

# Centre Industrial Consultancy & Sponsored Research, IIT Madras Chennai 600 036 PURCHASE SECTION

Email: <u>tender@imail.iitm.ac.in</u> Telephone:(044) 2257 9763

**GSTIN: 33AAAAI3615G1Z6** 



Date: 04.05.2023

The Manager (Project Purchase)

Open Tender Reference No: CRR/JOHR/109/2023/CRRINTERIORS

GEM NAR ID: GEM/GARPTS/04052023/T8WQD52U8LX1 Due Date/Time:24.05.2023@ 3:00 PM

Dear Sir/ Madam,

On behalf of the IC&SR, IIT Madras, Tenders are invited in two bid system from Class-I local suppliers and Class II local suppliers, namely technical and financial bids for

# "Development of Interiors for Centre for Railway Research with Civil, Electrical & Networking, HVAC, Fire Fighting and Fire Alarm Works at 5th Floor, Block A, Research Park IIT Madras."

conforming to the specifications enclosed in Annexure '1'

Tender Documents may be downloaded from Central Public Procurement Portal <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a>. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at "Help for contractors". [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this eProcurement Portal"

Bidders can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, click on "GO" button to view all IIT Madras tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a> as per the schedule attached.

**No manual bids will be accepted.** All tender documents including pre-qualification, Technical and Financial bids should be submitted in the E-procurement portal.

Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be placed in the technical part of the bid, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.

1	LAST DATE for receipt of Tender	:	24.05.2023@ 3:00 PM
	PRE-BID Meeting	:	10.05.2023, Before joining this meeting, bidders should send email
			with details of person who will attend this meeting and their company details along with your queries to secycrr@imail.iitm.ac.in
			on or before 09.05.2023 @ 05:00 PM. Bidders will be intimated on the time schedule and venue details through email.
	Date & Time of opening of Tender	:	25.05.2023 @ 3:00 PM

	GUIDELINES, TERMS AND CONDITIONS OF TENDER						
A	Submission of Tender	: As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal URL: <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a> The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal					
			More information useful for submitting online bids on the CPP Portal may be obtained at: <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a> All tender documents including Technical Bid & Financial Bid should be submitted separately in online CPP portal as per the specified format only. Right is reserved to ignore any tender which fails to comply with the above instructions. No manual bid submission will be entertained.				
В	Instructions for online bid	:	REGISTRATION				
	submission		<ul> <li>Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL:     <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a> by clicking on "Online Bidder Enrollment". Enrolment on the CPP Portal is free of charge.</li> <li>As part of the enrolment process, the bidders will be required to choose a</li> </ul>				
			unique username and assign a password for their accounts.				
			<ul> <li>Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.</li> </ul>				
		<ul> <li>communication from the CPP Portal.</li> <li>Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> with their profile.</li> </ul>					
			<ul> <li>Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.</li> </ul>				
			Bidder then may log in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.				
С	Searching for tender documents	:	• There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.				
			<ul> <li>Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective "My Tender" folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document.</li> </ul>				
			<ul> <li>The bidder should make a note of the unique Tender ID assigned to each tender; in case they want to obtain any clarification / help from the Helpdesk.</li> </ul>				

# Bidder should take into account any corrigendum published on the D **Preparation of bids** : tender document before submitting their bids. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid. Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender document / schedule and generally shall be in PDF / XLS formats as the case may be. Bid documents may be scanned with 100 dpi with black and white option. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Documents" area while submitting a bid and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process. Bidder should log into the site well in advance for bid submission so that Ε Submission of bids he/she can upload the bid in time i.e. on or before the bid submission date and time. Bidder will be responsible for any delay due to other The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document. A standard BOQ format has been provided in **Annexure-3** with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the detail with their respective financial quotes and other details (such as name of the bidder). If the BOQ file is found to be modified by the bidder, the bid will be rejected. • The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission. • The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues. • The uploaded tender documents become readable only after the tender opening by the authorized bid openers. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

F	Assistance to bidders	:	<ul> <li>Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.</li> <li>Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is [0120-4200462, 0120-</li> </ul>
G	General Instructions to the Bidders	:	<ul> <li>4001002,0120-4001005]</li> <li>The tenders will be received online through portal <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a>. In the Technical Bids, the bidders are required to upload all the documents in pdf format.</li> <li>Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a></li> </ul>
			<ul> <li>Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a> under the "Information about DSC".</li> </ul>
2	Marking on Technical Bid		<ul> <li>i. The vendor eligibility criteria, scope of work and technical Specification along with bill of materials details for this tender is given in Annexure 1</li> <li>ii. The tenderer shall go through the Annexures and submit the technical bid.</li> <li>iii. The Technical bid should be submitted in the proforma given as per Annexure -2</li> <li>iv. All technical bids should have the page-wise heading as "Technical Bid" and page no. in all pages with seal and signature of authorized signatory. The total no. of pages should be mentioned at the last page of the documents.</li> <li>The technical bid should consist of all technical details along with catalogue/brochure, model number and other technical, commercial terms and conditions. The technical bid should contain only technical details called for in the prescribed proforma along with the supporting documents. No other details apart from the technical details should be submitted in the technical bid. If any deviation in this regard if found in the technical bid submitted, the tender will be summarily rejected.</li> </ul>

3	Marking on Financial Bid	:	i.	Financial bid should be submitted in the prescribed proforma format as per Annexure-3 in xls format (BOQ) through e-tender only.  No manual or other form of submission of Financial Bid will not be entertained.
			ii. iii.	Financial bid should indicate item-wise price <u>for all the items</u> mentioned in the technical bid.  Total value in the financial bid should be indicated in figures & words clearly.

EMD: The EMD of Rs.3,00,000 to be transferred to the account details mentioned in Annexure 8 and proof should be enclosed in the Technical Bid. Any offer not accompanied with the EMD shall be rejected summarily as non-responsive.

The EMD of the unsuccessful bidders shall be returned within 30 days of the end of the bid validity period. The same shall be forfeited, if the tenderers withdraw their offer after the opening during the bid validity period. The Institute shall not be liable for payment of any interest on EMD.

EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) and Startups as recognized by Department of Industrial Policy & Promotion (DIPP). (MSE/MSME/DIPP PROOF should be enclosed in the cover containing technical bid).

5

#### Performance Security: -

The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD, FD Receipt in the name of "The Registrar, IIT Madras" from any scheduled commercial bank or Bank Guarantee from any scheduled commercial bank in India. The performance security should be furnished within 14 days from the date of the purchase order.

Performance Security in the form of Bank Guarantee: - In case the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed directly to IIT Madras from the Bank.

The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

**Preparation of Tender**: The bidders should submit the bids in two bid system as detailed below.

#### Bid I Technical Bid

The technical bid should consist of Pre-Qualification Criteria (Bidder Eligibility Criteria - I & II) and technical specification compliance sheet as per Annexure 2

#### Bid II Financial Bid

The financial bid should be submitted in excel format (BoQ) as per the proforma (Annexure 3) uploaded in the e-Tender web site. The Quoted price should be for supply and installation of the item and inclusive of all cost and statutory levies at IIT Madras..

## 7 Prices:

- i. The prices quoted must be Nett considering all scope of work, terms & conditions and as per the technical specification mentioned in Annexures 1 The prices quoted by the bidders should be inclusive of GST and other statutory levies.
- ii. The percentage of tax etc. included in the price should be indicated in clear terms. If the inclusive price is not given, we will treat your offered rate as inclusive rate and comparison be made with others. If at the time of comparison of your offer without taxes etc. is happen to be lowest, you are bound to supply as per the offered rate, i.e. without taxes etc.
- iii. Prices should be quoted in INR only.

All conditional tenders will be summarily rejected.

#### 8 Signing of Tender:

The Tender is liable to be rejected if complete information is not given therein or if the particulars and date (if any) asked for in the schedule to the Tender are not fully filled in or not duly signed/authenticated. Specific attention is drawn to the delivery dates and terms and conditions enclosed herewith. Each page of the technical bid required to be signed and bears the official seal of the tenderers.

If the application is made by a firm in partnership, it shall be signed (with seal) by all the partners of the firm above their full typewritten names and current addresses or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed along with current addresses of all the partners of the firm shall also accompany the application.

If a limited company or a corporation makes the application, it shall be signed by a duly authorized person holding power of attorney for signing the application, in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation may be required to furnish satisfactory evidence of its existence. The applicant shall also furnish a copy of the Memorandum of Articles of association duly attested by a Public notary.

## 9 Period for which the offer will remain open:

The Tender shall remain open for acceptance/validity till: **120 days from the date of opening of the tender.** However, the day up to which the offer is to remain open being declared closed holiday for the Indian Institute of Technology Madras, the offer shall remain open for acceptance till the next working day.

For the same tender, either the OEM or the authorized dealer/service provider can only quote. But both of them cannot quote separately for the same tender.

#### 11 Public Procurement – Preference to Make in India:

This tender will be evaluated based on Public Procurement (Preference to Make in India) DIPP, MoCI Order No. 45021/2/2017-PP (BE II) dated 16<sup>th</sup> September 2020 and other subsequent orders issued therein. Accordingly, preference will be given to the Make in India products while evaluating the bids, however, it is the sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India product along with respective documentary evidence as stipulated in the aforesaid order in the technical bid itself. Necessary self-certification about the classification of the supplier/bidder as per the above order should be submitted by the bidder in **Annexure-4.** Non-submission of self-certification will lead to rejection of bid out rightly and the bidder will be treated as non-local supplier. The bidder offering imported products will fall under the category of Non-local suppliers. They can't claim themselves as Class-I Local Suppliers/Class-II Local Suppliers by claiming services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CAMC etc. as local value addition.

#### 12 PRE-QUALIFICATION CRITERIA

#### **Bidder Eligibility Criteria I:**

- 1. Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16<sup>th</sup> September 2020 and other subsequent orders issued therein, shall be eligible to bid in this tender. Declaration for Class-I and Class-II local suppliers should be submitted in the prescribed proforma format as per **Annexure-4**.
- 2. Bidder should confirm their acceptance that they comply with the provisions with report to "Guidelines for eligibility of a bidder from a country which shares a land border with India as detailed at **Annexure-5**. The bidder should submit Certificate for "Bidder from/ Not from Country sharing Land border with India & Registration of Bidder with Competent Authority" as per Order of DoE F.No.6/18/2019-PPD dated 23.07.2020 as mentioned.

#### **Bidder Eligibility Criteria II:**

- 1. The firm should not have been blacklisted / debarred by any Government/ regulatory bodies of India In last 3 Years . A self-declaration format given in **Annexure 6**
- 2. The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid (format is given in **Annexure-7**)
- 3. The Bidder Firms shall be of National reputation having past experience of executing "similar works" (Civil, Interior finishes, Furniture, Furnishings and Electrical & Mechanical Works, HVAC etc. for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals) during the last three years ending 31st December 2022.

Should submit satisfactorily completed work details as per following during the last three years ending 31st December 2022:

- i) Three similar works as prime Interior Contractor each costing Rs 60,00,000/- or
- ii) Two similar works as prime Interior Contractor each costing Rs 80,00,000/- or
- iii) One similar work as prime Interior Contractor each costing Rs 1,00,00,000/-

#### And

The Contractor should have executed at least 1 similar work costing Rs. 60,00,000/- with central government department /Autonomous Bodies/ Central Public Sector Undertakings.

Note: The word similar completed works means Civil & Interior finishes, including Electrical & Mechanical Works for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals (Individually / aggregate of number of works mentioned in each criteria) and should consist of Civil, structural, Interior Finishing / furnishings, including E&M Systems, etc. incorporating advanced Architectural & E&M design concepts with all modern services / amenities including acoustic performance, etc. (Proof of similar works executed shall be furnished along with photographs / views, duly certified by the client).

- 4. The bidder Should have had an average annual turnover of Rs 1,00,00,000/- on construction works during the last three years ending 31st March 2023. (Financial statements / certificates issued by Chartered Accountant should be submitted as proof).
- **5.** For Electrical Works, the contractor should have ESB license.

# Terms of Delivery:

Supplier will be fully responsible for the safe carriage, Installation/Commissioning of goods up to the 5<sup>th</sup> Floor, Block A, Research Park, IITM or named place as per PO, Insurance coverage will be in the scope of the supplier.

The tenderer should indicate clearly the time required for delivery of the item (subject to the approval of the Executive Committee-IIT-Madras). In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

In the event of delay or non-supply of materials/execution of Contract beyond the date of delivery/completion of job. The penalty will be levied @1% per week of delay subject to a max of 10% of the value of purchase order and if the delay is more than accepted time frame by IIT M, the PO would be

#### 14 Evaluation of Bids:

Bid evaluation will take place in two stages.

#### Stage I: Technical Bid evaluation

- 1. Bidder Eligibility Criteria-I will be evaluated first and those bidders who have complied with this criteria alone be evaluated for the Bidder Eligibility Criteria-II and technical Specification evaluation.
- 2. In the 2<sup>nd</sup> stage, the Bidder Eligibility Criteria-II and the technical specification offered by the bidders will be evaluated by the technical committee for compliance. The proposed technical specification offered by the bidder should be equivalent or higher to the specifications mentioned in the technical bid.
- 3. All bidders who have fully complied with Bidder Eligibility Criteria I, II and technical evaluation will only be considered for opening of financial bid.

#### Stage II: Financial Bid Evaluation

The financial bid evaluation will be based on price quoted by the bidder (BoQ). The tender will be awarded to the overall L1 bidder for the total work (Comprising all items).

## 15 | Selection of successful bidder and Award of Order

The order will be directly awarded to the technically qualified bidder as per the condition in para 3A of DIPP, MoCI Order No. 45021/2/2017-PP (BE II) dated 16<sup>th</sup> September 2020.

**16 Completion of work :** Three months from the date of order.

#### 17 Payment:

- No Advance Payment will be made for Indigenous purchase.
- Payment will be made only after supply and satisfactory installation.

#### 18 Warranty and Support:

- All items must have a comprehensive warranty for 3 years
- The vendor is responsible for 3 years' service support.

#### 19 Terms and conditions:

Failure to comply with any of the instructions stated in this document or offering unsatisfactory explanations for non-compliance will likely to lead to rejection of offers.

- **Right of Acceptance:** IIT MADRAS reserves the right to reject the whole or any part of the Tender without assigning any reason or to accept them in part or full.
- 21 Transit Insurance: The Purchaser will not pay separately for Transit Insurance.
- In terms of Rule 173 (iv) of General Financial Rules, 2017 the bidder shall be at liberty to question the bidding conditions, bidding process and/or rejection of its bid.

## 23 Conditions of contract:

Tenderer should quote on the basis of the conditions referred to in Para of the invitation to tender and tender papers. In case these terms and conditions are not acceptable to the tenderer, he should specifically state the deviation(s) there from in the body of the tender.

#### 24 Tenderer shall submit along with this Tender:

Name and full address of the Banker and their swift code and PAN No. and GSTIN number.

# Disputes and Jurisdiction:

Settlement of Disputes: Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate on arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceeding shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai.

a. **The Applicable Law:** The Purchase Order shall be construed, interpreted and governed by the Laws of India. Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.

Any legal disputes arising out of any breach of contact pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

#### 26 | Force Majeure:

The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

- **Risk Purchase Clause:** In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause
- All information including selection and rejection of technical or financial bids of the prospective bidders will be communicated through e-Tender portal. In terms of Rule 173(iv) of General Financial Rule 2017, the bidder shall be at liberty to question the bidding conditions, bidding process and/or rejection of bids.
- The tenderer shall certify that the tender document submitted by him / her are of the same replica of the tender document as published by IIT Madras and no corrections, additions and alterations made to the same. If any deviation found in the same at any stage and date, the bid / contract will be rejected / terminated and actions will be initiated as per the terms and conditions of the contract.
- Due to Covid-19 pandemic the bidders will not be entertained to participate in opening of Bids. Since the tender is e-tender, the opening of the bids may be checked using the respective logins of the bidders.

# **ACKNOWLEDGEMENT**

It is hereby acknowledged that I/We have gone through all the points listed under "Specification, Guidelines, Terms and Conditions" of tender document. I/We totally understand the terms and conditions and agree to abide by the same.

SIGNATURE OF TENDERER ALONG WITH SEAL OF THE COMPANY WITH DATE

#### **ANNEXURE - 1**

Development of Interiors for Centre for Railway Research with Civil, Electrical & Networking, HVAC, Fire Fighting and Fire Alarm Works at 5th Floor, Block A, Research Park IIT Madras.

Tender Ref No: CRR/JOHR/109/2023/CRRINTERIORS

#### (A) PRE-QUALIFICATION CRITERIA

#### 1. Bidder Eligibility Criteria I:

- 1.1 Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16<sup>th</sup> September 2020 and other subsequent orders issued therein, shall be eligible to bid in this tender. Declaration for Class-I local suppliers should be submitted in the prescribed proforma format as per **Annexure-4**
- 1.2 Bidder should confirm their acceptance that they comply with the provisions with report to "Guidelines for eligibility of a bidder from a country which shares a land border with India as detailed at **Annexure-5**. The bidder should submit Certificate for "Bidder from/ Not from Country sharing Land border with India & Registration of Bidder with Competent Authority" as per Order of DoE F.No.6/18/2019-PPD dated 23.07.2020 as mentioned.

#### 2. Bidder Eligibility Criteria II:

- 1. The firm should not have been blacklisted / debarred by any Government/ regulatory bodies of India In last 3 Years .

