	SQMTR	15.00		
25	Supply and Installation of powder coated clean room 50 mm thick double leaf flushed doors made of 0.8 mm thick for outer skin and 0.8 mm thk for inner skin electro zinc steel sheet on both sides with PUF insulation of density 42 kg / cub.	SQMTR	16.00		

	mt., with all fittings, view panel, door closure, etc. Size of the door shall be considered tentatively as indicated in the drawing. Powder coating thickness shall be 60 to 80 microns. Doors shall have door frame, double glazing see thru glass / view panel, hardware like door closure, SS handles, SS ball bearing butt hinges and automatic door bottom seal, etc. Each door shutter shall be with lock seam joints at style edges with required no. of stainless steel butt hinges SS304 of size 100mm*75mm-(3nos) with HSN screws. Mortice Lock(make: Door set)-1no., auto drop bottom seal 1 set, SS Sick plate-1set, Dtype 19mm dia *250mm steel handel for pull & push -2no., Door closer (Dorma/ equivalent make) 1no. All the fittings shall be compatible for clean room. Doors shall have automatic bottom flap to seal the gap below the door when the door is closed. Utmost care shall be taken in order to arrest the air leaks from the door and an SS strip of 5 mm thick shall be fixed on the floor for the door width to arrest the air leakages from the door. View panel size in each leaf of the door shall be 600 x 300 mm. Complete door hardware and accessories shall be of Dorma make. Door Size : 2000 x 2400 mm - 6 nos.				
26	Supply and Installation of Aluminium powder coated coving shall be R 50 and painted with the same colour of ceiling panels, etc. Coving shall be provided at floor to wall corners, wall to ceiling corners and wall to wall corners. External corners also shall be coving wherever is applicable. Coving shall be fixed with snap fit and corner round shall be considered as required. Refer the drawing enclosed.	RMT	220.00		
27	Supply, laying, termination, testing & commissioning of 1100V, 5C X 4 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for power 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	MTR	20		

28	Supply, laying, termination, testing & commissioning of 1100V, 3C X 4 sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for power circuits and laying on existing Concealed PVC Conduit on wall or False ceiling including suitable copper lugs for termination in DBs Make:Polycab/Havells/Finox/RR Cables	MTR	260		
29	Supply, laying, termination, testing & commissioning of 1100V, 3C X 2.5sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for power circuits and laying on existing Concealed PVC Conduit on wall or False ceiling including suitable copper lugs for termination in DBs Make:Polycab/Havells/Finox/RR Cables`	MTR	180		
30	Supply, laying, termination, testing & commissioning of 1100V, 3C X 1.5sq.mm FR PVC insulated copper conductor cable as per IS 694 with latest amendments for power circuits and laying on existing Concealed PVC Conduit on wall or False ceiling including suitable copper lugs for termination in DBs Make:Polycab/Havells/Finox/RR Cables`	MTR	200		
31	Supply , Fixing, Testing and Commissioning of 6 modular switch board (16A Sockets -2Nos, & 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	40		
32	Supply , Fixing, Testing and Commissioning of 3 modular switch board (6A Switches -3Nos) 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	4		
33	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	NOS	1		

	,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 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)				
34	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	1		
35	Supply, installation , testing & commissioning of ISI Marked and accepted standard of 32A, TP 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 same make only. approved (Make: Legrand Catalog No. 4086 58	NOS	1		
36	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 same make only. approved (Make: Legrand Catalog No. 408587 to 408595)	NOS	18		
37	Supply, Installation, testing and Commissioning of LED 36-Watt 2x2 Ceiling Panel Light 3280 LUMENS (Slim, Square, Cool White 6500k) and	NOS	20		

	Light fixture with all required accessories required to be fixed on False ceiling as per specifications, site conditions & as per the instructions of engineer in charge. Catalogue no Wipro CRCO23R036HP65G3 or Equivalent approved.				
38	Supply, Installation, testing and Commissioning of LED 18-Watt 1x1 Ceiling Panel Light 1500 LUMENS (Slim, Square, Cool White 6500k) and Light fixture with all required accessories required to be fixed on False ceiling as per specifications, site conditions & as per the instructions of engineer in charge.	NOS	2		
39	Supply, laying, Fixing of 25mm Heavy Duty PVC conduit (Black Colour) of ISI marked, laying in Puff Panel including/laying in wall including chipping of wall/laying on cable tray/ wall/ceiling/false ceiling /flooring accessories like, bends, PVC Junction Boxes, PVC Dummy Covers etc. to complete the work and as per instructions of Engineer in Charge. Make: Precision	MTR	200		
40	Supply, installation , testing & commissioning of 30A, 5Pin 3P+N+E Industrial Plug & Socket with 25A FP 10kA MCB & MS Powder coated Enclosure Make : Legrand/Havells/C& S/ Schneider (for Main System / Equipment)	SET	1		
41	Supply, Laying & Termination of 25 x 5mm Cu Strip including all accessories like clamps, nut & Bolts etc.	MTR	20		
42	Excavation for cable trenches in soft soil, depth up to 3.0 m including dressing of sides lift up to 3.0 m, including getting out the excavated soil, refilling with sand and or good soil after laying of cable/ pipe etc. in layers of 20 cm, ramming, watering and disposal of surplus excavated soil as directed, within a lead of 50 meters.	CUM	3		
43	Earthing with Cu Earth Plate 600 x 600 x 3 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meters long etc. with charcoal / coke and salt as required	SET	1		

44	Supply, installation , testing & commissioning of 63A, 4P, 10kA MCB with suitable MS enclosure shall be surface/recess mounting , made of sheet steel, dust protected ,duly powder painted along for connecting Incoming & Outgoing Cables. MCB shall be equivalent to Legrand Catalogue No. 4087 02 and MS Enclosure shall be equivalent to Legrand Catalogue No. 5077 93 (Make : Legrand/ ABB/ Siemens /equivalent approved)	NOS	2		
Sub-Total (D)					
GST 18% (E)					
GRAND TOTAL (D+E)					
Total Amount in Words Rs.					
					Only

Note:

1. TIFR Hyderabad has the right to delete any of the 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.
2. Payment will be made as per actual quantities executed at tender rates.
3. Unit rate must be quoted in figures as well as in words.
4. Rates are all inclusive of profit, Transport, Loading & Unloading, Shifting Taxes, etc.
5. The site must be clean and remove all the debris after completion of work.
6. Manufacturer's warranty of respective supply items to be provided.
7. For any deviating items, the contractor shall take prior approval from TIFR Engineer-in with proper rate analysis.