Notice Inviting Tender

Name of work: - Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi.
Sub Head: - E&M and Civil Works

Total	**Rs. 5, 67, 87,078/-**

(WORKS DEPARTMENT)

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI

E&M Works: Rs. 3, 04, 91,282/-
Civil Works: Rs. 2, 62, 95,796/-

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI-110016

INDEX

Name of work: - Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi.
Sub Head: - E&M & Civil Works

It is certified that this document contains three parts i.e., Part A, Part B & Part C containing page no. **1 to 118.**

Executive Engineer (CD-III) **Executive Engineer (ED-I)**

NIT approved for **Rs.5, 67, 87,078/-(Rupees Five Crore Sixty Seven Lakh Eighty Seven Thousand Seventy Eight Only)**

Institute Engineer

C-----NIL I----NIL O--- NIL EE (ED-I) EE(CD-III) A.E.E(E) JE (C) JE(E)

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI-110016

Notice Inviting e -Tender.

The Executive Engineer (ED-I), IIT DELHI, HAUZ KHAS, New Delhi-16 (**Phone No 011-26548437**) on behalf of Board of Governors invite online **Item Rate Tender** from CPWD enlisted Contractors of appropriate class in composite category / specialized firms in single stage two bid system for construction of following:

NIT No.	:	**0144/79/IITD/EE(ED-I)/2023-24**
Name of Work	:	**Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M & Civil Works**
Estimated cost	:	**Rs. 5,67,87,078/-**
Earnest Money	:	**Rs. 11,35,742/-**
Performance Guarantee	:	**3% of Tendered value**
Security Deposit	:	**2.5% of Tendered Value**
Warranty	:	**1 Year for Civil and E.I. works.** **5 Years for Specialized work i.e., Water Proofing, Fire Alarm & Detection System, Gas based firefighting system, CCTV system and LED Lighting Fixtures.**
Period for completion	:	**08 Months**
Late date & time for submission of bids	:	**11/12/2023 upto15.00 Hrs.**
Date & Time of opening of Bids	:	**12/12/2023 at 15.00 Hrs.**

The bid forms and other details can be obtained from the website **www.iitd.ac.in or e-Procure.gov.in** free of cost**.** For more clarification you may visit on above website.

Executive Engineer (ED-I)
For & on Behalf of BOG, IIT Delhi

Budget Head: Renovation (Research facility and housing)/35.01.02(IOE)(2021/007/0106)

Copy to: -

1. Institute Engineer
2. Executive Engineer (CD-III) for information.
3. D.A. (Works Accounts)
4. D.R. (A/Cs) – for opening of uploaded documents **at 3:00 PM on 12/12/2023**in the office of D.R. Store
5. Notice Boards.
6. Office Copy
7. Web site Administrator, I.I.T.D.

C-----NIL I----NIL O--- NIL EE (ED-I) EE(CD-III) A.E.E(E) JE (C) JE(E)

PART 'A'

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS: NEW DELHI – 110016
IITD/WORKS (SP-4435)/2023

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING (Tender Notice)

The Executive Engineer (ED-I), IIT DELHI, HAUZ KHAS, New Delhi-16 (Phone No 011-26548437) on behalf of Board of Governors invite online Item Rate Tender from CPWD enlisted Contractors of appropriate class in composite category / specialized firms in single stage two bid system for construction of following:

SL. No.	NIT No.	Name of Work	Estimated Cost (in Rs.)	Earnest Money (in Rs.)	Tender Fees (inRs.)	Time for Completion
1	/0144/79/IITD/EE(ED-I)/2023-24.	**Name of work: Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M & Civil Works**	**Rs. 5,67,87,078/-**	**Rs. 11,35,742/-**	**NIL/-**	**08 Months**

Last date and time of submission of financial & Technical bid : 11/12/2023 upto 3:00 pm (online)

Date and time of opening of Technical bid: 12/12/2023 at 3.00 pm (office of D.R Store) Price bids of eligible bidders as per NIT shall be opened at a later date after scrutiny of Technical bids.

1. The successful bidders shall be required to submit a performance guarantee of **3%**of the tendered amount in the form of Bank Guarantee or F.D.R. from a Nationalized/Scheduled Bank within 1**5**days of issue of letter of intent before award of work. In case of failure by the Contractor to supply the performance guarantee within the specified period, full earnest money will be forfeited, and the tender shall be treated as void. The performance guarantee shall be initially valid up to the date of completion plus 60 (Sixty) days beyond that.

2. Contractors who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted.

(i) Firms/Contractors must have completed satisfactorily one similar work of value not less than **Rs. 4,54,30,000/-**or two similar works each of value not less than **Rs. 3,40,73,000/-**or three similar works each of value not less than **Rs 2,27,15,000/-**during last 7 years ending on previous day of last day of submission of bids.

(ii) **Earnest money of Rs. 11,35,742/-**in the form of Banker's cheque or Demand draft or fixed deposit receipt of a schedule bank drawn in favor of **Registrar, I.I.T. Delhi**. No relaxation in EMD will be allowed for MSMEs and MSEs as per CPWD Manual.