  A self-declaration format given in **Annexure 6**
- 2. The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid (format is given in **Annexure-7**)
- 3. The Bidder Firms shall be of National reputation having past experience of executing "similar works" (Civil, Interior finishes, Furniture, Furnishings and Electrical & Mechanical Works, HVAC etc. for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals) during the last three years ending 31st December 2022.

Should submit satisfactorily completed work details as per following during the last three years ending 31st December 2022:

- i) Three similar works as prime Interior Contractor each costing Rs 60,00,000/- or
- ii) Two similar works as prime Interior Contractor each costing Rs 80,00,000/- or
- iii) One similar work as prime Interior Contractor each costing Rs 1,00,00,000/-

And

The Contractor should have executed at least 1 similar work costing Rs. 60,00,000/- with central government department /Autonomous Bodies/ Central Public Sector Undertakings.

Note: The word similar completed works means Civil & Interior finishes, including Electrical & Mechanical Works for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals (Individually / aggregate of number of works mentioned in each criteria) and should consist of Civil, structural, Interior Finishing / furnishings, including E&M Systems, etc. incorporating advanced Architectural & E&M design concepts with all modern services / amenities including acoustic performance, etc. (Proof of similar works executed shall be furnished along with photographs / views, duly certified by the client).

- 4. The bidder Should have had an average annual turnover of Rs 1,00,00,000/- on construction works during the last three years ending 31st March 2023. (Financial statements / certificates issued by Chartered Accountant should be submitted as proof).
- **5.** For Electrical Works, the contractor should have ESB license.

#### (B) SCOPE OF WORK

1. The tender is called for Development of Interiors for Centre for Railway Research with Civil, Electrical & Networking, HVAC, Fire Fighting and Fire Alarm Works at 5th Floor, Block A, Research Park IIT Madras.

2. The bidder is required to execute the work as per the drawings (Annexure 9) and specification given below:

#### General

The Scope of work shall comprise of but not limited to Supply of materials, construction, erection, installation, setting to work, integration with services, testing, pre-commissioning, commissioning, trial runs, completion, operations and maintenance of the work specified in the Bill of Quantities, Technical Specifications and drawing. The scope of work includes but not limited to the following:

#### 2) Preliminary and Enabling Works

- i) Preparation of samples, mock-ups, and prototypes.
- ii) Procurement, manufacture, assembling, installation, and construction.
- iii) Integrated testing and commissioning of Works and Equipment.
- iv) Supply of all Spare Parts and special tools.
- v) Preparation of Operation and Maintenance Manuals and training of Employer's personnel in the operation and maintenance of systems, integrated systems, and installed equipment.
- vi) Safety signs to safeguard / caution the workers and other Site related personnel from any accident or mishap during Construction Phase.
  - vii) Protection of existing utilities and services

#### a) Civil Works

Supply, erection/installation, testing of all civil works including flooring, masonry, partitions, doors, finishes, ceiling and acoustic installation, signage etc.

#### b) Electrical Works

Supply, erection / installation, testing and commissioning of Electrification works including Earthing, Cables & Trays, Distribution Boards & Breakers, Wiring & Conduiting, Lighting Fixtures, UPS, Tap off box etc.

#### c) Networking and Telephone conduits:

Supply, erection/installation, testing and commissioning of Networking & Telephone conduiting including sockets, outlets, conduits junction boxes, modules, cables, racks, speakers, microphone, camera, recorders, monitors, power supply units, intercom systems etc.

#### d) HVAC

Supply, erection / installation, testing and commissioning of Air Distribution System, piping, valves, gauges, meters, ducting, grills, diffusers, dampers, actuators, acoustic lining, foils& attus.

#### e) Fire Fighting and Fire Alarm.

Supply, erection / installation, testing and commissioning of Firefighting and Fire Alarm Systems.

- 3. Any change in the above design is not permitted
- 4. The bidder can be an OEM or an authorized dealer (format is given in Annexure-7)
- 5. The bidder should use the Quantity mentioned in the Bill of Material for designing and should choose any of one of the mentioned brands/make of items as per BOM.
- 6. Any other brand other than what mentioned in BOM will not be accepted.
- 7. All materials which are in the BoQ must be submitted for approval by IITM prior to the work/installation. Samples of each material and table setup are required for review and must meet the necessary standards.
- 8. The Contractor will not be entitled, to any compensation for any increase/reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order. The accepted variation in quantity of each individual item of the contract would be upto 100% of the quantity originally contracted. The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever up to the limit of 100% variation in quantity of individual item of works.

9. The Selected bidder need to follow the norms of IITM Research Park for carrying out works as per this tender.

# **BILL OF MATERIAL**

# 1) Civil Abstract

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	UOM
1	4.20A	Providing and laying 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 and using recycled concrete aggregate (RCA) as coarse aggregate and fine aggregate within the permissible utilization, 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 co ncrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing asper direction of the engineer-in-charge; for the following grades of concrete.Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the minimum specified cement content, the contractor shall have discretion to either re-design themix or bear the cost of extra cement.	46.53	CUM
	T	MASONRY		T
2	6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for 13penness1313).	102.74	SQM
		FINISHING		1
3	13.1	12 mm cement plaster of mix : 1:4 (1 Cement : 4 Fine sand / coarse sand)	719.05	SQM
	T	PARTITIONS		T
4	8778	Supply and fixing of 12 mm thick toughened glass partition complete as per instructions	205.71	SQ.M
5	26.43.2	Cement Bonded particle board 8 mm (Termite, Fire & Moisture Resistance), as per IS:14276 : 1995	62.85	SQM
		FLOORING/ WALL TILES		

6	11.41A.3.3	Providing and laying Vitrified tiles in floor in 800MM X 800MM SIZE (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, 14penness14 system and rubber mallet for placing the tiles gently and easily. BRANDS: KAJARIA OR SOMANY 11.41A.3.3 Size of Tile 800 x 800 mm	434.4	SQ.M
7	11.41A.1.4	Providing and laying Vitrified tiles in floor in 800MM X 1600MM size(thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, 14penness14 system and rubber mallet for placing the tiles gently and easily. BRANDS: KAJARIA OR SOMANY 11.41A.1.4 Size of Tile 800 x 1600 mm	26.75	SQM

8	9.136	Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled with 15penness1515t based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with 15penness1515t fire seal strip of size 10x4 mm (minimum) alround the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (Dash fastener to be paid for separately).	5.6	RM
9	9.137	Providing and fixing 50 mm thick glazed fire resistant door shutters  of 60 minutes fire rating conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-incharge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in-charge (panneling to be paid for separately)	3.15	SQM
10	9.138	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m²) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/ powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 60 minutes of fire resistance both integrity & radiation control (EW60) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.	0.27	SQM

11	9.139	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	1	NO
	•	PAINTING/ FINISHING		
12	13.8	Providing and applying Birla white cement based putty of average thickness upto 2 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	719.05	SQM
13	13.60.1	Painting and finishing with emulsion paint with ICI, Asian, Berger of equivalent approved brands and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade paint of approved brand and manufacture. Samples to be approved by EPC and architect.	719.05	SQM

CEILING INSTALLATIONS: Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.

14	12.52.4	12.5 mm thick fully Perforated Gypsum Board tile made from plasterboard having glass fibre conforming to IS: 2095 part I, of size 595x595 mm, having perforation of 9.7x9.7 mm at 19.4 mm c/c with center borders of 48 mm and the side borders of 30 mm, backed with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.79, with 50 mm resin bonded glass wool backing. Brands: Saint Gobain GYPROC, Anutone Pixel 0308 or Knauf Ceiling (Armstrong) Ultima	125	SQM	
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15	12.45.1	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS: 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound, jointing tapes, finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitablyfixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting BRANDS: SAINTGOBAIN GYPROC ANUTONE OR ARMSTRONG	18	SQM
1.0	0.2.4	INBUILT FURNITURE	40.0	6014
16	8.2.1	Granite stone slab colour black, Cherry/Ruby red	10.8	SQM
17	NON DSR	Providing and fixing 12 mm thick toughened glass door of approved brand and manufacture, inclusive of providing and fixing framing, making necessary holes etc. for fixing required door fittings, all complete as per drawing	33.18	SQ.M
18	NON DSR	Providing and fixing Dorma make heavy duty Lock ( Model number 278 )for entrance Main door as per the direction of Engineer in charge.	1	Nos
19	NON DSR	Providing and fixing DORMA patch fitting of PT 20-Top Patch & PT 10-Bottom patch with special accessories for glazed door etc.	16.000	Nos
20	NON DSR	Providing and fixing DORMA patch fitting of US 10 Corner lock with EPC & LKP with special accessories for glazed door etc.,	16.000	Each

21	NON DSR	Providing and fixing Dorma make (Model number XLC -34H ) 30x 600mm long heavy duty tubular handles for entrance Main door as per the direction of Engineer in charge.	16.000	Set					
22	NON DSR	Providing and fixing DORMA floor spring BTS80 (heavy duty) with special accessories for aluminum or glazed door etc.,	16.000	No's					
23	NON DSR	Providing and fixing DORMA floor spring BTS 75V with special accessories for aluminum or glazed door etc.,	16.000	No's					
		PAINTING/ FINISHING		•					
24	NON DSR	Painting and finishing with Textured paint with Asian, Suzuka or Ultra tech and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade paint of approved brand and manufacture. Samples to be approved by EPC and architect.	47.5	SQM					
25	NON DSR	Open grid aluminium ceiling with T15 grid – Anutone Serge Cubix T, with cell size of 150mm or Knauf ceiling (Armstrong) AL Layin open cell with cell size of 100mm or Gyproc – T cell open plenum of cell size 100mm x 100mm	122	SQM					
26	NON DSR	ABSORPTIVE CEILING TREATMENT Supply and Installation of Anutone Subtex or Ecophon Focus E 20 mm thick, Glassfibre core fully encapsulated ceiling tile of size 595x595x15mm having density 100-120Kgs/m3, which is suspended by using 0.3mm thick and 15mm wide pre coated metal T15 grid system.	40	SQM					
27	NON DSR	Supply and installation of Knauf ceiling (ARMSTRONG) METALWORKS BAFFLE CEILING SYSTEM OR Anutone LanceU , metal grille ceilings of size 50x100x3000x0.5mm thk, 300mm c/c, square edge, made up of GMS core, polyester powder coated finish > 60 microns, woodgrain finish, installed using Strut ceiling	70	SQM					
28	NON DSR	Supply and installation of Acrylic sheet canopy above reception desk	7	SQM					
	ACOUSTIC INSTALLATIONS								

29	NON DSR	Supply & installation of Anutone Salon Sonator made of pinewood E1 grade fiberboard, melamine/veneer laminated finish, FR Grade, size 1220x2440x17mm, square edge, volume density of base board 750Kg/m3, weight 12Kgs/m2 installed by using Anutone Strut framework system and Anutone Strut Z bar. Anutone Strut framework system includes Anutone Strut CC25 having thickness 0.55mm, length 3600mm, knurled web 35, depth 20mm and equal flanges 15mm is fastened to wall positioned vertically in a regular manner at 600mm c/c. Anutone Strut Z bar having 40mm height, thickness 1mm is first fixed behind the panels by using suitable fasteners. Another length of Strut Z bar are then installed over Strut CC25 horizontally at spacing so as to match with Strut Z bar at rear of Sonator. Salon sonator panels of size 1220x2440x17mm are then slided into the Strut Z bar fixed on Strut CC25. Long edges of panels should be perpendicular to Strut Z bar and Short edges of the panel are staggered. • Fire (Class) – 1 & P • Acoustics – NRC upto 0.25 • Thermal conductivity (W/mk) – na • Climate (°C, RH) – 40, 70 • Light reflectance (%) – Colour Dependant • Green (VOC, RC %) – Low, 25	30	SQM
30		Supply and Installation of Anutone Subtex NRC burled square edge, FR grade NRC fabric (colour choice) wrapped glassfibre core panel of size 600x1200x25mm having density 100-120Kgs/m3, weight 3.0kg/m2 installed by using impaling clip.Impaling clips are attached directly to the wall/frame work/plywood backing with the points extending outward. The spikes are tipped with Stick S7 adhesive. Then the panels are positioned and pressed into place. Technical Parameters Core  Glassfibre  Fire Class RC up to 0.9  Climate (OC RH) Ves Light reflectance Colour dependent Green (RC %) - 25 Hygiene (VoC, Clean room) – Low, Class 3	8.64	SQM

31	NON DSR	11 10 SOLO CIRCLE 1200 DIA * 40 MM THICK (WITH ACCESSORY), horizontal element with painted edges and without profiles, having recycled content of minimum 70%, with Akutex FT surface in white frost on all sides and can be weekly wet cleaned and daily dusting or vacuum cleaned. The surface should perform for 99% diffused light reflection. The element withstand a permanent ambient RH up to 95% at 30 degree c without sagging, warping or delaminating (ISO 4611). The glass wool core of the element is tested and classified as non combustible according to pr EN ISO 1182. Should have certified by the indoor climate 20penness20, recommended by Swedish asthma & allergy association and can be used in rooms classified as ISO 6/M3.5 Brand: Ecophone or equivalent brand and manufacturer.  WINDOW BLINDS	10	No's
32	NON DSR	Providing & Fixing premium quality Roller blinds with Serge Ferrari Soltis-96 or Hunter Douglas. Prestress Micro-Aerated Solar protection fabric of high tenacity Polyester Yarn with PVC Coating.  Roller Tube: Roller Tube shall be of extruded Aluminium alloy 38mm O.D (or as per system dimension) with a minimum wall thickness of 1.0mm duly anodised for long life. Clutch: Clutch shall be wrap spring design with high strength fibreglass reinforced polyster assembly and high carbon steel springs to transmit motion from driving to driven members of clutch mechanism.Idler: Idler shall be of high strength fibreglass reinforced polyster, consisting of an outside sleeve and centre shaft.  Installation Brackets: Brackets shall be of tomised steel powdercoated to give superior finish. Bracket shall accommodate overhead, side or face mounting with clutch assembly on either end of the roller. Bottom Rail: Bottom of the blind shall be provided with aluminium tube powder coated in a colour matching to the fabric.  Fabric: Composition: 40% Polyester / 60% PVC, Weight:400 g/m2 (+/-5%), Thickness:0.45 mm (+/-5%), Fabric 20penness Factor: 4%, Tensile Strength (Warp/Weft): 220/220 daN / 5cm, Tearing Strength (Warp/Weft): 30/25 daN, Fire Retardancy:M2 (NFP92-507)	102.96	SQ.M

33		Providing and fixing box type cupboard (standalone or wall mounting) of 400 mm to 600 (depth of the cupboard) thick with glazed or plywood openable made of 19mm thick BWR plywood (Kitply / Century ply) and laminated with 1mm thick lamination sheet (Greenlam / Sunmica) for all exposed surfaces and using 6mm thick float glass for glazed shutter (Saint Gobain / Modifloat), 12mm BWR plywood for openable shutter with laminate plywood and inner surfaces finished with two coats of enamel paint (Measurement for cupboard Length x Height). Rate inclusive of necessary fixtures for wall mounting, SS fixtures of M/s Ozone make for handle, hinges, tower bolt, magnetic catcher, cabinet / frog hinges of H'a'fele or Ozone make etc., complete.	5.3	SQM
	ı	WATER PROOFING		
34	NON DSR	Arresting seepage of water from wall surface, from the junction of chujjas, weather shade, cantilever ends, corbels and wall at sill level of windows, jambs of windows etc complete including necessary Grouting, grooving, applying sealant to the openings near Door/window frames plastering, painting etc complete including charges for necessary water proofing sealant 10mm to 20mm depth in concrete slab by power cutter and fixing the SBS membrane in the groove by using sona elastic sealant or thioflex 600 gun grade as per the direction of the Engineer in charge.	272	RMT
35	NON DSR	Precoated/mill finish aluminium gutter	15	RMT
		BRANDING IMAGING		
36	NON DSR	PROVISION FOR STICKER WORK	100	LS
37	NON DSR	Supplying and fixing name board indicating department name made out of Aludecor 3mm Aluminum Composite Panel, with letters should be carved using CNC Router cutting over the ACP panel and carved portion should be sealed with 2mm 040 Imported Acrylic sheet. The rate is inclusive of providing internal lighting	10	LS
38	NON DSR	Provision for branding	1	LS

# 2) Internal Electrification works

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	UOM
1	1.3.3	Wiring for light point / fan point / exhaust fan point / call bell point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable G.I.Box and earthing the point with 1.5 sq mm PVC insulated FRLS PVC insulated copper conductor single core cable etc as required. Group " C "	63	Point

2	1.54.3	Wiring for group controlled (looped light pont/fan point/exhuast fan/call bell point (without independent switch etc.) with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/recessed steel conduit, and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core etc. as required. Group " C "	169	Point
3		Wiring for circuit / sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/recessed steel conduit as required.		
3a	1.7.1	2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire (or 3 x 1.5 sq.mm)	50	Metre
3b	1.7.2	2 x 2.5 sq.mm + 1 x 2.5 sq.mm earth wire	1200	Metre
3c	1.7.3	2 x 4 sq.mm + 1 x 4 sq.mm earth wire	10	Metre
4	Supply an	d drawing following sizes of FRLS PVC insulated copper conductor existing surface/recessed steel/PVC conduit as requi	· •	able in the
4a	1.17.12	3 x 2.5 Sq.mm	137	Metre
4b	1.17.21	3 x 4 Sq.mm	2335	Metre
5		d fixing following sizes of steel conduit along with the accessorie a case of surface conduit, or cutting the wall and making good the conduit as required.		_
5a	1.20.1	20 mm	10	Metre
5b	1.20.2	25 mm	10	Metre
5c	1.20.3	32 mm	326	Metre
6		nd fixing following sizes of medium class PVC conduit along with luding cutting the wall and making good the same in case of rece		
6a	1.21.1	20 mm	420	Metre
6b	1.21.2	25 mm	2150	Metre
6c	1.21.3	32 mm	10	Metre
7	1.31	Supplying and fixing of suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 A modular switch, connections, earthing, etc as required.	61	Each
8	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	15	Each
9	1.56	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required.	34	Each
10	Supplying and	d fixing following modular switch/socket on the existing modular connections but excluding modular plate etc. as requ	•	box including
10a	1.24.1	5/6A Switch	102	Each

10b	1.24.3	15/16A Switch	2	Each
10c	1.24.4	3 pin 5/6A socket outlet	102	Each
10d	1.24.5	6 pin 5/6A socket outlet	2	Each
11	Supplyir	ng and fixing following modular base & cover plate on existing mo required.	dular metal box	es etc. as
11a	1.28.1	1 or 2 module	35	Each
11b	1.28.2	3 Module	34	Each
11c	1.28.3	4 Module	158	Each
11d	1.28.4	6 Module	34	Each
12	1.57	Supplying & fixing suitable size GI box wih modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	727	Each
13	NDSR	Supply, installation, Testing and Commissioning of Linear 20W 4feet length LED Profile-lights (15 Watt /Metre) for installing in False-ceiling together with requisite driver etc. complete as required.	35	Each
14	NDSR	Supplying and fixing of 9W LED 6500K Recessed mounted ceiling Fitting. (Philips / Havells )	107	Each
15	NDSR	Supplying and fixing of 12W LED 6500K Recessed mounted ceiling Fitting. (Philips / Havells )	21	Each
16	NDSR	Supply, installation, Testing and Commissioning of Linear LED Strip-lights (5 Watt /Metre) for installing in Falseceiling together with requisite driver etc. complete as required.	6	Mtr
17	NDSR	Supply, installation, Testing and Commissioning of Linear LED Cove-lights (15 Watt /Metre) for installing in False-ceiling Coves together with requisite driver etc. complete as required.	50	Mtr
18		nd fixing following way, single pole and neutral, sheet steel, MCB ess, complete with tinned copper bus bar, neutral bus bar, earth be powder painted including earthing etc. as required. (But without MCB/RCCB/Iso	oar, din bar, inte	
18a	2.3.2	8 way , Double door.	1	Each
18b	2.3.3	12 way , Double door.	1	Each
19	board, 415 \	and fixing following way, horizontal type three pole and neutral, s /, on surface/ recess, complete with tinned copper bus bar, neutr ctions, powder painted including earthing etc. as required. (But w	al bus bar, eartl	n bar, din bar,
19a	2.4.3	8 way (4 + 24), Double door	3	Each
20		nd fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniatur ve load of following poles in the existing MCB DB complete with o commissioning etc. as required.		
20a	2.10.1	Single pole	92	Each
21	Supplying	and fixing following rating, double pole, 240V, isolator in the exis connections, testing and commissioning etc. as requ	-	mplete with
21a	2.12.2	Double pole	1	Each
	•	·	•	

22	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required			
22a	2.13.2	63A	4	Each
23		nd fixing following rating, double pole, (single phase and neutral), 24 RCCB), having a sensitivity current 30 mA in the existing MCB DB cotesting and commissioning etc. as required.		
23a	2.14.1	25A	1	Each
23b	2.14.2	40A	1	Each
23c	2.14.3	63A	9	Each
24	2.16	Supplying and fixing DP sheet steel enclosure on surface/recess along with 25/32A 240 V "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	1	Each
25	NDSR	Supplying and fixing FP sheet steel enclosure on surface/ recess along with 63A 415 V "C" curve FP MCB complete with connections, testing and commissioning etc. as required.	1	Each
26		and fixing Cable End Box (Loose Wire Box) suitable for following sing distribution board, 240 Volts, on surface/ recess, complete with test		
		as required.		
26a	2.23.2	as required.  For 8 way, Double door SPN MCBDB	1	Each
26a 26b	2.23.3	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB	1	Each
	2.23.3 Supplying	For 8 way, Double door SPN MCBDB	1 ole pole and r	Each neutral, sheet
26b	2.23.3 Supplying	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to	1 ole pole and r	Each neutral, sheet
26b 27	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to  etc.as required.	1 ole pole and r esting and co 2 PE armoured	Each neutral, sheet mmissioning  Each power cable or
26b 27 27a	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of	For 8 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable	1 ole pole and r esting and co 2 PE armoured	Each neutral, sheet mmissioning  Each power cable o
26b 27 27a 28	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad	For 8 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.	1 ple pole and resting and co  2 PE armoured me pipe/ exist	Each neutral, sheet mmissioning  Each power cable o ting cable tray
26b 27 27a 28 28a	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad	For 8 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable  4 x 16 sq.mm Al Arm. Cable	1 ple pole and resting and co  2 PE armoured pre pipe/ exist	Each neutral, sheet mmissioning  Each power cable outing cable tray
26b 27 27a 28 28a 28a 28b	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR  NDSR	For 8 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip distribution board, 415 Volts, on surface/ recess, complete with the etc.as required.  For 8 way, Double door TPN MCBDB  following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable	1 ple pole and resting and contesting and contestin	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr
26b 27 27a 28 28a 28b 28c	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR  NDSR  NDSR	For 8 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable  4 x 16 sq.mm Al Arm. Cable	1 ple pole and resting and coresting and cor	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr Mtr Mtr
26b 27 27a 28 28a 28b 28c 28d	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable  4 x 16 sq.mm Al Arm. Cable  4 x 16 Sq.mm Cu Arm. Cable	1 ple pole and resting and corrections and corrections and corrections are pipe/existed.  10 85 10 10	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr
26b 27 27a 28 28a 28b 28c 28d 28e	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR Supplying ar	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable 3 x 10 sq.mm Al Arm. Cable 4 x 16 sq.mm Al Arm. Cable 4 x 16 Sq.mm Cu Arm. Cable 3½ x 25 sq.mm Al Arm. Cable	1 pole pole and resting and competitions and competitions are strong and competitions and competitions are pipe/ existed as a second and competitions are pipe/ existe	Each neutral, sheet mmissioning  Each power cable of ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Mtr Tofollowing size
26b 27 27a 28 28a 28b 28c 28d 28e 28f	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR Supplying ar	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable 3 x 10 sq.mm Al Arm. Cable 4 x 16 sq.mm Cu Arm. Cable 3½ x 25 sq.mm Al Arm. Cable 3½ x 50 sq.mm Al Arm. Cable 3½ x 50 sq.mm Al Arm. Cable	1 pole pole and resting and competitions and competitions are strong and competitions and competitions are pipe/ existed as a second and competitions are pipe/ existe	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Mtr Tofollowing size
26b 27 27a 28 28a 28b 28c 28d 28e 28f 29	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR Supplying ar of PVC i	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable 3 x 10 sq.mm Al Arm. Cable 4 x 16 sq.mm Cu Arm. Cable 3½ x 25 sq.mm Al Arm. Cable 3½ x 50 sq.mm Al Arm. Cable and making end termination with brass compression gland and alum insulated and PVC sheathed / XLPE aluminium conductor cable of 1.	1 pole pole and resting and constitution of the pole and resting and restin	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Mtr following size s required.
26b 27 27a 28 28a 28b 28c 28d 28e 28f 29 29a	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR NDS	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with to etc.as required.  For 8 way, Double door TPN MCBDB  f following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable 4 x 16 sq.mm Al Arm. Cable 4 x 16 Sq.mm Cu Arm. Cable 3½ x 25 sq.mm Al Arm. Cable 3½ x 50 sq.mm Al Arm. Cable and making end termination with brass compression gland and alum insulated and PVC sheathed / XLPE aluminium conductor cable of 1.  3 x 6 Sq.mm Cu Arm. Cable	1 ple pole and resting and corresting and corresting and corrections are pipe/ existed as 10 and 10 and 25 and 10	Each neutral, sheet mmissioning  Each power cable o ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Tollowing size s required.  Each
26b 27 27a 28 28a 28b 28c 28d 28e 28f 29 29a 29b	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR NDS	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trig B distribution board, 415 Volts, on surface/ recess, complete with the etc. as required.  For 8 way, Double door TPN MCBDB  following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable 3 x 10 sq.mm Al Arm. Cable 4 x 16 sq.mm Al Arm. Cable 3½ x 25 sq.mm Al Arm. Cable 3½ x 50 sq.mm Al Arm. Cable and making end termination with brass compression gland and alum insulated and PVC sheathed / XLPE aluminium conductor cable of 1.  3 x 6 Sq.mm Cu Arm. Cable 3 x 10 sq.mm Al Arm. Cable 3 x 10 sq.mm Cu Arm. Cable	1 pole pole and resting and constitution of the pole and resting and restin	Each neutral, sheet mmissioning  Each power cable of ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Control of the co
26b 27 27a 28 28a 28b 28c 28d 28e 28f 29 29a 29b 29c	2.23.3 Supplying a steel, MCI  2.24.3 Supplying of 1.1 KV grad  NDSR NDSR NDSR NDSR NDSR NDSR NDSR NDS	For 8 way, Double door SPN MCBDB  For 10 way, Double door SPN MCBDB  and fixing Cable End Box (Loose Wire Box) suitable for following trip B distribution board, 415 Volts, on surface/ recess, complete with the etc. as required.  For 8 way, Double door TPN MCBDB  following sizes one number PVC insulated and PVC sheathed / XLF e conforming to IS:1554/Part-1/1970 of following size on wall /hur i/c clamps, saddles, bolt and nuts etc as required.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable  4 x 16 sq.mm Al Arm. Cable  3½ x 25 sq.mm Al Arm. Cable  3½ x 50 sq.mm Al Arm. Cable  and making end termination with brass compression gland and alum insulated and PVC sheathed / XLFE aluminium conductor cable of 1.  3 x 6 Sq.mm Cu Arm. Cable  3 x 10 sq.mm Al Arm. Cable  3 x 10 sq.mm Al Arm. Cable  3 x 10 sq.mm Al Arm. Cable  4 x 16 sq.mm Al Arm. Cable	1 ple pole and resting and corresting and corresting and corrections are pipe/ existed as 10 and 10	Each neutral, sheet mmissioning  Each power cable of ting cable tray  Mtr Mtr Mtr Mtr Mtr Mtr Tollowing size s required.  Each Each Each Each

	<b>- a y a a a</b>	fixing of one number PVC insulated and PVC sheathed / XLPE pov following size on cable tray as required.	ver cable of 1.1	KV grade of
30a	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	205	Mtr
30b	7.8.2	Above 35 sq.mm and upto 95 sq. mm (clamped with 25x3 MS flat clamp)	25	Mtr
31	thickness n	nd installing following size of perforated Hot Dipped Galvanised ir ot less than 50 micron) with perforation not more than 17.5%, in ors, suspended from the ceiling with G.I suspenders including G.I	convenient sect	tions, joined
31a	4.6.1	100 mm width X 50 mm depth X 1.6 mm thickness	10	Mtr
32b	4.6.2	150 mm width X 50 mm depth X 1.6 mm thickness	45	Mtr
32	(Galvanisa	g and installing following size of perforated Hot Dipped Galvanise tion thickness not less than 50 micron) with perforation not more red with connectors, suspended from the ceiling with G.I suspend etc. as required.	than 17.5%, in	convenient
32a	4.7.1	100 mm width X 50 mm depth X 1.6 mm thickness	5	Mtr
32b	4.7.2	150 mm width X 50 mm depth X 1.6 mm thickness	8	Mtr
33		tion thickness not less than 50 micron) with perforation not more led with connectors, suspended from the ceiling with G.I suspend etc. as required.		
33a	4.8.1	100 mm width X 50 mm depth X 1.6 mm thickness	1	Mtr
33b	4.8.2	150 mm width X 50 mm depth X 1.6 mm thickness	4	Mtr
34	3meters wit	g of GI/metal 1 compartment raceway with its following accesso h 2.5sqmm copper wire including floor cutting, fine plastering with all other accessories as required as per the site condition for fix couplers to be used in between the joining of raceway.	th chicken mesh king the same. (1	, hardwares
34a	NDSR			
		75mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.	95	Mtr
34b	NDSR	with suitable coupler for jointing, riser & fixing brackets and	95 30	Mtr Mtr
34b 34c	NDSR NDSR	with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  100mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and		
		with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  100mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  150mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and	30	Mtr
34c	NDSR	with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  100mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  150mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  150x150x65mm metal - Floor junction box (socket frame, Junction Box/Floor box with base, flyovers, lid and the	30 40	Mtr Mtr
34c 34d	NDSR  NDSR  NDSR  Supply & Fix the furnitur	with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  100mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  150mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.  150x150x65mm metal - Floor junction box (socket frame, Junction Box/Floor box with base, flyovers, lid and the disposable cover protection)  225x225x65mm metal - Floor junction box (socket frame, Junction Box/Floor box with base, flyovers, lid and the	30 40 29 9 In for perfect intended alongwith institutions	Mtr  Nos  Nos  egration into tallation kits

36	Supply and fixing of following sizes of PVC Trunking with cover and its following accessories like joints, end cap, flat angles, Variable internal/external Angle. All complete as per specifications, drawings and / or as directed by the Engineer.						
36a	NDSR	80MM X 50MM (65MM width)	200	Mtr			
37	mounted type	Supply, installation, testing and commissioning of 415V cubical type, fully compartmenalised, floor mounted type main switch board fabricated with 14G CRCA sheet, powder coated with Siemens grey (RAL 7032) after seven tank process and complete with bolted design and all incoming & outgoing switch gears as per the following.					
37a	NDSR	NDSR Main Panel 1 Set					

#### Incomer:

- I. 200A, 4P Automatic Transfer switch with controller, Provide ON, OFF push button with ON Delay timer for manual control & spreader- 1 no.
- II. 200A, TPN, 25KA, MCCB with thermal magnetic releases and rotary handle mechanism & spreader 1 No.
- III. Phase indication lamps(R,Y,B) 1 set.
- IV. ON/OFF/TRIP Indication lamps 1 set.
- V. CT ratio 200/5A,CL:1.0 tape insulated bar primary type with suitable sorting links. 3Nos. 1 Set.
- VI. Metering:Multifunction meters cl:1.0 measured with following parameters: V,A,F,PF,KW,KWH & Phase sequence. 1 Set
- VII. Busbar:
- VIII. 200A, TPN, 25KA, for 1 sec Aluminium bus bars
- IX. Phase: current density not more than 0.8A/sq.mm
- X. Neutral: half of the phase current (0.5 x phase)
- XI. Earth: 25x3mm copper flat
- XII. Outgoing:
- XIII. 32A DP MCB 'C' Curve 10kA- 1 No
- XIV. 40A DP MCB 'C' Curve 10kA- 1 No
- XV. 63A, TPN, 18KA, MCCB with thermal magnetic releases and rotary handle mechanism & spreader 4 Nos.
- XVI. 100A, TPN, 25KA, MCCB with thermal magnetic releases and rotary handle mechanism & spreader 1 No.
- XVII. 63A, TPN, 18KA, MCCB with thermal magnetic releases and rotary handle mechanism & spreader 1 No. with kwhr sub metering

38	NDSR	Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.	1	Set
39	NDSR	Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.	1	Set
40	5.14	Providing and fixing 25mm x 5 mm CU strip on surface or in recess for connections etc. as required.	5	Mtr
41	5.15	Providing and fixing 25mm x 5 mm G.I strip on surface or in recess for connections etc. as required.	85	Mtr
42	5.17	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing as required.	15	Mtr

# 3) Network & Telephone conduit

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	иом
1	Supplying	and fixing following modular switch/ socket on the existing modular including connections but excluding modular plate etc. as re	•	ch box
1a	1.24.6	Telephone socket outlet	50	Each
1b	1.24.7	TV Antenna socket outlet	5	Each
2	1.19	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, sheilded with fine tinned copper braid and protected with PVC sheath in existing surface/recessed steel / PVC conduit as required.	160	Mtr
3		Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephonecable in the existing surface/ recessed steel/ PVC conduit as required.		
4	1.18.2	2 Pair	1401	Mtr
5	NDSR	50 Pair	10	Mtr
6		Supply and fixing of the following telephone Krone type junction boxes enclosed in MS box with hinged cover with lock & key arrangements etc. The item including necessary clamping and making good the same in case of recessed mounting as required. All complete as per specifications, drawings and / or as directed by the Engineer.		
7	NDSR	50 - pair KJB	1	Set
8	NDSR	Supply, installation, testing and commissioning of the TEC approved ISDN EPABX system upto 4 Line in: Extendable to 75 intercom connection. Intel Microprocessor BPL Model Sigma INDX type of advanced system or equivalen type as acceptable to the client with suitable battery charger, all complete as per specifications and / or as direcyted by the Engineer. with following specifications	1	Set
9	NDSR	Supply and fixing of RJ-45 modular type Data outlet mounted on existing modular box complete with existing metal / Pvc box, front plate, screws and fixing accessories etc.	58	Each
10		Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required. (for telephone & data outlet)		
11	1.27.1	1 or 2 Module (75mmX75mm)	28	Each
12	1.53.1	Supplying and drawing of 4 pair CAT 6 LAN unarmoured computer networking cable in the existing cable management system/ surface/recess/PVC conduit etc as required.	1662	Mtr