3. Similar work means work of construction / setup of **"Clean Rooms of Class 10000 or Higher Class. However, the component of work must have at least one Class 1000 or Higher Class Laboratories".**

4. The intending bidder must read the terms and conditions of IITD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

5. Information and Instructions for bidders posted on website shall form part of bid document.

6. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from websitehttp://eprocure.gov.in/eprocure/app.in free of cost.

7. Self-attested copies of completion certificate(s) issued by the officer of the client department, not below the rank of Executive Engineer or equivalent, for works executed in Government and in cases of private works certificates signed by the consultant in charge and counter-signed by the owner of the building for whom the work has been carried out, will have to be furnished along with the application. The completion certificate must clearly indicate:-

(a) Name of Work
(b) Stipulated date of start, stipulated date of completion and actual date of completion.
(c) Value of work done.
(d) That the work has been completed satisfactorily.
(e) Full address of the client, officer issuing certificate and location where work is executed.
(f) Incomplete information in the completion certificate, improper format of completion certificate and wrong information in the completion certificate the application shall be summarily rejected.
(g) Evaluation performance of contractor for eligibility shall be done by NIT approving authority. All the eligible similar works executed and submitted by the bidder may be got inspected.

8. Work means work under Government/ Central Public Sector Undertaking / State Public Sector Under Central Autonomous bodies/ State Autonomous bodies/ City Development Authority/ Municipal Cooperation of City formed under any act by Central/ State Government and published in Central/ State Gazetteer work with any reputed private firms. If works completed with private organization, then In support of completion certificate TDS certificate shall also be submitted for verification of the same.

9. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to last date of submission of financial bid.

10. Should have had average annual financial turnover of **Rs. 2, 83, 94,000/-** on above mentioned type work during the last 3 years ending 31stMarch 2023 (Financial year 2019-20, 2020-21, 2021-22). (**Scanned copy of certificate from Chartered Accountant to be uploaded**)

11. Should not have incurred any loss (profit after tax should be positive) in more than two years during the last five years ending 31st March.2022.

12. **Certificate of Financial turn Over: -**at the time of submission of bid contractor may upload Affidavit/ Certificate from C.A mentioning financial turnover of last 3 years or for the period as specified in the bid document and further details if required

may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

13. Should have a Banker's Certificate from a commercial Bank for **Rs. 2,27,15,000/** or Net Worth certificate from CA with Unique Document Identification Number (UDIN) of minimum **Rs. 56,79,000/-** (Scanned copy of original to be uploaded)..

14. IITD is committed to follow the principle of transparency, equity, and competitiveness in public procurement. Before submission of bid each bidder should sign integrity pact at respective places and submit the bid, if duly signed integrity pact is not submitted by bidder such bid shall not be considered.

15. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website

16. The intending bidder must have valid class-III digital signature to submit the bid.

17. On the opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.

18. Contractor can upload documents in the form of JPG format and PDF format.

19. Contractor must ensure to quote rate of each item, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as “0”. Therefore, if any cell is left blank and no rate is quoted by the bidder, the rate of such item shall be treated as “0”(ZERO).

20. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

21. In e-Tendering intending bidder can quote his rates in figures only. The rates in words against amount of each item and total is generated automatically. Therefore, the rate quoted by the bidder in figures will be taken as final.

22. The bid can only be submitted after uploading the mandatory scanned documents such as Demand Draft or Pay order or Banker`s Cheque or Deposit at call Receipt or Fixed Deposit Receipts and towards cost of EMD in favor of **Registrar IIT Delhi** to be deposited withhttp://eprocure.gov.in/eprocure/app/ NEFT facility.

23. The physical EMD of the scanned copy of EMD uploaded shall be deposited by the lowest tenderer within a week after opening of financial bid failing which the tender shall be rejected.

24. The following undertaking in this regard shall be up-loaded by the intending bidders: **“the physical EMD shall be deposited by me / us with the Authority inviting the tender, in case I / we become the lowest tenderer, within a week of the opening of financial bid, otherwise, department may reject the tender and also take action to debar me /us from tendering in any form in IIT Delhi.”**

25. **Copy of enlistment order and certificate of work experience and other documents as specified in the Press Notice / web notice shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. However, certified / original copy of all the scanned and up-loaded documents as specified in press notice web / notice shall have to be submitted by the lowest bidder only along with physical EMD of the scanned copy of EMD uploaded within a week physically in the office of e-tendering authority and it shall be sole responsibility of lowest bidder.**

26. **Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited EMD, and other documents scanned and uploaded are found in order.**

27. When bids are invited in two /three stages systems and if it is desired to submit revised financial bid it shall be mandatory to submit revised financial bid. If not submitted, then the bid submitted earlier shall become invalid – Not applicable.

28. **The bid submitted shall become invalid if:**

a. The bidder is found ineligible if he fails to upload documents from 1 to 12 on tender notice page 7.
b. The bidder does not upload all the documents (including GST registration) as stipulated in the bid document including the undertaking about deposition of physical EMD of the scanned copy of EMD uploaded.
c. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.
d. The lowest bidder does not deposit physical EMD within a week of opening of tender.
e. The Bidder does not upload ESI & EPF Registration.

29. Bid validity shall be 90 days from last date of submission of bid.

30. Rate of bidders shall be considered inclusive of GST.

List of Documents to be scanned and uploaded within the period of bid submission:

1. Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR of any Scheduled Bank against EMD.
2. Enlistment order of contractor. (In case of CPWD contractors, not required for specialized agency)
3. Certificate of work experience.
4. Certificate of Financial Turnover from CA. (**Form "A")**
5. Banker's Certificate **(Form "B")** or Net Worth Certificate **(Form "B-1")**
6. Certificate of Registration for GST and acknowledgement of up to date filed return of GST.
7. Affidavit as per Notice Inviting Tender Condition **1.3 at page 9** of NIT. **(Affidavit shall be purchased/ notarized between date of publishing and last date of submission of bids beside this NIT/Tender ID and name of work must be mentioned on the affidavit).**
8. Acceptance to execute INTEGRITY PACT.
9. Undertaking as per **'Sl. No. 24 on page No. 6'** on firm's letterhead.
   The physical EMD shall be deposited by me / us with the Authority inviting the tender, in case I / we become the lowest tenderer, within a week of the opening of financial bid, otherwise, department may reject the tender and also take action to debar me / us from tendering in any form in IIT Delhi.
10. ESI & EPF registration.
11. FORM "F" (Duly filled with all required details).
12. In case of Partnership firm if all the papers of tender not signed by all the partners than a power of attorney authorizing the person who has signed the tender paper must be uploaded with the tender documents.
13. Annexure-I (duly filled & signed by the bidders)
14. Annexure-II (duly filled & signed by the bidders)
15. Annexure-III (duly filled & signed by the bidders)
16. Any other Document as specified in the NIT as required.

Note: - All Documents mentioned S.N-1 to 12 are mandatory for technically qualifying and document mentioned 13 to 16 are not mandatory.

Executive Engineer (ED-I),
For & on Behalf of BOG, IIT Delhi
Hauz Khas, NewDelhi-110016

Budget Head: Budget Head: Renovation (Research facility and housing)/35.01.02(IOE) (2021/007/0106)

Copy to: -

1. **Executive Engineer (ED-I) for information.**
2. **D.A. (Works Accounts)**
3. **D.R. (A/Cs) – for opening of tenders on 12/12/2023 at 3:00 PM in the office of D.R. Store**
4. **Noticeboards.**
5. **Office Copy**
6. **Web site Administrator, I.I.T.D**
7. **NIT:- Publicity on Website on Institute as well as on CPP portalhttp://eprocure.gov.inmay be ensured as per instruction issued.**
8. E**-tendering Web.**http://eprocure.gov.in/eprocure/app orwwww.iitd.ac.in

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS: NEW DELHI – 110016
IITD-6 FOR e-TENDERING ANDTERM&CONDITIONS

Item Rate Tender from CPWD enlisted Contractors of appropriate class in composite category / specialized firms having completed work in the appropriate category for the work as per tender notice.

1. The enlistment of the contractors should be valid on the last date of submission of tenders. In case the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of tenders.

1.1 The work is estimated to cost **as per tender notice** This estimate, however, is given merely as a rough guide.

1.2 Details of criteria for eligibility As Indicated in "INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR e- TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE."

1.3 To become eligible for issue of tender, the tenderer shall have to furnish an affidavit asunder: -

I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in IITD in future forever. Also, if such a violation comes to the notice of the Department before the date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee. (Scanned copy to be uploaded at the time of submission of bid)

2. Agreement shall be drawn with the successful bidders on prescribed Form No. IITD - 8 (or other Standard Form as mentioned) which is available as a Govt. of India Publication. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

3. The time allowed for carrying out the work will be **as per tender notice** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.

4. **The site for the work is available.**

5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Sitehttp://eprocure.gov.in/eprocure/appor iitd.ac.in or e-procure.gov **free** of cost.

6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

8. If it is desired to submit a revised financial bid then it shall be mandatory to submit a revised financial bid. If not submitted, then the tender submitted earlier shall become invalid.

9. Earnest Money in the form of Demand Draft or Pay order or Banker`s Cheque or Deposit at Call Receipt (drawn in favour of Registrar IIT Delhi, Hauz Khas, New Delhi) as specified of any Scheduled/ Nationalized Bank and shall be scanned & uploaded to the e- tendering website within the period of tender submission or through RTGS/ NEFT with UTR details and original

should be deposited by lowest bidder within a week after the opening of financial bid in office of **Executive Engineer (ED-I), IIT Delhi, Hauz Khas, New Delhi**

A part of earnest money is acceptable in the form of bank guarantee also. In such a case, 50% of earnest money or Rs. 20 lakhs, whichever is less, will have to be deposited in the shape prescribed above, and balance in shape of Bank Guarantee of any scheduled bank which is to be scanned and uploaded by the intending bidders.

Interested contractor who wish to participate in the bid has also to make following payments in the form of Demand Draft/Pay order or Banker's Cheque of any Scheduled Bank and to be scanned and uploaded to the e-Tendering website within the period of bid submission: http://eprocure.gov.in/eprocure/app.

10. The bid submitted shall become invalid if:
    - **(i)** The bidders are found not eligible.
    - **(ii)** The bidders do not upload all the documents (including GST registration/ **other documents as per Tender Notice**) as stipulated in the bid document.
    - **(iii)** If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically in the office of tender opening authority.
    - **(iv)** The lowest bidder does not deposit physical EMD within a week of opening of tender.