13	NDSR	Supply, fixing and termination of high quality rack mounted type patch panel with one number of 24 port switch, fixing frames, links and interconnections, necessary accessories etc., all complete as per specifications, drawings and / or as directed by the Engineer.	3	Each
14	NDSR	Supply, fixing and termination of high quality wall mounted type 12U floor mountable powder coated Rack with 3x5A Power Manager, 1 position fan, min 1 nos of shelf, Front Glass double door with Lock & key with suitable network port switch, fixing frames, links and interconnections, necessary accessories etc., all complete as per specifications, drawings and / or as directed by the Engineer.	1	Each
15	NDSR	Supplying and installing of 8 Watts, Wall/ceiling mounted type high quality metallic grill type 100V line speaker with built-in line matching transformer and necessary mounting boxes and fixing accessories.	8	Each
16	NDSR	Supply, laying and termination of 2 core 1.5 sq.mm flexible copper cable laid in exisitng tray/conduit/raceways from Amplifier to speaker and from speaker to other speakers, all complete as per specifications, drawings and / or as directed by the Engineer.	100	Mtr
17	NDSR	Supplying and installing of amplifier rack unit complete with one no. ten zones voice alarm controller with 250W amplifier with USB Port. The items including of suitable mixer amplifier /booster amplifier, line matching transformer, power supply unit, connection strip, mounting desk etc.,	1	Set
18	NDSR	Supplying and installing of microphone (call station) for 10 zones unidirectional communication/announcement with emergency button for remote emergency activation.	1	Each
19	NDSR	Supplying and fixing of wall or ceiling mounted type Fixed Dome or Bullet type Camera 2.0 Megapixel high-performance CMOS, Analog HD output, up to 1080P resolution True Day/Night, DNR, Smart IR Up to 30m IR distance, IP66 weatherproof with all necessary BNC connectors and fixing accessories as required.	7	Each
20	NDSR	Supply and fixing of 8 PoE Switches for CCTV IP Camera on suitable zinc-passivated box complete with metal / Pvc box, front plate, screws and fixing accessories etc.	1	Each
21	1.53.1	Supplying and drawing of 4 pair CAT 6 LAN unarmoured computer networking cable in the existing cable management system/ surface/recess/PVC conduit etc as required.	160	Mtr

22	NDSR	Supplying and installing of 8 Channel Network Video Recorder with Max 320Mbps incoming bandwidth Smart H.265+/H.265/ Smart H.264+/H.264/MJPEG Up to 12MP resolution preview and playback Support 8 SATA HDDs up to 10TB Each, 4 USB (2 USB3.0, 2USB2.0) 2 HDMI / 2 VGA simultaneous video output Support Multi-brand network cameras Support RAID 0/1/5/10 Mobile Software: iCMOB, gCMOB CMS Software: KVMS Pro. The items including supply of 4TB hard disk, connectors, pins and providing complete configuration etc.	1	Each
23	NDSR	Supplying and installing of Power Supply Unit along with necessary Battery backup, suitable for 1 nos. 8 channel network video recorder system.	1	Each
24	NDSR	Supplying and installing of 32" LED colour monitor and fixing accessories.	1	Each

# 4) FIRE FIGHTING AND FIRE ALARM SYSTEM

Α		FIRE ALARM SYSTEM					
SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	иом			
1.0	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics / LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5 % V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be complete with all accessories . The panel shall be complete as per specifications.						
	17.2.1.2	17.2.1.2 Two Loop Panel.		Each			
2.0	17.2.4	Supplying, installation, testing & commissioning of intelligent analog addressable photo thermal detector complete with mounting base complete as required.	57	Each			
3.0	17.2.5	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required.	24	Each			
4.0	17.2.6	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required.	2651	Each			
5.0	17.2.7	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	4	Each			

6.0	17.2.9	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed temperature thermistor complete with base as required.	ith rate of rise 6 Each		
7.0	17.2.10	Supplying, installation, testing & commissioning of addressable fire control module complete as required.	2	Each	
8.0	17.2.14	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	2	Each	
9.0	17.2.15	Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required.	2	Each	
10.0	17.5.2	Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.	420.00	meter	
11.0	Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.				
	1.21.1	20 mm	128	meter	
	1.21.2	25 mm	20.00	meter	
12.0	NDSR	Supplying, installing, testing and commissioning of power supply unit which provides 24V DC output for connecting all relay control modules and other modules. The power supply unit will be located in fire control room at ground floor and in designated location preferably near to FA/PA shaft in typical floors.	1	Each	
В		FIRE FIGHTING SYSTEM			
13.0	18.7	Providing, laying, testing & commissioning of 'C' class heavy d to IS 3589 / IS 1239 including welding and fittings like elbows, s bolts, gaskets etc. and fixing the pipe on the wall/ceiling with frame and painting with two or more coats of synthetic ename complete as required:	tees, flanges, ta suitable clamp/s	pers, nuts supports	
	18.7.1	25 mm dia	160.00	meter	
	18.7.2	32 mm dia	25.00	meter	
	18.7.3	40 mm dia	22.00	meter	
	18.7.4	50 mm dia	50.00	meter	
	18.7.5	65 mm dia	30.00	meter	
	18.7.6	80 mm dia	17.00	meter	
	18.7.7	100 mm dia	12.00	meter	
14.0	18.11	Supplying, fixing, testing and commissioning of butterfly val bronze/gunmetal seat duly ISI marked complete with nuts, I conforming to IS 13095 of following sizes as re	bolts, washers, g	_	
	18.11.5	100 mm dia	1.00	set	
15.0	18.21	Providing, fixing, testing & commissioning of 15mm dia quart of rating 68 degree centigrade with required ac		orinklers	
	18.21.1	Pendent Sprinkler	85.00	Each	
	18.21.3	Horizontal side wall sprinkler	617	Each	

16.0	18.25	Supplying, installation, testing and commissioning of sprinkler flexible pipe (UL Listed) of Stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI ( Burst ) with branch line ( inlet ) 25mm NPT male thread to sprinkler head ( Outlet ) 15 mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required .			
	18.25.2	1000 mm	1578	Each	
	18.25.4	1500 mm	85.00	Each	
17.0	18.29	Providing, installation, testing and commissioning of adjustable rosette plate for 15 mm dia in white finish UL listed or FM approved complete as required .	85.00	Each	
18.0		Supplying, installing and commissioning Portable Fire extinguishers of following type & capacity.			
	NDSR	ABC powder type fire extinguisher of 4 Kgs. Capacity, with initial filling (Mono Ammonium Phosphate Powder 90) in brand new cylinder with powder coated finish, Stored Pressur type, Pressure Gauge, Controllable discharge mechanism with Hose & Nozzle, confirming to IS:15683. (ABC Dry Chemical Powder- MAP 90%)	4.00	Each	
	NDSR	Carbon-di- oxide type fire extinguisher of 4.5 kgs. Capacity, CO2 gas as per IS 15222 with controll discharge mechanism fitted with Hose & Horn applicable on Class B fire rating 21B confirming to IS: 15683.	2.00	Each	

# 5) Internal HVAC works

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	иом
1	16.1	INSULATED CHILLED WATER PIPING ( resin bonded fiber glass insulation) Supplying , laying/ fixing, testing and commissioing og following nominal sizes of chilled water piping inside the building ( with necessary clamps, vibration isolators and fittings but excluding valves, strainers,gauges etc) duly insulated with 80 Kg/cum density resin bonded fiber glass or 144 Kg/cu m densiity minerak wool (non combustible)pipe setion insulation covered with a layer of 120 gm/sqm plythene sheet ( vapour barrier) and finally applying 0.63mm aluminium sheet cladding complete with type3, grade 1 roofing feltstrip (as per IS:1322 as amended up to date ) at joints and reparing of damage to building etc. as per specifications and as required.		
		Note: The pipes of sizes 150mm & below shall be M.S 'C' class as per IS:1239 and pipes size above 150mm shall be welded black steel pipe heavy classs as per IS:3589, from minmum 6.35mm thick M.S sheet for pipes upto 350mm dia and from minimum 7mm thick MS sheet for pipes of 400mm dia and above		
1a	16.1.9	80mm dia (50mm thick insulation )	50	Metre

2	NDSR	Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories. 32mm	30	sq.m
3	16.7.1	Butterfly valve (Manual ) with C I body ss dics , Nitrile rubb pressure rating for chilled water/hot eater circulation	_	pn16
3a	16.7.1.5	80mm dia	2	each
4	16.7.2	Balancing valve with built in measurement facility with C I bo with EPDM coated disc with long pitch with protected out pressure rating for chilled water/hot eater circulation	oipe insulation &	
4a	16.7.2.5	80mm dia	2	each
5	16.7.3	Non return valve with duel plate of CI body ss plates vulcaniz & pn16 pressure rating for chilled water/hot eater circu		-
5a	16.7.3.5	80mm dia	1	each
6	16.7.4	Y- Strainer of ductile CI body flanged with ss strainer for ch circulation as specified.	nilled water/hot	eater
6a	16.7.4.5	80mm dia	1	each
7	16.8	Providing and fixing in position the mercury in glass industrial type thermometers.	1	each
8	16.9	Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.	2	each
9	16.12.1	supply. Installation, balancing and commissioning of factor rectangular / round/ spiral flat oval ducting complete with approved drawing and specifications of following sheet thickness	supports etc. a	s per
9a	16.12.1.1	Thickness 0.8 mm sheet	63.00	sq.m
9b	16.12.1.2	Thickness 0.63 mm sheet	441.00	sq.m
10	16.14	supply. Installation, testing and commissioning of Motorize mounted GI volume control damper with enthalpy sensor and (minium 1.5 sq.mm) for integration within AF	d necessary con	e) duct
10a	16.14.1	Damper	1.49	sq.m
10b	16.14.2	Actuator	19	each
11	16.15	Supplying & fixing of powder coated extruded aluminium supply air grills with aluminium volume control dampers as per specifications	2.16	sq.m
12	16.16	Supplying & fixing of powder coated extruded aluminium Return air grills with louvers but without volume control dampers cmplete as required.	0.41	sq.m
13	16.17	Supplying & fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	1.85	sq.m
14	16.18	Supplying & fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	1.11	sq.m

15	16.20	Supplying & fixing testing commissioning of fire dampers in branch and return air path as and where required of sizes it damper shall be motorized and spring return so as to close the power failure automatically and open the same in case of pospring return action shall be closed in the event of fire signal as per specifications.	/c control wiring e damper in the wer being resto	g, the event of red.The	
15a	16.20.1	Fire damper	2	sq.m	
15b	16.20.2	Actuator	6	each	
16	16.21	Supply and fixing of acoustic lining of supply air duct and plenum with 25mm thick resin bonded glass wool having density of 32 kg/m3 with 25mm x 25mm Gl section of 1.25 mm thick, at 600mm centre tp centre covered with reinforced plastic tissue paper and 0.5mm thick performed aluminimum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, cprx compound eyc. complete as required and as per specifications.	30.00	sq.m	
17	16.22	Supply and fixing of acoustic lining on wall and ceiling of ahu rooms with 25mm thick, density of 32 kg/cu.m rsin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25x50x50x50x25 mm made of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80mm thick performed aluminimum sheet etc., complete as required and as per specifications.	120.00	sq.m	
18	16.23	Supplying and fixing of following thickness duly laminated a finish closed cell niltrile rubber (class-o) insulation on the exist suitable adnesive for nitrile rubber. The joints shall be sealed we thick self adhesive nitrile rubber tape insulation complete as required. Valves should have pressure rating of 25 km.	sting duct after a ith 50mm wide per specifiations	applying and 3mm	
18a	16.23.1	19mm	504	sq.m	
19	16.26	supply. Installation , testing and commissioning of factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (puf) insulation factory injected between then by injection moulding machine, complete with blower section with blower suitable for static pressure as required minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminimum finned copper tubes ( tubes thickness not less than 0.5 mm)cooling coil of 6 row deep, filter section with 50mm thick metal viscous/ washable eynthetic type air prefilters, belt drive package with TEFC drive motor of efficiency class IE3 suitable for 415±10% volts, 50 Hz, 3 Phase AC supply suitably designed for variable frequency drive applications, drain connections, SS (18G) drain pan with PUF insulation, 150mm dia, dial type pressure gauges (2 nos.) and industrial type thermometers (2 nos) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangements etc., complete as per specifications and of following capacities.			
19a	16.26.14	34000 CMH	1	Set	

## **ANNEXURE - 2**

Development of Interiors for Centre for Railway Research with Civil, Electrical & Networking, HVAC, Fire Fighting and Fire Alarm Works at 5th Floor, Block A, Research Park IIT Madras.

Tender Ref No: CRR/JOHR/109/2023/CRRINTERIORS

## TECHNICAL BID COMPLIANCE STATEMENT

## (A) PRE-QUALIFICATION CRITERIA

Sl.No.	Description	Complied/ Not Complied	Ref. Page No.
1	Bidder Eligibility Criteria I:		
1	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 <sup>th</sup> September 2020 and other subsequent orders issued therein, shall be eligible to bid in this tender. Declaration for Class-I and Class-II local suppliers should be submitted in the prescribed proformat format as per <b>Annexure-4</b>		
2	Bidder should confirm their acceptance that they comply with the provisions with report to "Guidelines for eligibility of a bidder from a country which shares a land border with India as detailed at Annexure-5. The bidder should submit Certificate for "Bidder from/ Not from Country sharing Land border with India & Registration of Bidder with Competent Authority" as per Order of DoE F.No.6/18/2019-PPD dated 23.07.2020 as mentioned.		
Ш	Bidder Eligibility Criteria II:		
1	The firm should not have been blacklisted / debarred by any Government/ regulatory bodies of India In last 3 Years . A self-declaration format given in Annexure – 6		
2	The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid (format is given in <b>Annexure-7</b> )		

3	The Bidder Firms shall be of National reputation having past experience of executing "similar works" (Civil, Interior finishes, Furniture, Furnishings and Electrical & Mechanical Works, HVAC etc. for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals) during the last three years ending 31st December 2022.  Should submit satisfactorily completed work details as per following during the last three years ending 31st December 2022:  i) Three similar works as prime Interior Contractor each costing Rs 60,00,000/- or  ii) Two similar works as prime Interior Contractor each costing Rs 80,00,000/- or  iii) One similar work as prime Interior Contractor each costing Rs 1,00,00,000/-	
	The Contractor should have executed at least 1 similar work costing Rs. 60,000,00/- with central government department /Autonomous Bodies/ Central Public Sector Undertakings	
	.Note: The word similar completed works means Civil & Interior finishes, including Electrical & Mechanical Works for Multi-storeyed Institutional Buildings / Corporate Offices / Hotels / Super Speciality Hospitals (Individually / aggregate of number of works mentioned in each criteria) and should consist of Civil, structural, Interior Finishing / furnishings, including E&M Systems, etc. incorporating advanced Architectural & E&M design concepts with all modern services / amenities including acoustic performance, etc. (Proof of similar works	
4	The bidder Should have had an average annual turnover of Rs 1,00,00,000/- on construction works during the last three years ending 31st March 2023. (Financial statements / certificates issued by Chartered Accountant should be submitted as proof).	
5	For Electrical Works, the contractor should have ESB license.	