11. The time & date of submission & opening of financial bid of contractors qualifying the **criteria as per Tender Notice** shall be communicated to them at a later date.

12. The contractor whose bid is accepted will be required to furnish a performance guarantee of 3% (Three Percent) of the tendered and accepted of the bided amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/ Demand Draft of any scheduled bank/Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or irrevocable Bank Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

13. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

14. The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.

15. Canvassing, whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

16. The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.

17. The contractor shall not be permitted to tender for works in the IITD responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

18. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as afore said before submission of the tender or engagement in the contractor's service.

19. The tender for the works shall remain open for acceptance for a period of **Ninety (90)**days from last date of submission of bid, if any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.

20. This notice inviting Tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of: -

    a) The Notice Inviting Tender, all the documents including additional conditions, specifications, and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

    b) Standard IITD Form - 8 or other Standard IITD Form as mentioned.

21. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Executive Engineer, then the bid submitted shall become invalid.

Executive Engineer (ED-I)
IIT Delhi, Hauz Khas,
Delhi- 110016

NOTICE INVITING TENDER

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI-110016

Terms & Conditions

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Details of the item	**As per Tender Notice**
Earnest Money Deposit to be submitted	**Rs. 11,35,742/-**
Warranty	**As per Tender Notice, NIT & IITD form 8**
Performance security	**As per Tender Notice, NIT & IITD form 8**

Tender Documents may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app.Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website http://eprocure.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission '.

Tenderers 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 Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/appas per the schedule given in the next page.

No manual bids will be accepted. All quotes (both Technical and Financial should be submitted in the E-procurement portal).

Schedule

Name of Organization		Indian Institute of Technology, Delhi
Tender Type (Open/Limited/EOI/Auction/Single)		Open
Tender Category (Services/Goods/works)		Works
Type/Form of Contract (Work/Supply/ Auction/Service/Buy/Empanelment/ Sell)		Works
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)		E & M and Civil Works.
Source of Fund (Institute/Project)		**Budget Head: Renovation (Research facility and housing)/35.01.02(IOE) (2021/007/0106)**
Is Multi Currency Allowed		No
Date of Issue/Publishing		01/12/2023 (15.00 Hrs)
Document Download/Sale Start Date		01/12/2023 (15.00 Hrs)
Document Download/Sale End Date		11/12/2023 (15.00 Hrs)
Date for Pre-Bid Conference		**Nil**
Venue of Pre-Bid Conference		---
Last Date and Time for Uploading of Bids		11/12/2023(15.00 Hrs)
Date and Time of Opening of Technical Bids		12/12/2023 (15.00 Hrs)
Tender Fee	**NIL**	(To be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C: Registrar IIT Delhi SBI A/C No.: 10773572622 Name of the Bank: State Bank of India, IIT Delhi, Hauz Khas, NewDelhi-110016 IFSCCode: SBIN0001077 MICRCode: 110002156 Swift No.: SBININBB547 (This is mandatory that UTR Number is provided in the on- line quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II)**or as per NIT/ Tender notice**
EMD	**Rs. 11,35,742/-**	
No. of Covers (1/2/3/4)		**02**
Bid Validity days (180/120/90/75/60/30)		**90 days (From last date of Submission of bid)**
Address for Communication		**Office of the Executive Engineer (ED-I), Main Building, IIT Delhi, Hauz Khas, New Delhi-110016**
Contact No.		**011-26548437**
Fax No.		**Nil**
Email Address		**aashish@admin.iitd.ac.in**

Instructions for Online Bid Submission:

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). 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: http://eprocure.gov.in/eprocure/app

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.

2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3) 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.

4) 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.), with their profile.

5) 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.

6) Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC /eToken.

SEARCHING FOR TENDER DOCUMENTS

1) 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.

2) 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 Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) 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.

PREPARATION OF BIDS

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

2) 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 documents that need to be submitted. Any deviations from these may lead to rejection of the bid.

3) The bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.

4) 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, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" 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.

SUBMISSION OF BIDS

1) Bidder should login to the site well in advance for bid submission so that he/she upload the bid intime i.e., on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) The bidder has to select the payment option as "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, PageNo.2).

4) A standard BoQ format has been provided with the tender document to be filled in 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 white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

OR

In some cases Financial Bids can be submitted in PDF format as well (in lieu of BOQ).

5) 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.

6) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done.

7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8) 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.

9) Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

ASSISTANCE TO BIDDERS

1. 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.

2. 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 1800 233 7315.

General Instructions to the Bidders

1) The tenders will be received online through portalhttp://eprocure.gov.in/eprocure/app. In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

2) 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 https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link “Information about DSC”.

3) Tenderer are advised to follow the instructions provided in the ‘Instructions to the Tenderer for the e- submission of the bids online through the Central Public Procurement Portal for e-Procurement at http://eprocure.gov.in/eprocure/app.

Terms & Conditions Details

S.No.	Specification
1.	**Due date**: The tender must be submitted on-line before the due date. The offers received after the due date and time will not be considered. No manual bids will be considered.
2.	**Preparation of Bids**: The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format i.e BOQ_XXXX. OR Financial Bids to be submitted in Excel. The Technical bid and the financial bid should be submitted Online.
3.	**EMD (if applicable)**: **As per NIT**
4.	**Refund of EMD :- As per NIT**
5.	**Opening of the tender**: **As per Tender Notice, NIT & IITD form 8**
6.	**Acceptance/ Rejection of bids:** The competent authority of IIT Delhi reserves the right to reject any or all offers without assigning any reason.
7.	**Pre-qualification criteria: - Mentioned in Tender notice**
8.	**Performance Security**:-**Mentioned in Tender notice**
9.	**Force Majeure :- As per IITD form 8**
10.	**Risk & Cost Clause** : **As per IITD form 8**
11.	**Delivery and Documents: As per Tender Notice & NIT & IITD form 8**
12.	**Delayed delivery: As per Tender Notice & NIT & IITD form 8**
13.	**Prices**: **As per Tender Notice & NIT & IITD form 8**
14.	**Progress of Work** :**As per Tender Notice & NIT & IITD form 8**
15.	**Inspection and Tests: As per Tender Notice & NIT & IITD form 8**
16.	**Resolution of Disputes**: **As per Tender Notice & NIT & IITD form 8**
17.	**Applicable Law: As per Tender Notice & NIT & IITD form 8**
18.	**Supplier Integrity : As per Tender Notice & NIT & IITD form 8**
19.	**Training : As per Tender Notice & NIT & IITD form 8**
20.	**Installation & Demonstration : As per Tender Notice & NIT & IITD form 8**

21.	**Incidental services: As per Tender Notice & NIT & IITD form 8**
22.	**Defect liability Period: As per Tender Notice & NIT & IITD form 8**
23.	**Governing Language: As per Tender Notice & NIT & IITD form 8**
24.	**Applicable Law : As per Tender Notice & NIT & IITD form 8**
25.	**Notices : As per Tender Notice & NIT & IITD form 8**
26.	**Taxes : As per Tender Notice & NIT & IITD form 8**
27.	**Termination for Default : As per Tender Notice & NIT & IITD form 8**
28.	**Disputes and Jurisdiction**: **As per Tender Notice & NIT & IITD form 8**
29.	**Completion certificate**: **As per Tender Notice & NIT & IITD form 8**

Bid Submission

Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online in two Envelops as explained below:-

Bid Document – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1.	Technical Bid	Compliance Sheet as per Annexure – I	.PDF
2.		Organization Declaration Sheet as per Annexure – II	.PDF
3.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s).(Annexure-III)	.PDF
4.		Technical supporting documents in support as per Page-6 & 7 of NIT	.PDF
Bid Document – 2			
Sl. No.	**TYPES**	**Content**	
1.	Financial Bid	Price bid should be submitted in Excel format.	.xls

I.I.T.D- 6 FOR e-TENDERING	I.I.T.D

INDIAN INSTITUTE OF TECHNOLOGY, DELHI
HAUZ KHAS, NEW DELHI - 110016
NOTICE INVITING TENDER

The Executive Engineer (ED-I), IIT DELHI, HAUZ KHAS, New Delhi-16 (Phone No 011-26548437) on behalf of Board of Governors invite online Item Rate Tender from CPWD enlisted Contractors of appropriate class in composite category / specialized firms in single stage two bid system for "**Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi."Sub Head: - E&M and Civil Works**

1. The enlistment of the contractors should be valid on the last date of submission of orders.

   In case only the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of tenders.

1.1 The work is estimated to cost **Rs. 5, 67, 87,078/-** This estimate, however, is given merely as a rough guide.

1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.

For composite bid, besides indicating the combined estimated cost put to tender, should clearly indicates the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

1.2 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: -

Criteria of eligibility for submission of bid documents.

1.2.1 Criteria of eligibility for CPWD as well as non-CPWD contractors.

Three similar works each of value not less than 40% of estimated cost or two similar work each of value not less than 60% of estimated cost or one similar work of value not less than 80% of estimated cost (rounded to nearest Rs. 1000/-) during last 7 years ending on previous day of last day of submission of bids.

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated during last 7 years ending on previous day of last day of submission of bids.

1.2.2 To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under:

I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in I.I.T.D in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer- in-Charge shall be free to forfeit the entire amount of Performance Guarantee.

2. Agreement shall be drawn with the successful bidders on prescribed Form No. I.I.T.D 7/8 which is available as I.I.T.D. Publication. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.

3. The time allowed for carrying out the work will be **as per Tender Notice** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4. **The site for the work will be made available in stages.**

5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Site www.iitd.ac.in or e-procure.gov.in free of cost.

6. After submission of the bid the contractor can re-submit a revised bid any number of times but before last time and date of submission of tender as notified.

7. While submitting the revised bid, the contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

8. If it is desired to submit a revised financial bid, then it shall be mandatory to submit revised financial bid. If not submitted, then the tender submitted earlier shall become invalid.

   Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice / web notice shall be scanned and uploaded to the tender website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in press notice / web notice shall have to be submitted by the lowest bidder in the office of tendering authority.

   Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited tender online fees with and earnest money deposit and other documents scanned and uploaded are found in order. The bid submitted shall become invalid &Tender fees shall not be refunded if:

   (i) The bidder is found ineligible.

   (ii) The bidder does not upload all the documents as stipulated in the bid documents. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.