# (B) TECHNICAL SPECIFICATION SHEET

# 1) Civil Abstract

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	UOM	Complied/Not Complied	Ref. Page No.
1	4.20A	Providing and laying 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 and using recycled concrete aggregate (RCA) as coarse aggregate and fine aggregate within the permissible utilization, 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 asper direction of the engineer-in-charge; for the following grades of concrete.Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the minimum specified cement content, the contractor shall have discretion to either re-design themix or bear the cost of extra cement.	46.53	CUM		
2	6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	102.74	SQM		
		FINISHING				
3	13.1	12 mm cement plaster of mix : 1:4 (1 Cement : 4 Fine sand / coarse sand)	719.05	SQM		
		PARTITIONS	<u> </u>			
4	8778	Supply and fixing of 12 mm thick toughened glass partition complete as per instructions	205.71	SQ.M		
5	26.43.2	Cement Bonded particle board 8 mm (Termite, Fire &	62.85	SQM		

Moisture Resistance), as per IS:14276 : 1995			
FLOORING/ WALL TILES			
Providing and laying Vitrified tiles in floor in 800MM X 800MM SIZE (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily. BRANDS : KAJARIA OR SOMANY 11.41A.3.3 Size of Tile 800 x 800 mm	434.4	SQ.M	
Providing and laying Vitrified tiles in floor in 800MM X 1600MM size(thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily. BRANDS: KAJARIA OR SOMANY 11.41A.1.4 Size of Tile 800 x 1600 mm	26.75	SQM	
11.41A.1.4 Size of Tile 800 x 1600 mm   DOORS/ WINDOWS			

8	9.136	Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled with vermuculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumuscent fire seal strip of size 10x4 mm (minimum) alround the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (Dash fastener to be paid for separately).	5.6	RM	
9	9.137	Providing and fixing 50 mm thick glazed fire resistant door shutters of 60 minutes fire rating conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in-charge (panneling to be paid for separately)	3.15	SQM	
10	9.138	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m²) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/ powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-incharge with glass of required thickness having 60 minutes of fire resistance both integrity & radiation control (EW60) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and	0.27	SQM	

		calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.				
11	9.139	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	1	NO		
	•	PAINTING/ FINISHING				
12	13.8	Providing and applying Birla white cement based putty of average thickness upto 2 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	719.05	SQM		
13	13.60.1	Painting and finishing with emulsion paint with ICI, Asian, Berger of equivalent approved brands and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade paint of approved brand and manufacture. Samples to be approved by EPC and architect.	719.05	SQM		
dip	ped galvanize	in true horizontal level, suspended on inter lockid steel sections (galvanized @ 120 grams/sqm,	both side inc	lusive)		
dip consize to cel 120 0.30 to ceiling for runne fixe rod cente	ped galvanize sisting of mair 24x38 mm manter and cross nm long space 0x600 mm an mm thick (ming form grids of app services like overs to be suspend to ceiling with galvaniar to center all		both side incompleted at 1200 mm inimum) she to form a gr 24x25 mm n 1200x600 mm and laying ing/making, ectors etc. Ma 27 x 37 x 25 4 mm GI adjustant and IT-sections per specificat	lusive) and of a center eet, 1200 id of nade of m panel false opening ain "T" x1.6 mm ustable 00 mm shall be		

including providing ar made of special set from M.S. sheets an coating of 120 gms/sc as per IS: 277 and co of size 25 mm wide flanges of 27 mm at centre to centre, or ceiling with dash fast 50mm long with 6mm of cleat fixed to to 25x10x0.50 mm of re & bolts of required angle hanger fixed channels 45x15x0.9 spacing of 1200 mm which the ceiling so bottom wedge of flanges of 26 mm ear mm, at 450 mm centifixed in a direction intermediate channel made out of 2.64 mm wire at every junct perimeter channels on the perimeter of wall/partition with the 450 mm centre, with screws @ 230 mm into gypsum board to perimeter channel with screws @ 230 mm into gypsum board to perimeter channel with recommental pointing and finish of tapered and board with recommental pointing to primer suitable for manufacturer's specification and directure of suitablyfixed, all compound in 3 layers on both sides of jour primer suitable for manufacturer's specification and directured but excluding BRANDS: SAINTGOBA OR ARMSTRONG	alse ceiling at all height and fixing of frame work betions, power pressed and galvanized with zince and (both side inclusive) ansisting of angle cleats and the stener 12.5 mm dia and a dia bolts, other flange and the angle hangers of quired length with nuts are also dia bolts, other flange and other end of with intermediate G.I. and running at the accentre to centre, to be a centre to centre, to be a centre to centre, to be a centre to centre, shall be perpendicular to G.I. and with connecting clips dia and 230 mm long G.I. ation, including fixing and the fixed to be help of rawl plugs at a 25mm long dry wall be a centre did finishing of ceiling section and the help of dry wall are and the help of dry wall as many at the ded jointing compound in the help of dry wall as many at a 230 mm c/c, and finishing to a flush and the square edges of the ded jointing compound in and two coats of board, all as per cification and also a making openings for iffusers, cutouts made perimeter channels plete as per drawings, ation of the Engineer in the cost of painting the cost of the cost of the cost of the cost of the c	SQM	
16 8.2.1 Granite stone slab colored	our black, Cherry/Ruby 10.8	SQM	
	WINDOWS		

17	NON DSR	Providing and fixing 12 mm thick toughened glass door of approved brand and manufacture, inclusive of providing and fixing framing, making necessary holes etc. for fixing required door fittings, all complete as per drawing	33.18	SQ.M	
18	NON DSR	Providing and fixing Dorma make heavy duty Lock (Model number 278) for entrance Main door as per the direction of Engineer in charge.	1	Nos	
19	NON DSR	Providing and fixing DORMA patch fitting of PT 20-Top Patch & PT 10-Bottom patch with special accessories for glazed door etc.	16.000	Nos	
20	NON DSR	Providing and fixing DORMA patch fitting of US 10 Corner lock with EPC & LKP with special accessories for glazed door etc.,	16.000	Each	
21	NON DSR	Providing and fixing Dorma make (Model number XLC -34H) 30x 600mm long heavy duty tubular handles for entrance Main door as per the direction of Engineer in charge.	16.000	Set	
22	NON DSR	Providing and fixing DORMA floor spring BTS80 (heavy duty) with special accessories for aluminum or glazed door etc.,	16.000	No's	
23	NON DSR	Providing and fixing DORMA floor spring BTS 75V with special accessories for aluminum or glazed door etc.,	16.000	No's	
		PAINTING/ FINISHING			
24	NON DSR	Painting and finishing with Textured paint with Asian, Suzuka or Ultra tech and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade paint of approved brand and manufacture. Samples to be approved by EPC and architect.	47.5	SQM	
25	NON DSR	Open grid aluminium ceiling with T15 grid - Anutone Serge Cubix T, with cell size of 150mm or Knauf ceiling (Armstrong) AL Layin open cell with cell size of 100mm or Gyproc - T cell open plenum of cell size 100mm x 100mm	122	SQM	
26	NON DSR	ABSORPTIVE CEILING TREATMENT Supply and Installation of Anutone Subtex or Ecophon Focus E 20 mm thick, Glassfibre core fully encapsulated ceiling tile of size 595x595x15mm having density 100-120Kgs/m3, which is suspended by using 0.3mm thick and 15mm wide pre coated metal T15 grid system.	40	SQM	

27	NON DSR	Supply and installation of Knauf ceiling (ARMSTRONG) METALWORKS BAFFLE CEILING SYSTEM OR Anutone LanceU, metal grille ceilings of size 50x100x3000x0.5mm thk, 300mm c/c, square edge, made up of GMS core, polyester powder coated finish > 60 microns, woodgrain finish, installed using Strut ceiling  Supply and installation of Acrylic sheet	70 7	SQM	
		canopy above reception desk			
		ACOUSTIC INSTALLATIONS  Supply & installation of Anutone Salon			
29	NON DSR	Supply & installation of Anutone Salon Sonator made of pinewood E1 grade fiberboard, melamine/veneer laminated finish, FR Grade, size 1220x2440x17mm, square edge, volume density of base board 750Kg/m3, weight 12Kgs/m2 installed by using Anutone Strut framework system and Anutone Strut Z bar. Anutone Strut framework system includes Anutone Strut CC25 having thickness 0.55mm, length 3600mm, knurled web 35, depth 20mm and equal flanges 15mm is fastened to wall positioned vertically in a regular manner at 600mm c/c. Anutone Strut Z bar having 40mm height, thickness 1mm is first fixed behind the panels by using suitable fasteners. Another length of Strut Z bar are then installed over Strut CC25 horizontally at spacing so as to match with Strut Z bar at rear of Sonator. Salon sonator panels of size 1220x2440x17mm are then slided into the Strut Z bar fixed on Strut CC25. Long edges of panels should be perpendicular to Strut Z bar and Short edges of the panel are staggered. • Fire (Class) – 1 & P  • Acoustics – NRC upto 0.25  • Thermal conductivity (W/mk) – na  • Climate (°C, RH) – 40, 70  • Light reflectance (%) – Colour Dependant  • Green (VOC, RC %) – Low, 25	30	SQM	

30	Supply and Installation of Anutone Subtex NRC burled square edge, FR grade NRC fabric (colour choice) wrapped glassfibre core panel of size 600x1200x25mm having density 100-120Kgs/m3, weight 3.0kg/m2 installed by using impaling clip.Impaling clips are attached directly to the wall/frame work/plywood backing with the points extending outward. The spikes are tipped with Stick S7 adhesive. Then the panels are positioned and pressed into place. Technical Parameters Core - Glassfibre  Fire - Class 1 & P  Acoustics - NRC up to 0.9  Climate (OC RH) - 40, 90  Termite resistance - Yes  Light reflectance - Colour dependent  Green (RC %) - 25  Hygiene (VoC, Clean room) - Low, Class 3	8.64	SQM	
31 NON DSR	11 10 SOLO CIRCLE 1200 DIA * 40 MM THICK (WITH ACCESSORY), horizontal element with painted edges and without profiles, having recycled content of minimum 70%, with Akutex FT surface in white frost on all sides and can be weekly wet cleaned and daily dusting or vacuum cleaned. The surface should perform for 99% diffused light reflection. The element withstand a permanent ambient RH up to 95% at 30 degree c without sagging, warping or delaminating (ISO 4611). The glass wool core of the element is tested and classified as non combustible according to pr EN ISO 1182. Should have certified by the indoor climate labeling, recommended by Swedish asthma & allergy association and can be used in rooms classified as ISO 6/M3.5 Brand: Ecophone or equivalent brand and manufacturer.	10	No's	

32	NON DSR	Providing & Fixing premium quality Roller blinds with Serge Ferrari Soltis-96 or Hunter Douglas. Prestress Micro-Aerated Solar protection fabric of high tenacity Polyester Yarn with PVC Coating. Roller Tube: Roller Tube shall be of extruded Aluminium alloy 38mm O.D (or as per system dimension) with a minimum wall thickness of 1.0mm duly anodised for long life. Clutch: Clutch shall be wrap spring design with high strength fibreglass reinforced polyster assembly and high carbon steel springs to transmit motion from driving to driven members of clutch mechanism.Idler: Idler shall be of high strength fibreglass reinforced polyster, consisting of an outside sleeve and centre shaft. Installation Brackets: Brackets shall be of tomised steel powdercoated to give superior finish. Bracket shall accommodate overhead, side or face mounting with clutch assembly on either end of the roller. Bottom Rail: Bottom of the blind shall be provided with aluminium tube powder coated in a colour matching to the fabric. Fabric: Composition: 40% Polyester / 60% PVC, Weight:400 g/m2 (+/-5%), Thickness:0.45 mm (+/-5%), Fabric Openess Factor: 4%, Tensile Strength (Warp/Weft): 220/220 daN / 5cm, Tearing Strength (Warp/Weft): 30/25 daN, Fire Retardancy:M2 (NFP92-507)	102.96	SQ.M	
		INBUILT FURNITURE			
33		Providing and fixing box type cupboard (standalone or wall mounting) of 400 mm to 600 (depth of the cupboard) thick with glazed or plywood openable made of 19mm thick BWR plywood (Kitply / Century ply) and laminated with 1mm thick lamination sheet (Greenlam / Sunmica) for all exposed surfaces and using 6mm thick float glass for glazed shutter (Saint Gobain / Modifloat), 12mm BWR plywood for openable shutter with laminate plywood and inner surfaces finished with two coats of enamel paint (Measurement for cupboard Length x Height). Rate inclusive of necessary fixtures for wall mounting, SS fixtures of M/s Ozone make for handle, hinges, tower bolt, magnetic catcher, cabinet / frog hinges of H'a'fele or Ozone make etc., complete.	5.3	SQM	

34	NON DSR	Arresting seepage of water from wall surface, from the junction of chujjas, weather shade, cantilever ends, corbels and wall at sill level of windows, jambs of windows etc complete including necessary Grouting, grooving, applying sealant to the openings near Door/window frames plastering, painting etc complete including charges for necessary water proofing sealant 10mm to 20mm depth in concrete slab by power cutter and fixing the SBS membrane in the groove by using sona elastic sealant or thioflex 600 gun grade as per the direction of the Engineer in charge.	272	RMT	
35	NON DSR	Precoated/mill finish aluminium gutter	15	RMT	
		BRANDING IMAGING			
36	NON DSR	PROVISION FOR STICKER WORK	100	LS	
37	NON DSR	Supplying and fixing name board indicating department name made out of Aludecor 3mm Aluminum Composite Panel, with letters should be carved using CNC Router cutting over the ACP panel and carved portion should be sealed with 2mm 040 Imported Acrylic sheet. The rate is inclusive of providing internal lighting	10	LS	
38	NON DSR	Provision for branding	1	LS	

## 2) Internal Electrification works

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	иом	Complied/Not Complied	Ref. Page No.
1	1.3.3	Wiring for light point / fan point / exhaust fan point / call bell point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable G.I.Box and earthing the point with 1.5 sq mm PVC insulated FRLS PVC insulated copper conductor single core cable etc as required. Group " C "	63	Point		
2	1.54.3	Wiring for group controlled (looped light pont/fan point/exhuast fan/call bell point (without independent switch etc.) with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/recessed steel conduit, and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core etc. as required. Group " C "	169	Point		
3		Wiring for circuit / sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/recessed steel conduit as required.				

3a	1.7.1	2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire (or 3 x 1.5 sq.mm)	50	Metre	
3b	1.7.2	2 x 2.5 sq.mm + 1 x 2.5 sq.mm earth wire	1200	Metre	
3c	1.7.2	2 x 4 sq.mm + 1 x 4 sq.mm earth wire	10	Metre	
30		nd drawing following sizes of FRLS PVC insulated			
4	core	cable in the existing surface/recessed steel/PV	equired.		
4a	1.17.12	3 x 2.5 Sq.mm	137	Metre	
4b	1.17.21	3 x 4 Sq.mm	2335	Metre	
5	surface /	ng and fixing following sizes of steel conduit alou recess including painting in case of surface cond making good the same in case of recessed con	duit, or cuttin	g the wall and	
5a	1.20.1	20 mm	10	Metre	
5b	1.20.2	25 mm	10	Metre	
5c	1.20.3	32 mm	326	Metre	
6		ng and fixing following sizes of medium class PV es in surface / recess including cutting the wall a in case of recessed conduit as requ	and making g	•	
6a	1.21.1	20 mm	420	Metre	
6b	1.21.2	25 mm	2150	Metre	
6c	1.21.3	32 mm	10	Metre	
7	1.31	Supplying and fixing of suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 A modular switch, connections, earthing, etc as required.	61	Each	
8	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	15	Each	
9	1.56	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required.	34	Each	
		g and fixing following modular switch/socket on	•	•	
10	& switch	n box including connections but excluding modu	ılar plate etc.	as required.	
10a	1.24.1	5/6A Switch	102	Each	
10b	1.24.3	15/16A Switch	2	Each	
10c	1.24.4	3 pin 5/6A socket outlet	102	Each	
10d	1.24.5	6 pin 5/6A socket outlet	2	Each	
11	Supply	ing and fixing following modular base & cover p metal boxes etc. as required.	late on existi	ng modular	
11a	1.28.1	1 or 2 module	35	Each	
11b	1.28.2	3 Module	34	Each	
11c	1.28.3	4 Module	158	Each	
11d	1.28.4	6 Module	34	Each	

12	1.57	Supplying & fixing suitable size GI box wih modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	727	Each	
13	NDSR	Supply, installation, Testing and Commissioning of Linear 20W 4feet length LED Profile-lights (15 Watt /Metre) for installing in False-ceiling together with requisite driver etc. complete as required.	35	Each	
14	NDSR	Supplying and fixing of 9W LED 6500K Recessed mounted ceiling Fitting. (Philips / Havells )	107	Each	
15	NDSR	Supplying and fixing of 12W LED 6500K Recessed mounted ceiling Fitting. (Philips / Havells )	21	Each	
16	NDSR	Supply, installation, Testing and Commissioning of Linear LED Strip-lights (5 Watt /Metre) for installing in False-ceiling together with requisite driver etc. complete as required.	6	Mtr	
17	NDSR	Supply, installation, Testing and Commissioning of Linear LED Cove-lights (15 Watt /Metre) for installing in False- ceiling Coves together with requisite driver etc. complete as required.	50	Mtr	
18	distributi	ying and fixing following way, single pole and ne on board, 240 V, on surface/ recess, complete w I bus bar, earth bar, din bar, interconnections, p earthing etc. as required. (But without MCB/	vith tinned co owder painte	opper bus bar, ed including	
18a	2.3.2	8 way , Double door.	1	Each	
18b	2.3.3	12 way , Double door.	1	Each	
19	steel, N coppe painte	ng and fixing following way, horizontal type threw MCB distribution board, 415 V, on surface/recestribus bar, neutral bus bar, earth bar, din bar, intended including earthing etc. as required. (But without the contract of	ss, complete terconnection	with tinned ns, powder B/Isolator)	
19a	2.4.3	8 way (4 + 24), Double door	3	Each	
20	circuit br	ring and fixing 5 A to 32 A rating, 240/415 V, 10 eaker suitable for inductive load of following ponplete with connections, testing and commission	les in the exi	sting MCB DB	
20a	2.10.1	Single pole	92	Each	
21		ng and fixing following rating, double pole, 240° complete with connections, testing and comm		_	
21a	2.12.2	Double pole	1	Each	
22		g and fixing following rating, four pole, 415 V, is omplete with connections, testing and commiss		-	
22a	2.13.2	63A	4	Each	
23	residua	and fixing following rating, double pole, (single I current circuit breaker (RCCB), having a sensiti MCB DB complete with connections, testing ar required.	vity current 3	30 mA in the	