9. The contractor whose bid is accepted will be required to furnish **a performance guarantee of 3% (Three Percent)** of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/

   Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed.

   Deposit Receipts or irrevocable Bank Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

10. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

11. The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

12. Canvassing, whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.

13. The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.

14. The contractor shall not be permitted to bid for works in the IITD responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the IIT Delhi. Any

breach of this condition by the contractor would render him liable to be debarred from the bidding process in future in IIT Delhi.

15. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

16. The bid for the works shall remain open for acceptance for a period of **Ninety (90) days** from the last date of submission of bid, if any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIT Delhi shall, without prejudice to any other right or remedy, the bidder shall debarred for tendering in IIT Delhi for a period of one year.

17. This notice inviting bid shall form a part of the contract document. The successful bidder / contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

The Notice Inviting Bid, all the documents including additional conditions, specifications, and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

b) Standard IITD Form –7/8 or other Standard IITD Form as mentioned.

18. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Executive Engineer, then the bid submitted shall become invalid and the IIT Delhi shall without prejudice to any other right or remedy, the bidder shall debarred for tendering in IIT Delhi for a period of one year.

19. **For Composite Bid**

19.1 The **Executive Engineer [ED-I]** shall be Engineer-in-charge of the major component and will call the bids for the composite work, Earnest Money will be fixed with respect to the combined estimate cost put to tender for the composite bid.

19.2 The bid document will include following three components: -

Part A- IITD-6, IITD-7 include schedule A to F for the major component of the work. Standard General Conditions of contract for CPWD 2023 as corrected/modified up to date.

Part B – General/Specific conditions, specifications, and schedule of quantities applicable to major component of the work.

Part C: - Schedule A to F for minor component of the work I.E. (Institute Engineer / EE in-charge of major component shall also be competent authority under clause

2 and clause 5 as mentioned as schedule A to F to major components), General/ specific conditions, specifications, and schedule of quantities applicable to minor component(s) of the work.

19.3 The bidder shall associate himself with experienced agencies of the appropriate class eligible for bid for each of the minor component individually.

19.4 The eligible bidders shall quote rates for all items of major component as well as for all items of minor component of work.

19.5 After acceptance of the bid by Competent authority, the **EE (ED-I) i.e** Engineer in charge of the work shall issue letter of award on behalf of the Board of Governors, IIT Delhi, after the work is awarded, the main contractor will have to enter into one agreement with **EE (ED-I)** and has also to sign two or more copies of agreement. Such signed set of agreement shall be handed over to EE CD-III) in charge of minor component. EE of major component will operate part A and EE (CD-III) in charge of minor component shall operate part B along with Part A of the agreement.

19.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.

19.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works. The Earnest Money will become part of security deposit of the major component of work.

19.8 The main contractor has to associate agency(s) for minor component (s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency (s) to Engineer-in-charge of minor component(s) within prescribed time, Name of agency (s) to be associated shall be approved by Engineer-in-charge of minor component(s).

19.9 In case the main contractor changes any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of the Engineer-in-charge of minor component. The new agency/agencies shall also have an agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.

19.10 **The main contractor has to enter into agreement with contractor(s) associated by him for execution of minor components(s) in case the main contractor does not have capability to execute the minor component work**. Copy of such agreement shall be submitted to EE(ED-I) and EE(CD-III), in charge of major and minor component. In case of a change of associate contractor, the main contractor has to enter into an agreement with the new contractor associated by him.

19.11 Running payment for the major component shall be processed by EE of major discipline to the main contractor. Running payment of minor components shall be made by EE (CD-III), discipline of minor component directly to the main contractor.

19.12A The composite work shall be treated as completed when all the components of the work are complete and certified. The completion certificate of the composite work shall be recorded by Engineers-in-charge of major

component after record of completion certificate of all other components.

19.12B Final bill of whole work shall be finalized and paid by the EE of major component. EE (CD-III**), in charge of minor component(s) will prepare and pass the final bill for their respective component of work and pass on the same to the EE of major component for including in the final bill for composite contractor.**

INTEGRATY PACT e-TENDERING	I.I.T.D

To,

……..,

……..,

……..

Subject: - Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M and Civil Works.
NIT No. 0144/79/IITD/EE(ED-I)/2023-24

Dear Sir,

It is here by declared that I.I.T.D is committed to follow the principle of transparency, equity, and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer / bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the I.I.T.D.

Yours faithfully

Executive Engineer (ED-I)

ACCEPTANCE TO EXECUTE INTEGRITY PACT	I.I.T.D

(To be signed by bidder and upload the scanned copy)

To,

Executive Engineer (ED-I)
IIT Delhi, Hauz Khas, New Delhi – 110016.

Subject: - Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M and Civil Works.

Dear Sir,

I/We acknowledge that I.I.T.D is committed to following the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender / bid documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by I.I.T.D. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, I.I.T.D shall have unqualified, absolute and unfettered right to disqualify the tender / bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

INTEGRATY PACT e-TENDERING	I.I.T.D

To be signed by the bidder and same signatory competent / authorized to

sign the relevant contract on behalf of I.I.T.D.

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this ..... day of..... 20.....

BETWEEN

The Board of Governors, I.I.T. Delhi, Hauz Khas, New Delhi - 16 represented through Executive Engineer (ED-I) IIT Delhi.

....., (Hereinafter referred as the(Address of Division)

'**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....(Name and Address of the Individual/firm/Company) through ..... (Hereinafter referred to as the (Details of duly authorized signatory) "**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns) **Preamble.**

WHEREAS the Principal / Owner has floated the Tender (NIT No. .....) (Hereinafter referred toas "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for

…….....

(Name of work) hereinafter referred to as the "**Contract**".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

INTEGRATY PACT e-TENDERING	I.I.T.D

Now, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

Article 1: Commitment of the Principal/Owner

1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

1) It is required that each Bidder/Contractor (including their respective officers, employees, and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.\

c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests**.

5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action, or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by the Principal/Owner**.

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit**: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to

terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may

have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of

3) **Criminal Liability**: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes an incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.

3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.

2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 Months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, I.I.T.D.

Article 7- Other Provisions

1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Division of the Principal/Owner, who has floated the Tender.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4) Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement on their original intensions.

5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....
(For and on behalf of Principal/Owner)

.....
(For and on behalf of

Bidder/Contractor)

WITNESSES:

1. .....

(Signature, name, and address)

2. .....
(Signature, name, and address)

Place:
Date:

BANK GUARANTEE BOND	I.I.T. D

Form of Earnest Money Deposit Bank Guarantee Bond

WHEREAS contractor. ……(Name of contractor) (hereinafter called "the contractor") has submitted his tender dated (date) for the construction of(name of work) (hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that we .....…..(name of bank) having our registered office at.....(hereinafter called "the Bank") are boundunto.....
(Name and division of Executive Engineer) (hereinafter called "the Engineer-in-Charge") in the sum of Rs. ..... (Rs. in words .....) for which payment well
and truly to be made to the said Engineer-in-Charge the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this .....day of ..... 20....
THE CONDITIONS of this obligation are:

(1) If after tender opening the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender.

(2) If the contractor having been notified of the acceptance of his tender by the Engineer-in-Charge:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required.
OR
(b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor,
OR
(c) fails or refuses to start the work, in accordance with the provisions of the contract and Instructions to contractor,
OR
(d) fails or refuses to submit a fresh Bank Guarantee of an equal amount of this Bank Guarantee, against Security Deposit after award of contract.

We undertake to pay to the Engineer-in-Charge either up to the above amount or part thereof upon receipt of his first written demand, without the Engineer-in-Charge having to substantiates his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.
This Guarantee will remain in force upto and including the date*.....after the deadline for
submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the Engineer-in-Charge, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE .....

WITNESS.....SEAL

SIGNATURE OF THE BANK
(SIGNATURE,NAME AND ADDRESS)

*Date to be worked out on the basis of validity period of 6 months from last date of receipt of tender.

PERFORMANCE GUARANTEE

(i) The contractor shall submit an irrevocable Performance Guarantee of 3% (Three percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at Call receipt of any scheduled bank/Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay Order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.

(ii) The **Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 Days** beyond that. In case the time for completion of work gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest.

(iii) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the BOG is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.

(b) Failure by the contractor to pay BOG any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.

(iv). In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the BOG.

FINANCIAL INFORMATION (FORM 'A')

I. Financial Analysis - Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

Sl. No.	Particulars	Financial Year				
		2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
1	Gross Annual Turnover Amount					
2	Profit/loss (Standalone Finance Statement and Consolidated Financial Statement both)					

(i) Gross Annual Turn Over on construction works.

(ii) Profit/Loss (standalone financial statement and consolidated financial statement both).

II. Financial arrangements for carrying out the proposed work.

Signature of Chartered Accountant with Seal

Signature of Bidder(s)

FORM "B"

BANKERS' CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge and information that M/s./ Sh……..... having marginally noted address, …….as a Customer of our bank are/ is respectable and can be treated as good for any engagement up to a limit of Rs……. (Rupees……)

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature) For the Bank

NOTE

1. Bankers Certificates should be on letter head of the Bank, addressed to tendering authority.

2. In case of Partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM "B-1"

FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT

"It is to certify that as per the audited balance sheet and profit & loss account during the financial year ....., the Net Worth of M/s …….…… (Name & Registered Address of individual/firm/ company), as on ……. (the relevant date) is Rs. …… after considering all liabilities. It is further certified that the Net Worth of the company has not eroded by more than 30 % in the last three years ending on (the relevant date)." Unique Document Identification Number (UDIN) ……

Signature of Chartered Accountant ……..……

Name of Chartered Accountant ……...……

Membership No. of ICAI

Date and Seal

FORM “F”

STRUCTURE & ORGANISATION

1. Name & Address of the bidder
2. Telephone no./ Telex no./ Faxno.
3. Legal status of the bidder (attach copies of original document defining the legal status)

a. An Individual

b. A proprietary firm

c. A firm in partnership

d. A limited company or Corporation

4. Particulars of registration with various Government Bodies (attach attested photocopy)
   Organization/ Place of registration and Registration No.

   1.

   2.

   3.