23a	2.14.1	25A	1	Each	
23b	2.14.2	40A	1	Each	
23c	2.14.3	63A	9	Each	
24	2.16	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32A 240 V "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	1	Each	
25	NDSR	Supplying and fixing FP sheet steel enclosure on surface/ recess along with 63A 415 V "C" curve FP MCB complete with connections, testing and commissioning etc. as required.	1	Each	
26		ng and fixing Cable End Box (Loose Wire Box) su neutral, sheet steel, MCB distribution board, 24 complete with testing and commissioning et	O Volts, on su	urface/ recess,	
26a	2.23.2	For 8 way, Double door SPN MCBDB	1	Each	
26b	2.23.3	For 10 way, Double door SPN MCBDB	1	Each	
27		ng and fixing Cable End Box (Loose Wire Box) su neutral, sheet steel, MCB distribution board, 41 complete with testing and commissioning e	.5 Volts, on su	urface/ recess,	
27a	2.24.3	For 8 way, Double door TPN MCBDB	2	Each	
28		ured power cable of 1.1 KV grade conforming to g size on wall /hume pipe/ existing cable tray i/o nuts etc as required.			
28a	NDSR	3 x 6 Sq.mm Cu Arm. Cable	10	Mtr	
28b	NDSR	3 x 10 sq.mm Al Arm. Cable	85	Mtr	
28c	NDSR	4 x 16 sq.mm Al Arm. Cable	10	Mtr	
28d	NDSR	4 x 16 Sq.mm Cu Arm. Cable	10	Mtr	
28e	NDSR	3½ x 25 sq.mm Al Arm. Cable	90	Mtr	
28f	NDSR	3½ x 50 sq.mm Al Arm. Cable	25	Mtr	
29		olying and making end termination with brass co inium lugs for following size of PVC insulated an aluminium conductor cable of 1.1 KV grade	nd PVC sheath	ned / XLPE	
29a	NDSR	3 x 6 Sq.mm Cu Arm. Cable	2	Each	
29b	9.1.7	3 x 10 sq.mm Al Arm. Cable	6	Each	
29c	9.1.33	4 x 16 sq.mm Al Arm. Cable	2	Each	
29d	9.1.33	4 x 16 Sq.mm Cu Arm. Cable	2	Each	
29e	9.1.20	3½ x 25 sq.mm Al Arm. Cable	6	Each	
29f	9.1.22	3½ x 50 sq.mm Al Arm. Cable	4	Each	
30	Laying	and fixing of one number PVC insulated and PVC cable of 1.1 KV grade of following size on cable			
30a	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	205	Mtr	
30b	7.8.2	Above 35 sq.mm and upto 95 sq. mm (clamped with 25x3 MS flat clamp)	25	Mtr	

31	cable tra more tha	ng and installing following size of perforated Ho ay (Galvanisation thickness not less than 50 mic in 17.5%, in convenient sections, joined with co ceiling with G.I suspenders including G.I bolts &	cron) with per innectors, sus	foration not pended from			
31a	4.6.1	100 mm width X 50 mm depth X 1.6 mm thickness	10	Mtr			
32b	4.6.2	150 mm width X 50 mm depth X 1.6 mm thickness	45	Mtr			
32	cable tra perforation	and installing following size of perforated H y "bends" (Galvanisation thickness not les on not more than 17.5%, in convenient section d from the ceiling with G.I suspenders includi	ss than 50 ns, joined wit	micron) with th connectors,			
32a	4.7.1	100 mm width X 50 mm depth X 1.6 mm thickness	5	Mtr			
32b	4.7.2	150 mm width X 50 mm depth X 1.6 mm thickness	8	Mtr			
33	cable tray not more	and installing following size of perforated Hot I "Tee" (Galvanisation thickness not less than 50 than 17.5%, in convenient sections, joined with ceiling with G.I suspenders including G.I bolts &	O micron) wit connectors,	h perforation suspended			
33a	4.8.1	100 mm width X 50 mm depth X 1.6 mm thickness	1	Mtr			
33b	4.8.2	150 mm width X 50 mm depth X 1.6 mm thickness	4	Mtr			
34	should be fine plas	Fixing of GI/metal 1 compartment raceway with earthed every 3meters with 2.5sqmm copper value tering with chicken mesh, hardwares, Clamps and as per the site condition for fixing the same. (1 used in between the joining of race	floor cutting, ccessories as				
34a	NDSR	75mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.	95	Mtr			
34b	NDSR	100mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.	30	Mtr			
34c	NDSR	150mm x 38mm sinlge compartmentized Metal Raceways with suitable coupler for jointing, riser & fixing brackets and accessories with all complete as required.	40	Mtr			
34d	NDSR	150x150x65mm metal - Floor junction box (socket frame,Junction Box/Floor box with base, flyovers, lid and the disposable cover protection)	29	Nos			
34e	NDSR	225x225x65mm metal - Floor junction box (socket frame,Junction Box/Floor box with base, flyovers, lid and the disposable cover protection)	9	Nos			
35	Supply & Fixing of Table Mounted Pop-up boxes to be suitable for Slim design for perfect integration into the furniture. To be suitable for modular switch/socket/data outlets. Supplied alongwith installation kits for table topwith.  All complete as per specifications, drawings and / or as directed by the Engineer.						

35a	NDSR	8 (2 x 4) modules	5	Set	
	vlaqu2	and fixing of following sizes of PVC Trunking wit	th cover and	its following	
		pries like joints, end cap, flat angles, Variable int		_	
36		ete as per specifications, drawings and / or as d		-	
		,		0	
36a	NDSR	80MM X 50MM (65MM width)	200	Mtr	
	Sup	ply, installation, testing and commissioning of 4	15V cubical t	ype, fully	
	compa				
37	CRCA she	eet, powder coated with Siemens grey (RAL 703)	2) after sever	tank process	
	and con	nplete with bolted design and all incoming & ou	tgoing switch	gears as per	
		the following.			
37a	NDSR	Main Panel	1	Set	
Incon	ner :				
I. 200	A, 4P Auto	matic Transfer switch with controller,Provide OI	N,OFF push b	utton with ON	
		nanual control & spreader- 1 no.	•		
		KA, MCCB with thermal magnetic releases and r	rotary handle	mechanism	
	eader - 1 N	· · · · · · · · · · · · · · · · · · ·	•		
-		ion lamps(R,Y,B) - 1 set.			
		Indication lamps - 1 set.			
	-	A,CL:1.0 tape insulated bar primary type with s	uitable sortin	g links	
	- 1 Set.				
VI. M	etering:Mu	ltifunction meters cl:1.0 measured with following	ng parameter	s:	
V,A,F,	,PF,KW,KW	H & Phase sequence 1 Set			
VII. Bı	usbar:				
VIII. 2	.00A, TPN,	25KA, for 1 sec Aluminium bus bars			
IX. Ph	ase: currer	t density not more than 0.8A/sq.mm			
		of the phase current (0.5 x phase)			
XI. Ea	rth: 25x3m	m copper flat			
XII. O	utgoing:				
		B 'C' Curve 10kA- 1 No			
		3 'C' Curve 10kA- 1 No			
		KA, MCCB with thermal magnetic releases and	rotary handle	mechanism	
•	eader - 4 N				
	.00A, TPN, I				
		25KA, MCCB with thermal magnetic releases and	d rotary hand	lle mechanism	
•	eader - 1 N	0.	·		
XVII. 6	63A, TPN, 1	o. 8KA, MCCB with thermal magnetic releases and	·		
XVII. 6	63A, TPN, 1	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering	·		
XVII. (	63A, TPN, 1	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering Supply and erection of 3 Phase input - 1	·		
XVII. (	63A, TPN, 1	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with	·		
XVII. (	63A, TPN, 1	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1  Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters,	·		
XVII. (	63A, TPN, 1	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup.	·		
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o.  8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes	rotary hand	e mechanism	
XVII. ( & spr	63A, TPN, 1 eader - 1 N NDSR	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary	rotary hand	e mechanism Set	
XVII. ( & spr	63A, TPN, 1 eader - 1 N NDSR	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays,	rotary hand	e mechanism Set	
XVII. ( & spr	63A, TPN, 1 eader - 1 N NDSR	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and	rotary hand	e mechanism Set	
XVII. ( & spr	63A, TPN, 1 eader - 1 N NDSR	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.	rotary hand	e mechanism Set	
XVII. ( & spr	63A, TPN, 1 eader - 1 N NDSR	o. 8KA, MCCB with thermal magnetic releases and o. with kwhr sub metering  Supply and erection of 3 Phase input - 1 Phase out, 15 kVA 3P -n 3P out UPS with suitable BCB (battery circuit breaker), filters, SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and fixing accessories etc.  Supply and erection of 1 Phase, 230 V, 2 kVA 1P -n 1P out UPS with suitable BCB (battery circuit breaker), filters, 16 nos.12V 26Ah SMF battery bank, with 30minutes backup. The items including necessary safety features, protections/relays, necessary battery racks, cables/wires and	rotary hand	e mechanism Set	

41	5.15	Providing and fixing 25mm x 5 mm G.I strip on surface or in recess for connections etc. as required.	85	Mtr		
42	5.17	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing as required.	15	Mtr		

## 3) Network & Telephone conduit

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	иом	Complied/Not Complied	Ref. Page No.
1		and fixing following modular switch/ socket on t witch box including connections but excluding m required	_			
1a	1.24.6	Telephone socket outlet	50	Each		
1b	1.24.7	TV Antenna socket outlet	5	Each		
2	1.19	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, sheilded with fine tinned copper braid and protected with PVC sheath in existing surface/recessed steel / PVC conduit as required.	160	Mtr		
3		Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephonecable in the existing surface/ recessed steel/ PVC conduit as required.				
4	1.18.2	2 Pair	1401	Mtr		
5	NDSR	50 Pair	10	Mtr		
6		Supply and fixing of the following telephone Krone type junction boxes enclosed in MS box with hinged cover with lock & key arrangements etc. The item including necessary clamping and making good the same in case of recessed mounting as required. All complete as per specifications, drawings and / or as directed by the Engineer.				
7	NDSR	50 - pair KJB	1	Set		
8	NDSR	Supply , installation , testing and commissioning of the TEC approved ISDN EPABX system upto 4 Line in : Extendable to 75 intercom connection Intel Microprocessor BPL Model Sigma INDX type of advanced system or equivalen type as acceptable to the client with suitable battery charger, all complete as per specifications and / or as direcyted by the Engineer. with following specifications	1	Set		
9	NDSR	Supply and fixing of RJ-45 modular type Data outlet mounted on existing modular box complete with existing metal / Pvc box, front plate, screws and fixing accessories etc.	58	Each		

10	1.27.1	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required. (for telephone & data outlet)  1 or 2 Module (75mmX75mm)  Supplying and drawing of 4 pair CAT 6 LAN unarmoured computer networking cable in the existing cable management system/ surface/recess/PVC conduit etc as required.	28 1662	Each Mtr		
13	NDSR	Supply, fixing and termination of high quality rack mounted type patch panel with one number of 24 port switch, fixing frames, links and interconnections, necessary accessories etc., all complete as per specifications, drawings and / or as directed by the Engineer.	3	Each		
14	NDSR	Supply, fixing and termination of high quality wall mounted type 12U floor mountable powder coated Rack with 3x5A Power Manager, 1 position fan, min 1 nos of shelf, Front Glass double door with Lock & key with suitable network port switch, fixing frames, links and interconnections, necessary accessories etc., all complete as per specifications, drawings and / or as directed by the Engineer.	1	Each		
15	NDSR	Supplying and installing of 8 Watts, Wall/ceiling mounted type high quality metallic grill type 100V line speaker with built-in line matching transformer and necessary mounting boxes and fixing accessories.	8	Each		
16	NDSR	Supply, laying and termination of 2 core 1.5 sq.mm flexible copper cable laid in exisitng tray/conduit/raceways from Amplifier to speaker and from speaker to other speakers, all complete as per specifications, drawings and / or as directed by the Engineer.	100	Mtr		
17	NDSR	Supplying and installing of amplifier rack unit complete with one no. ten zones voice alarm controller with 250W amplifier with USB Port. The items including of suitable mixer amplifier /booster amplifier, line matching transformer, power supply unit, connection strip, mounting desk etc.,	1	Set		
18	NDSR	Supplying and installing of microphone (call station) for 10 zones unidirectional communication/announcement with emergency button for remote emergency activation.	1	Each		

19	NDSR	Supplying and fixing of wall or ceiling mounted type Fixed Dome or Bullet type Camera 2.0 Megapixel high-performance CMOS, Analog HD output, up to 1080P resolution True Day/Night, DNR, Smart IR Up to 30m IR distance, IP66 weatherproof with all necessary BNC connectors and fixing accessories as required.	7	Each	
20	NDSR	Supply and fixing of 8 PoE Switches for CCTV IP Camera on suitable zinc-passivated box complete with metal / Pvc box, front plate, screws and fixing accessories etc.	1	Each	
21	1.53.1	Supplying and drawing of 4 pair CAT 6 LAN unarmoured computer networking cable in the existing cable management system/ surface/recess/PVC conduit etc as required.	160	Mtr	
22	NDSR	Supplying and installing of 8 Channel Network Video Recorder with Max 320Mbps incoming bandwidth Smart H.265+/H.265/ Smart H.264+/H.264/MJPEG Up to 12MP resolution preview and playback Support 8 SATA HDDs up to 10TB Each, 4 USB (2 USB3.0, 2USB2.0) 2 HDMI / 2 VGA simultaneous video output Support Multi-brand network cameras Support RAID 0/1/5/10 Mobile Software: iCMOB, gCMOB CMS Software: KVMS Pro. The items including supply of 4TB hard disk, connectors, pins and providing complete configuration etc.	1	Each	
23	NDSR	Supplying and installing of Power Supply Unit along with necessary Battery backup, suitable for 1 nos. 8 channel network video recorder system.	1	Each	
24	NDSR	Supplying and installing of 32" LED colour monitor and fixing accessories.	1	Each	

# 4) FIRE FIGHTING AND FIRE ALARM SYSTEM

Α	FIRE ALARM SYSTEM						
SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	UOM	Complied/Not Complied	Ref. Page No.	
1.0	17.2.1	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics / LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5 % V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete					
	17.2.1.2	as per specifications.	1	Each			
2.0	17.2.1.2	Two Loop Panel.  Supplying, installation, testing & commissioning of intelligent analog addressable photo thermal detector complete with mounting base complete as required.	57	Each			
3.0	17.2.5	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required.	24	Each			
4.0	17.2.6	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required.	2651	Each			
5.0	17.2.7	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	4	Each			
6.0	17.2.9	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed temperature thermistor complete with base as required.	6	Each			

17.2.10   17.2.11   17.2.14   17.2.14   17.2.14   17.2.14   17.2.14   17.2.15   17.2			Supplying, installation, testing &				
Supplying, installation, testing & commissioning of addressable manual call point complete as required. Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required. Supplying, Installation, testing & commissioning of addressable horn cum strobe complete as required. Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE 420.00 meter insulation, steel wire armouring & FRLS outer sheath complete as required. Supplying, fixing and following sizes of medium class PVC conduit along with accessories recess including cutting the well marking good the same in case of recessed conduit as required.  1.2.1 20 mm	7.0	17.2.10	<u> </u>	2	Each		
17.2.14   Commissioning of addressable manual call point complete as required.							
point complete as required.  9.0 17.2.15 Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required to the complete as required.  10.0 17.5.2 Supplying & laying of 2x.15 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE 420.00 meter insulation, steel wire armouring & RRLS outer sheath complete as required.  11.0 Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  11.21 20 mm 128 meter 2.5 mm 20.00 meter Supplying, installing, testing and commissioning of power supply unit which provides 24V DC output for connecting all relay control modules and other modules. The power supply unit will be located in fire control room at ground floor and in designated location preferably near to FA/PA shaft in typical floors.  13.0 18.7 Providing, laying, testing & commissioning of "C" class heavy duty MS pipe conforming to Is 3389 / Is 1239 including welding and fittings like elbows, tees, flanges, tapers, nuts botics, gaskes etc. and fixing the pipe on the wall/ceiling with suitable clamp/supports frame and painting with two or more coats of synthetic enamel paint of required shade complete as required:  18.7.1 25 mm dia 160.00 meter 18.7.4 50 mm dia 22.00 meter 18.7.5 65 mm dia 30.00 meter 18.7.7 100 mm dia 17.00 meter 18.7.1 100 mm dia 17.00 set 18.11.5 100 mm dia 1	8.0	17 2 14		2	Fach		
9.0 17.2.15  Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required.  Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000v rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.  Supplying, fixing and following sizes of medium class PVC conduit along with accessories' recess including cutting the wall marking good the same in case of recessed conduit as required.  1.2.1 20 mm 128 meter 20.00 meter 20.00 meter 20.00 meter 20.00 meter 30.00 meter 3	0.0	17.2.14			Lacii		
Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.			i ·				
17.5.2   Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.	9.0	17.2.15	commissioning of addressable horn cum	2	Each		
armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.  Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  1.21. 20 mm							
17.5.2 annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required  Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  1.21.1 20 mm							
insulation, steel wire armouring & FRLS outer sheath complete as required.  Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  1.21.1 20 mm	10.0	1752		420.00	meter		
outer sheath complete as required  Supplying, fixing and following sizes of medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  1.21.1 20 mm	10.0	17.0.2		120.00			
1.0   1.21   medium class PVC conduit along with accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.   1.21.1   20 mm			_				
11.0 1.21 accessories/ recess including cutting the wall marking good the same in case of recessed conduit as required.  1.21.1 20 mm 128 meter 2.20.00 mete							
marking good the same in case of recessed conduit as required.  1.21.1 20 mm	11.0	4 24	_				
1.21.1   20 mm	11.0	1.21					
1.21.1 20 mm 128 meter 2.5 mm 20.00 meter 2.5 mm 20							
Supplying, installing, testing and commissioning of power supply unit which provides 24V DC output for connecting all relay control modules and other modules. The power supply unit will be located in fire control room at ground floor and in designated location preferably near to FA/PA shaft in typical floors.  B FIRE FIGHTING SYSTEM  Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589 / IS 1239 including welding and fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/supports frame and painting with two or more coats of synthetic enamel paint of required shade complete as required:  18.7.1 25 mm dia 160.00 meter 18.7.2 32 mm dia 25.00 meter 18.7.3 40 mm dia 22.00 meter 18.7.4 50 mm dia 22.00 meter 18.7.5 65 mm dia 30.00 meter 18.7.6 80 mm dia 17.00 meter 18.7.7 100 mm dia 17.00 meter 18.7.7 100 mm dia 17.00 meter 18.7.8 11.00 mm dia 17.00 meter 18.11 11.00 mm dia 17.00 meter 18.11 12.00 mm dia 17.00 meter 18.11 15 100 mm dia 10.00 set 18.11.5 100 mm dia 1.00 set 18.11.5 100 mm dia 1.00 set 18.11.5 100 mm dia 1.00 set		1.21.1	†	128	meter		
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provides 24V DC output for connecting all relay control modules and other modules. The power supply unit will be located in fire control room at ground floor and in designated location preferably near to FA/PA shaft in typical floors.  B  FIRE FIGHTING SYSTEM  Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589 / IS 1239 including welding and fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/supports frame and painting with two or more coats of synthetic enamel paint of required shade complete as required:  18.7.1 25 mm dia 160.00 meter 18.7.2 32 mm dia 25.00 meter 18.7.3 40 mm dia 22.00 meter 18.7.5 65 mm dia 50.00 meter 18.7.5 65 mm dia 30.00 meter 18.7.6 80 mm dia 17.00 meter 18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gummetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:							
12.0   NDSR   relay control modules and other modules. The power supply unit will be located in fire control room at ground floor and in designated location preferably near to FA/PA shaft in typical floors.   FIRE FIGHTING SYSTEM							
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shaft in typical floors.    B							
FIRE FIGHTING SYSTEM  Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589 / IS 1239 including welding and fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/celling with suitable clamp/supports frame and painting with two or more coats of synthetic enamel paint of required shade complete as required:  18.7.1 25 mm dia 160.00 meter  18.7.2 32 mm dia 25.00 meter  18.7.3 40 mm dia 22.00 meter  18.7.4 50 mm dia 50.00 meter  18.7.5 65 mm dia 30.00 meter  18.7.6 80 mm dia 17.00 meter  18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:			designated location preferably near to FA/PA				
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painting with two or more coats of synthetic enamel paint of required shade complete as required:    18.7.1   25 mm dia   160.00   meter	В		FIRE FIGHTING Providing, laying, testing & commissioning of '	C' class heavy	-		
painting with two or more coats of synthetic enamel paint of required shade complete as required:  18.7.1 25 mm dia 160.00 meter  18.7.2 32 mm dia 25.00 meter  18.7.3 40 mm dia 22.00 meter  18.7.4 50 mm dia 50.00 meter  18.7.5 65 mm dia 30.00 meter  18.7.6 80 mm dia 17.00 meter  18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:	В		Providing, laying, testing & commissioning of 'opine conforming to IS 3589 / IS 1239 including	C' class heavy g welding and	d fittings		
18.7.1   25 mm dia   160.00   meter		18 7	FIRE FIGHTING  Providing, laying, testing & commissioning of 'compipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, g	C' class heavy g welding and gaskets etc. a	d fittings nd fixing		
18.7.2 32 mm dia 25.00 meter  18.7.3 40 mm dia 22.00 meter  18.7.4 50 mm dia 50.00 meter  18.7.5 65 mm dia 30.00 meter  18.7.6 80 mm dia 17.00 meter  18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7	Providing, laying, testing & commissioning of 'pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clampainting with two or more coats of synthetics.	C' class heavy g welding and gaskets etc. a p/supports fr tic enamel pa	d fittings nd fixing rame and		
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18.7.3 40 mm dia 22.00 meter  18.7.4 50 mm dia 50.00 meter  18.7.5 65 mm dia 30.00 meter  18.7.6 80 mm dia 17.00 meter  18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7	Providing, laying, testing & commissioning of 'pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clampainting with two or more coats of synthetics.	C' class heavy g welding and gaskets etc. a p/supports fr tic enamel pa	d fittings nd fixing rame and		
18.7.4 50 mm dia 50.00 meter  18.7.5 65 mm dia 30.00 meter  18.7.6 80 mm dia 17.00 meter  18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:			Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clampainting with two or more coats of synthetic required shade complete as recommission.	C' class heavy g welding and gaskets etc. and p/supports fr tic enamel pa quired:	d fittings nd fixing rame and int of		
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18.7.6 80 mm dia  17.00 meter  18.7.7 100 mm dia  12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11 100 mm dia  1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2	FIRE FIGHTING  Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, g the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthet required shade complete as rec  25 mm dia 32 mm dia 40 mm dia	C' class heavy g welding and gaskets etc. as p/supports fric enamel paquired:  160.00 25.00	d fittings and fixing ame and int of  meter meter		
18.7.7 100 mm dia 12.00 meter  Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2 18.7.3 18.7.4	FIRE FIGHTING  Providing, laying, testing & commissioning of to pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthether required shade complete as recommissional synthesis. The pipe on the wall/ceiling with suitable clam painting with two or more coats of synthesis required shade complete as recommissional synthesis. The pipe of the pip	C' class heavy g welding and gaskets etc. as p/supports frice enamel paquired:  160.00 25.00 22.00 50.00	meter meter meter meter meter meter		
Supplying, fixing, testing and commissioning of butterfly valve of PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2 18.7.3 18.7.4 18.7.5	FIRE FIGHTING  Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthety required shade complete as recommended.  25 mm dia 32 mm dia 40 mm dia 50 mm dia 65 mm dia	C' class heavy g welding and gaskets etc. as p/supports fractic enamel paquired:  160.00 25.00 22.00 50.00 30.00	meter		
PN1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia 1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6	Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, g the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthet required shade complete as rec  25 mm dia 32 mm dia 40 mm dia 50 mm dia 80 mm dia	C' class heavy g welding and gaskets etc. as p/supports fractic enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00	meter		
14.0 18.11 with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required:  18.11.5 100 mm dia  1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6	FIRE FIGHTING  Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthety required shade complete as reconstructed.  25 mm dia 32 mm dia 40 mm dia 50 mm dia 65 mm dia 80 mm dia 100 mm dia	C' class heavy g welding and gaskets etc. as p/supports frice enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00 12.00	meter		
following sizes as required:  18.11.5 100 mm dia  1.00 set  Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:		18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6	FIRE FIGHTING  Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthete required shade complete as recommended.  25 mm dia 32 mm dia 40 mm dia 50 mm dia 65 mm dia 80 mm dia 100 mm dia Supplying, fixing, testing and commissioning	C' class heavy g welding and gaskets etc. as p/supports fractic enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00 12.00 s of butterfly well and gaskets etc. as permanel paquired;	meter		
Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:	13.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, g the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthet required shade complete as rec  25 mm dia 32 mm dia 40 mm dia 50 mm dia 65 mm dia 80 mm dia 100 mm dia Supplying, fixing, testing and commissioning PN1.6 rating with bronze/gunmetal seat duly	C' class heavy g welding and gaskets etc. as p/supports frice enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00 12.00 s of butterfly wells in the support of the suppo	meter		
Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:	13.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthetic required shade complete as reconstructed shade complete as reconstructed shade complete as reconstructed shade shade complete as reconstructed shade s	C' class heavy g welding and gaskets etc. as p/supports fractic enamel particle enamel particle enamel 25.00 22.00 50.00 30.00 17.00 12.00 g of butterfly value of the state o	meter		
15.0 18.21 bulb type sprinklers of rating 68 degree centigrade with required accessories :	13.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthetic required shade complete as recommendated.  25 mm dia 32 mm dia 40 mm dia 50 mm dia 65 mm dia 80 mm dia 100 mm dia Supplying, fixing, testing and commissioning PN1.6 rating with bronze/gunmetal seat duly with nuts, bolts, washers, gaskets conform following sizes as required.	C' class heavy g welding and gaskets etc. as p/supports frice enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00 12.00 s of butterfly welding to IS 130 doing to IS 130 do	meter		
accessories :	13.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthether required shade complete as recommendated.  25 mm dia 32 mm dia 40 mm dia 50 mm dia 80 mm dia 100 mm dia Supplying, fixing, testing and commissioning PN1.6 rating with bronze/gunmetal seat duly with nuts, bolts, washers, gaskets conform following sizes as required.	C' class heavy g welding and gaskets etc. at p/supports fractic enamel paquired:  160.00 25.00 22.00 50.00 30.00 17.00 12.00 sof butterfly welling to IS 130 decining	meter meter meter meter meter meter meter meter meter solve of complete 95 of		
18.21.1 Pendent Sprinkler 85.00 Each	14.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o' pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, g the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthet required shade complete as rec  25 mm dia 32 mm dia 40 mm dia 50 mm dia 80 mm dia 100 mm dia Supplying, fixing, testing and commissioning PN1.6 rating with bronze/gunmetal seat duly with nuts, bolts, washers, gaskets conform following sizes as required  100 mm dia Providing, fixing, testing & commissioning of	C' class heavy g welding and gaskets etc. as p/supports fractic enamel particle enamel en	meter meter meter meter meter meter meter meter meter salve of complete 95 of set		
	14.0	18.7.1 18.7.2 18.7.3 18.7.4 18.7.5 18.7.6 18.7.7	Providing, laying, testing & commissioning of 'o pipe conforming to IS 3589 / IS 1239 including like elbows, tees, flanges, tapers, nuts bolts, go the pipe on the wall/ceiling with suitable clam painting with two or more coats of synthetic required shade complete as recommendated.  25 mm dia  32 mm dia  40 mm dia  50 mm dia  50 mm dia  100 mm dia  Supplying, fixing, testing and commissioning PN1.6 rating with bronze/gunmetal seat duly with nuts, bolts, washers, gaskets conform following sizes as required.  100 mm dia  Providing, fixing, testing & commissioning of bulb type sprinklers of rating 68 degree cent	C' class heavy g welding and gaskets etc. as p/supports fractic enamel particle enamel en	meter meter meter meter meter meter meter meter meter salve of complete 95 of set		

	18.21.3	Horizontal side wall sprinkler	617	Each	
16.0	18.25	Supplying, installation, testing and commiss flexible pipe (UL Listed) of Stainless steel com reducer thread with maximum working pres pressure of 875 PSI (Burst) with branch line male thread to sprinkler head (Outlet) 15 mr with reducer, nipple, 2 side brackets, center following sizes complete as req			
	18.25.2	1000 mm	1578	Each	
	18.25.4	1500 mm	85.00	Each	
17.0	18.29	Providing, installation, testing and commissioning of adjustable rosette plate for 15 mm dia in white finish UL listed or FM approved complete as required.	85.00	Each	
18.0		Supplying, installing and commissioning Portable Fire extinguishers of following type & capacity.			
	NDSR	ABC powder type fire extinguisher of 4 Kgs. Capacity, with initial filling (Mono Ammonium Phosphate Powder 90) in brand new cylinder with powder coated finish, Stored Pressur type, Pressure Gauge, Controllable discharge mechanism with Hose & Nozzle, confirming to IS:15683. (ABC Dry Chemical Powder- MAP 90%)	4.00	Each	
	NDSR	Carbon-di- oxide type fire extinguisher of 4.5 kgs. Capacity, CO2 gas as per IS 15222 with controll discharge mechanism fitted with Hose & Horn applicable on Class B fire rating 21B confirming to IS: 15683.	2.00	Each	

# 5) Internal HVAC works

SNO	DSR 2021 SECTION	DESCRIPTION	QUANTITY	UOM	Complied/Not Complied	Ref. Page No.
1	16.1	INSULATED CHILLED WATER PIPING ( resin bonded fiber glass insulation) Supplying , laying/ fixing, testing and commissioing og following nominal sizes of chilled water piping inside the building ( with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc) duly insulated with 80 Kg/cum density resin bonded fiber glass or 144 Kg/cu m density minerak wool (non combustible)pipe setion insulation covered with a layer of 120 gm/sqm plythene sheet ( vapour barrier) and finally applying 0.63mm aluminium sheet cladding complete with type3, grade 1 roofing feltstrip (as per IS:1322 as amended up to date ) at joints and reparing of damage to building etc. as per specifications and as required.				

shall be M.S °C' class as per IS:1239 and pipes size above 150mm shall be welded black steel pipe heavy classs as per IS:3889, from minimum 6.35mm thick M.S sheet for pipes upto 350mm dia and from minimum 7mm thick M.S sheet for pipes of 400mm dia and above  1a 16.19 80mm dia (50mm thick insulation) 50 Metre Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of form thick intrile rubber on the uPVC pipe with necessary fixing accessories.  32mm Butterfly valve (Manual) with C I body ss dics , Nitrile rubber seal & 2 each standard of form thick intrile rubber on the uPVC pipe with necessary fixing accessories.  32mm Butterfly valve (Manual) with C I body ss dics , Nitrile rubber seal & 2 each standard of form thick intrile rubber on the uPVC pipe with necessary fixing accessories.  32mm Butterfly valve (Manual) with C I body ss dics , Nitrile rubber seal & 2 each salve for think of the uPVC pipe with necessary fixing accessories.  32mm Butterfly valve (Manual) with C I body ss dics , Nitrile rubber seal & 2 each salve for think of the uPVC pipe with necessary fixing accessories.  32mm dia 16.7.1.5 80mm dia 2 each salve fixing pipe for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each salve fixing in position & pipe fixing for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 2 each salve fixing for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each Providing and fixing in position the mercury in glass industrial type theremometers.  7 16.8 9roviding and fixing in position the industrial type pressure gauge with gum metal / brass 2 each valves complete as required.  8 16.9 16.12.1.2 Solve fixing for following sheet thickness complete as required.  9 16.12.1.1 Thickness 0.8 mm sheet 6.3.00 sq.m specifications of following sheet thickness complete down of the provided part with enthalply	1		Note: The pipes of sizes 150mm & below		í I	1
size above 150mm shall be welded black steel pipe heavy classs as per IS:3589, from minmum 6.35mm thick M.S sheet for pipes upto 350mm dia and from minimum 7mm thick M.S sheet for pipes of 400mm dia and above above above 10 minum 7mm thick M.S. sheet for pipes of 400mm dia and above 10 minum 7mm thick M.S. sheet for pipes of 400mm dia and above 10 minum 7mm thick M.S. sheet for pipes of 400mm dia and above 10 minum 7mm thick minum 7mm 1mm 1			• •			ļ
steel pipe heavy classs as per IS:3589, from minmum 6.35mm thick M.S sheet for pipes upto 350mm dia and from minimum 7mm thick MS sheet for pipes of 400mm dia and above  1a 16.19 80mm dia (50mm thick insulation) 50 Metre  Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of 6mm thick intilire rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual ) with C 1 body ss dics. Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each Balancing valve with built in measurement facility with C 1 body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each Non return valve with duel plate of C 1 body ss plates vulcanized NBR seal flanged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each V- Strainer of ductile C1 body flanged vith ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each V- Strainer of ductile C1 body flanged with ss strainer for chilled water/hot eater circulation as specified.  7 16.8 16.7.3 80mm dia 1 each V- Strainer of ductile C1 body flanged with ss strainer for chilled water/hot eater circulation as specified.  8 16.7.4.5 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each Providing and fixing in position the mercury in glass industrial type thermometers. 1 each Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  9 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m Thickness 0.63 mm sheet 64.00 sq.m supply, installation, testing and commissioning of Motorized (ON-OFF type) duct mounted 61 volume c			·			
mimmum 6.35mm thick M.S sheet for pipes upto 350mm dia and from minimum 7mm thick MS sheet for pipes of 400mm dia and above  1a 16.1.9 80mm dia (50mm thick insulation ) 50 Metre  Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tess and requierrements. The item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual ) with C I body ss dics. Nitrile rubber seal & or ring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each 7 strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia 1 each 7 strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia 1 each 7 strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia 1 each 7 strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia 1 each 7 strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  5a 16.7.4.5 each 9 strainer of ductile CI body flanged with ss strainer for chilled water/hot each providing and fixing in position the mercury in glass industrial type bressure gauge with gum materla! brass 2 each valve						
upto 350mm dia and from minimum 7mm thick MS sheet for pipes of 400mm dia and above  1a 16.1.9 Summ dia (50mm thick insulation ) 50 Metre  Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and requirements. The item including cost of insulation of 6mm thick insulation of 50 ms and insulation of 6mm thick insulation on 16mm thick insulation of 6mm						
thick MS sheet for pipes of 400mm dia and above  1a 16.1.9 80mm dia (50mm thick insulation ) 50 Metre  Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The Item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories. 32mm  Butterfly valve (Manual ) with C I body ss dics., Nitrile rubber seal & o ring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & protected & prot			• •			
16.1.9   80mm dia (50mm thick insulation )   50   Metre						
Supply and installation of the following sizes of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual) with C I body ss dics, Nitrile rubber seal & or ing pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each Non return valve with duel plate of C I body sp plates vulcanized water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 2 each Non return valve with duel plate of C I body sp plates vulcanized water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each 17.5 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  8 16.7.5 80mm dia 1 each 17.5 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  8 16.7.4 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each 18.5 Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  9 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m 41.00 sq.m supply. Installation, balancing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium II 5 sq.mm) for integration within AHU room 19.4 sq.m.			• •			
of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of 6mm thick intrile rubber on the uPVC pipe with necessary fixing accessories.  3 mm  Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & or ing pn16 pressure rating for chilled water/hot eater circulation as specified.  3 l6.7.1. 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4 l6.7.2. 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5 l6.7.3. 80mm dia 2 each  NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  6 l6.7.4 Y-Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.  7 l6.8 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  8 l6.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  9 l6.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m. supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room	1a	16.1.9	80mm dia (50mm thick insulation )	50	Metre	
of uPVC drain pipes with necessary accessories such as elbows, tees and reducers as per drawings and site requirements. The item including cost of insulation of 6mm thick intrile rubber on the uPVC pipe with necessary fixing accessories.  3 mm  Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & or ing pn16 pressure rating for chilled water/hot eater circulation as specified.  3 l6.7.1. 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4 l6.7.2. 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5 l6.7.3. 80mm dia 2 each  NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  6 l6.7.4 Y-Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.  7 l6.8 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  8 l6.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  9 l6.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m. supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room			Supply and installation of the following sizes			
reducers as per drawings and site requirements. The Item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & or ing pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1. 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with FPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2. 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3. 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3. 80mm dia 1 each  7 'Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4. Y-Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4. Providing and fixing in position the mercury in glass industrial type thermometers.  7 16.8. Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m each valves complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1. Thickness 0.63 mm sheet 441.00 sq.m supply. Installation, testing and commissioning of Motorized (ONOFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room						
requirements. The item including cost of insulation of 6mm thick nitrile rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body splates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  7 16.8 80mm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minum 1.5 sq.mm) for integration within AHU room			accessories such as elbows, tees and			
requirements. The item including cost of insulation of form thick intrile rubber on the uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with FDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  7 16.8 80mm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 type pressure gauge with gun metal / brass 2 each valves complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m 99 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m supply. Installation , testing and commissioning of Motorized (ONOFF type) duct mounted Gl volume control damper with enthalpy sensor and necessary control wire (minum 1.5 sq.mm) for integration within AHU room  100 16.14 Damper 1.49 sq.m	2	NIDCD	reducers as per drawings and site	30	sa m	
uPVC pipe with necessary fixing accessories.  32mm  Butterfly valve (Manual) with C I body ss dics, Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  6 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  8 16.7.4 Somm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 type pressure gauge with gun metal / brass 2 each valves complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m specifications of following sheet thickness complete as required.  10 16.14 Damper 1.49 sq.m		NDSK	•	30	34.111	
32mm Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia 2 each Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 2 each NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia 1 each Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each Providing and fixing in position the mercury in glass industrial type thermometers. 1 each Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 type pressure gauge with gun metal / brass 2 each valves complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m 99 16.12.1.7 Thickness 0.63 mm sheet 441.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room 10a 16.14.1 Damper 1.49 sq.m						
Butterfly valve (Manual ) with C I body ss dics , Nitrile rubber seal & oring pn16 pressure rating for chilled water/hot eater circulation as specified.						
3 16.7.1 o ring pn16 pressure rating for chilled water/hot eater circulation as specified.  3a 16.7.1.5 80mm dia  Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia  2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3 NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.4.5 80mm dia  1 each  7 'Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia  1 each  7 l6.8 Providing and fixing in position the mercury in glass industrial type thermometers.  8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  9 16.12.1 Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m						
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3a   16.7.1.5   80mm dia   2   each	3	16.7.1		not eater circ	ulation	ļ
Balancing valve with built in measurement facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  T- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  8a 16.7.4.5 80mm dia 1 each  Troviding and fixing in position the mercury in glass industrial type thermometers. 1 each  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.1 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room				Т		
flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  T-Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each  Providing and fixing in position the mercury in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room	3a	16.7.1.5				
4 16.7.2 protected out pipe insulation & pn16 pressure rating for chilled water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  6 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each  7 16.8 80mm dia 1 each  Providing and fixing in position the mercury in glass industrial type thermometers. 1 each  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 type pressure gauge with gun metal / brass 2 each valves complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m 9b 16.12.1.2 Thickness 0.8 mm sheet 441.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room			_	•		ļ
water/hot eater circulation as specified.  4a 16.7.2.5 80mm dia 2 each  Non return valve with duel plate of C I body ss plates vulcanized  NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  6 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 16.9 supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room						ļ
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Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.			water/hot eater circulation as spe	ecified.		ļ
Non return valve with duel plate of C I body ss plates vulcanized NBR seal flamged and & pn16 pressure rating for chilled water/hot eater circulation as specified.						ļ
Solution   Supply	4a	16.7.2.5	80mm dia	2	each	
eater circulation as specified.  5a 16.7.3.5 80mm dia 1 each  6 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  9 16.12.1 supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m 9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room			Non return valve with duel plate of CI body s	s plates vulc	anized	
5a     16.7.3.5     80mm dia     1     each       6     16.7.4     Y- Strainer of ductile Cl body flanged with ss strainer for chilled water/hot eater circulation as specified.       6a     16.7.4.5     80mm dia     1     each       7     16.8     Providing and fixing in position the mercury in glass industrial type thermometers.     1     each       8     16.9     Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.     2     each       9     16.12.1     supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.       9a     16.12.1.1     Thickness 0.8 mm sheet     63.00     sq.m       9b     16.12.1.2     Thickness 0.63 mm sheet     441.00     sq.m       10     16.14     Supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room       10a     16.14.1     Damper     1.49     sq.m	5	16.7.3	NBR seal flamged and & pn16 pressure rating	for chilled wa	ter/hot	
6 16.7.4 Y- Strainer of ductile CI body flanged with ss strainer for chilled water/hot eater circulation as specified.  6a 16.7.4.5 80mm dia 1 each  7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each  8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  8 supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m			eater circulation as specified	d.		ļ
6 16.7.4 water/hot eater circulation as specified. 6a 16.7.4.5 80mm dia 1 each 7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers. 1 each 8 16.9 Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  8 supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m 9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10 16.14 Damper 1.49 sq.m	5a	16.7.3.5	80mm dia	1	each	
Somm dia   1   each	_		Y- Strainer of ductile CI body flanged with ss	strainer for o	hilled	
7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	6	16.7.4				ļ
7 16.8 Providing and fixing in position the mercury in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass 2 each valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized ( ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	6a	16.7.4.5	80mm dia	1	each	
7 16.8 in glass industrial type thermometers.  Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9 16.12.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  Supply. Installation , testing and commissioning of Motorized (ONOFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m			Providing and fixing in position the mercury			
Providing and fixing in position the industrial type pressure gauge with gun metal / brass valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	7	16.8		1	each	
8 16.9 type pressure gauge with gun metal / brass valves complete as required.  Supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  Supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m			Providing and fixing in position the industrial			
valves complete as required.  supply. Installation , balancing and commissioning of factory fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	Q	16.0	· ,	2	oach	
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fabricated GSS sheet rectangular / round/ spiral flat oval ducting complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m			•	ioning of for	tory	
9 16.12.1 complete with supports etc. as per approved drawing and specifications of following sheet thickness complete as required.  9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m				_	-	
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9a 16.12.1.1 Thickness 0.8 mm sheet 63.00 sq.m  9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	9	16.12.1		_		
9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m					10 00	ļ
9b 16.12.1.2 Thickness 0.63 mm sheet 441.00 sq.m  supply. Installation , testing and commissioning of Motorized (ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m						
supply. Installation , testing and commissioning of Motorized ( ON-OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m						
10 16.14 OFF type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	9b	16.12.1.2				
10 16.14 sensor and necessary control wire (minium 1.5 sq.mm) for integration within AHU room  10a 16.14.1 Damper 1.49 sq.m				_	- I	
integration within AHU room  10a 16.14.1 Damper 1.49 sq.m	10	16 14	* * *	•		
10a 16.14.1 Damper 1.49 sq.m		10.17			ror	
			integration within AHU roor	11		
10b 16.14.2 Actuator 19 each	10a	16.14.1	Damper	1.49	sq.m	
	10b	16.14.2	Actuator	19	each	

11	16.15	Supplying & fixing of powder coated extruded aluminium supply air grills with aluminium volume control dampers as per specifications	2.16	sq.m		
12	16.16	Supplying & fixing of powder coated extruded aluminium Return air grills with louvers but without volume control dampers cmplete as required.	0.41	sq.m		
13	16.17	Supplying & fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	1.85	sq.m		
14	16.18	Supplying & fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	1.11	sq.m		
15	16.20	Supplying & fixing testing commissioning of fire dampers in supply air duct/main branch and return air path as and where required of sizes i/c control wiring, the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be closed in the event of fire signal comlete as required and as per specifications.				
15a	16.20.1	Fire damper	2	sq.m		
15b	16.20.2	Actuator	6	each		
16	16.21	Supply and fixing of acoustic lining of supply air duct and plenum with 25mm thick resin bonded glass wool having density of 32 kg/m3 with 25mm x 25mm GI section of 1.25 mm thick, at 600mm centre tp centre covered with reinforced plastic tissue paper and 0.5mm thick performed aluminimum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, cprx compound eyc. complete as required and as per specifications.	30.00	sq.m		
17	16.22	Supply and fixing of acoustic lining on wall and ceiling of ahu rooms with 25mm thick, density of 32 kg/ cu.m rsin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25x50x50x50x25 mm made of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80mm thick performed aluminimum sheet etc., complete as required and as per specifications.	120.00	sq.m		
18	16.23	Supplying and fixing of following thickness duly laminated aluminimum foil of mat finish closed cell niltrile rubber (class-o) insulation on the existing duct after applying suitable adnesive for nitrile rubber. The joints shall be sealed with 50mm wide and 3mm thick self adhesive nitrile rubber tape insulation complete as per specifiations and as required. Valves should have pressure rating of 25 bar minimum.				

18a	16.23.1	19mm	504	sq.m	
19	16.26	supply. Installation , testing and commission floor mounted chilled water double skin type h handling units made of 25mm thick panels plasticized G.I casing of thickness 0.8mm outside inside layer with polyurethane foam (puf) in injected between then by injection moulding with blower section with blower suitable for required minimum 2 bend GSS/PVC eliminal section with aluminimum finned copper tubes a less than 0.5 mm)cooling coil of 6 row deep, 50mm thick metal viscous/ washable eynthetic belt drive package with TEFC drive motor of a suitable for 415±10% volts, 50 Hz, 3 Phase A designed for variable frequency drive approximately connections, SS (18G) drain pan with PUF installation dial type pressure gauges (2 nos.) and in thermometers (2 nos) at the inlet and outlet valve wherever required, necessary vibra arrangements etc., complete as per specification capacities.	orizontal/ver consisting of de layer and nsulation face machine, con static pressultors, cooling ( tubes thick filter section c type air presefficiency clands C supply suitalications, dra ulation, 150m ndustrial type of coil, auto ation isolatio	rtical air f pre 0.8 mm ctory mplete ure as g coil ness not n with efilters, ass IE3 tably ain nm dia, e purge	
19a	16.26.14	34000 CMH	1	Set	

#### **ANNEXURE - 3**

Development of Interiors for Centre for Railway Research with Civil, Electrical & Networking, HVAC, Fire Fighting and Fire Alarm Works at 5th Floor, Block A, Research Park IIT Madras.

Tender Ref No: CRR/JOHR/109/2023/CRRINTERIORS

#### PROFORMA FORMAT FOR FINANCIAL BID (BOQ) FORMAT

#### \*\*\*All values should be in INR

It. No	Description of work	Quantity	Units	Basic Rate in INR	GST in Percentage	Total Amount with taxes in INR
1.	CIVIL WORK	1	LS			
2.	ELECTRICAL WORK	1	LS			
3.	NETWORKING, TELEPHONE CONDUITS	1	LS			
4.	FIRE FIGHTING AND FIRE ALARM SYSTEM	1	LS			
5.	HVAC WORK	1	LS			
	Grand Total					

#### \*Ls - Lump sum

#### \*Important Note:

- 1. Please refer to the Annexure 2 for line item wise quantity details for quoting.
- 2. Bidders need to upload the BOQ summary as per above proforma in the CPP E-procurement Portal.
- 3. Line item wise excel sheet will be shared with Technically qualified bidders after the opening the Financial bids online. Bidders need to submit the line item wise price details at the time of Financial Evaluation for committees review.
- 4. No change in the price summary will be entertained at the time of Financial Evaluation.
- 5. The summary price BOQ uploaded in the CPP portal is final and no deviations are acceptable.
- 6. The L1 will be arrived on the basis of Total value inclusive of all taxes and charges as per above summary.

#### FORMAT FOR AFFIDAVIT OF SELF-CERTIFICATION UNDER PREFERENCE TO MAKE IN INDIA – PER ITEM

I/We Resident of	S/o, D/o, W/o,
Hereby solemnly af	firm and declare as under:
Policy vide Gol Ordated 28.05.2018, 2020 & P- 45021/10	abide by the terms and conditions of the Public Procurement (Preference to Make in Indeer no. P-45021/2/2017-PP (B.EII) dated 15.06.2017 (subsequently revised vide ord 29.05.2019 and 04.06.2020) MOCI order No. 45021/2/2017-PP (BE II) Dt.16th Septem 02/2019-BE-II-Part (1) (E-50310) Dt.4th March 2021 and any subsequentments, if any and
	ent for all inputs which constitute the said item/service/work has been verified by me and the correctness of the claims made therein.
Tick ( ✓) and Fill th	ne Appropriate Category [name of the supplier] hereby confirm in respect of quoted items
	Content is equal to or more than 50% and come under "Class-I Local Supplier"
I/We	[name of the supplier] hereby confirm in respect of quoted items Content is equal to 20% but less than 50% and come under "Class-II Local Supplier"
<ul><li>category.</li><li>The details of</li></ul>	the location (s) at which the local value addition is made and the proportionate value of locations
<ul><li> category.</li><li> The details of content in percentage.</li></ul>	• •
The details of content in percentage  Address	centage
The details of content in percentage Address  For and on behalf o	Percentage Percentage of Local content:%

This letter should be on the letterhead of the quoting firm and should be signed by a competent authority. Non-submission of this will lead to Disqualification of bids.

### **CERTIFICATE**

(To be given on the letter head of the bidder)

No:	Dated:
I have read the clause regarding restrictions on procurement from a bid border with India and hereby certify that I am not from such a country.	dder of a country which shares a land
OR (whichever is applicable)	
I have read the clause regarding restrictions on procurement from a bid border with India and hereby certify that I from	(Name of Country) and has
(Copy/ evidence of valid registration by the Competent Aut	thority is to be attached)
Place:	Signature of the Tenderer
Date:	Name & Address of the  Tenderer with Office Stamp

**ANNEXEUR: 6** 

#### <u>Self-Declaration that the Service Provider has not been blacklisted</u>

(To be given on the letter head of the bidder)

I	S/o
R/o	police station District
/ partr	ner/ sole proprietor (Strike out whichever is not applicable) of
	(Firm or Company) do hereby declare and solemnly affirm:
I.	That the Firm has not been Blacklisted or declared
	insolvent by any of the Union or State Government / Organization in last 3 years.
II.	That none of the individual / firm / Company Blacklisted or any partners or shareholder thereof has any
	connection directly or indirectly with or has any subsistence interest in the deponent business / firm company.
III.	That neither the Firm nor any of its partner has been involved / convicted in any criminal case / economic offence
	nor any criminal case / economic offence is pending against firm or any partner of the Firm before any Court of
	Law / Police.
Place:	Signature of the Tenderer
Date:	Name & Address of the
	Tenderer with Office Stamp

# OEM CERTIFICATION FORM (In Original Letter Head of OEM)

TenderNo					Dated:					
We are	Original	Equipment	Manufacturers	(OEM) of			(Name	of	the	company)
Ms			(Name	of the vendo	) is one of our	Distribu <sup>.</sup>	tors/Deal	ers/R	esellei	rs/Partners
(tick one)	for the			and	d is participating	; in the	above- n	n e n t	tione	ed tender
by offering	our produ	ct model		(Name o	f the product witl	h model	number).	i		
			is author	ized to bid, sell	and provide serv	rice supp	ort warra	anty f	or our	product
as mentior										

Name and Signature of the authorized signatory of OEM along with seal of the company with Date



# CENTRE FOR INDUSTRIAL CONSULTANCY & SPONSORED RESEARCH (IC&SR) INDIAN INSTITUTE OF TECHNOLOGY MADRAS CHENNAI 600 036



# ELECTRONIC CLEARING SERVICE (Credit Clearing) / REAL TIME GROSS SETTLEMENT (RTGS) FACILITY FOR RECEIVING PAYMENTS A. Details of Account Holder

Name of the Institution	Indian Institute of Technology - Madras
Complete Contact Address	Industrial Consultancy and Sponsored Research Indian Institute of Technology-Madras, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
Telephone No./ Fax No.	Tel - 044-2257 8356
E- mail ID of the FO/AO/REG/DIR	dricsr@iitm.ac.in

#### B. Bank Account Details:

Institution Account Name (As per Bank Record)	The Registrar, Indian Institute of Technology - Madras
Account No.	2722101003872
Account Print Name	IIT F A/C , The Registrar IIT Madras
IFSC CODE	CNRB0002722
Bank Name (in full)	Canara Bank
Branch Name	IIT-Madras Branch
Complete Branch Address	Canara Bank, IIT-Madras Branch, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
MICR No.	600015085
Account Type	Savings Account

Certified that the Institute's account is in an RTGS enabled branch.

I hereby declare that the particulars given above are correct and complete.

Date:

Signature of the Competent Authority of the Institution with seal.