5. Name and tiles of Directors & Officers with designation to
   be concerned with this work.....!
6. Designation of individuals authorized to act for the organization….....!
7. Has the bidder or any constituent partner in case of partnership firm, ever abandoned the
   awarded work before its completion?
   If so, give name of the project and reasons for abandonment .....!
8. Has the bidder or any constituent partner in case of partnership?
   firm, ever been debarred/ blacklisted for tendering in any organization.
   at any time? If so, give details.....
9. Past work experience in IIT Delhi will be considered in deciding the Technical bid…..... !

Signature of Bidder(S)

ANNEXURE-I
COMPLIANCE SHEET

TECHNICAL SPECIFICATION:

S.No.	Technical Bid Requirement As per Tender Notice & NIT & IITD form 8	Compliance Y/N
1	Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR of any Scheduled Bank against EMD.	
2	Enlistment order of contractor.(If Applicable)	
3	Certificate of work experience.	
4	Certificate of Registration for GST and acknowledgement of up to date filed return of GST.	
5	Affidavit as per Notice Inviting Tender Condition 1.3 page 8 of NIT. **(Affidavit shall be purchased/ notarized between date of publishing and last date of submission of bids beside this NIT/Tender ID and name of work must be mentioned on the Affidavit.).**	
6	Acceptance to execute INTEGRITY PACT.	
7	Undertaking as per **page 6/ Sl. No. 24'** on firm's letter head. **"The physical EMD shall be deposited by me / us with the Authority inviting the tender, in case I / we become the lowest tenderer, within a week of the opening of financial bid, otherwise, department may reject the tender and also take action to debar me / us from tendering in any form in IIT Delhi"**	
8	ESI & EPF registration.	
9	FORM "A" (Duly filled with all required details).	
10	FORM "B" (Duly filled with all required details).	
11	FORM "B-1" (Duly filled with all required details).	
12	FORM "F" (Duly filled with all required details).	
13	Annexure-1 (Dully Filled & signed by the bidders)	
14	Annexure 2 (Dully Filled & signed by the bidders)	
15	Annexure 3 (Dully Filled & signed by the bidders)	
16	In case of Partnership firm if all the papers of tender not signed by all the partners than a power of attorney authorizing the person who has signed the tender paper must be uploaded with the tender documents.	
17	Any other documents given in NIT	
18	BOQ	

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

Signature of Bidder

Name:_____

Designation:_____

Organization Name:_____

ANNEXURE-II

<< Organization Letter Head >>
DECLARATION SHEET

We,_____hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.
This is certified that our organization has been registered as per Tender Notice & NIT & IITD form 8Tender.We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.	NAME & ADDRESS of the Vendor/ Manufacturer / Agent
1. Phone	**As per Tender Notice & NIT**
2. Fax	
3. E-mail	
4. Contact Person Name	
5. Mobile Number	
6. GST Number	
7. PAN Number	
8.(In case of on-line payment of Tender Fees) UTR No. (For Tender Fee)	
9.(In case of on-line payment of EMD) UTR No. (For EMD)	

(Signature of the Tenderer)

Name:

Seal of the Company

Annexure-III

List of Govt. Organization/Deptt.

List of Government Organizations for whom the Bidder has undertaken such work As per Tender Notice & NIT & IITD form 8		
Name of the organization	**Name of Contact Person**	**Contact No.**
AS PER TENDER NOTICE		

Signature of

Bidder Name:_____

Designation:_____

Organization Name:_____

Contact No.: _____

PART-B

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI - 110016
Item Rate Tender & Contract for Composite Work

Tender for the work of: **Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi.**

Sub Head: - E&M and Civil Works

To be submitted by **as per tender notice** to

……

(i) To be opened in presence of bidders who may be present at **as per tender notice**……

in the office of **D.R. (Store)**

Issued to ……

Signature of officer issuing the documents ……..……

Designation..……..……

Date of Issue ……..

TENDER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents, and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the The Board of Governors, I.I.T. Delhi, Hauz Khas, New Delhi - 16 within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for **Ninety (90)** days from last date of submission of bid.
A sum of **as per tender notice** is hereby forwarded in Banker Cheque or Demand Draft or Fixed Deposit receipt of a schedule bank drawn in favor of IIT Delhi as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period. I/We agree that the said The Board of Governors,
I.I.T. Delhi, Hauz Khas, New Delhi - 16 or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that The Board of Governors, I.I.T. Delhi, Hauz Khas, New Delhi - 16 or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.5 of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid. I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in I.I.T.D in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

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

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of The Board of Governors, I.I.T. Delhi, Hauz Khas, New Delhi - 16 for a sum of

(Rupees… .....).

The letters referred to below shall form part of this contract agreement: -

(a)

(b)

(c)

For & on behalf of Board of Governors, IIT Delhi Signature

……..

Dated:

Designation ……

PROFORMA OF SCHEDULES	I.I.T.D

SCHEDULES (A to F)

(For Civil& Electrical Component)

SCHEDULE ‘A’

Schedule of quantities for **Electrical Works and Civil Works** as attached.

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S.No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
1	2	3	4	5
----------NIL----------				

SCHEDULE 'C'

Tools and plants to be hired to the contractor.

S.No.	Description	Hire charges per day	Place of Issue
1	2	3	4
----------NIL----------			

SCHEDULE ‘D’

Extra schedule for specific requirement/document for the work, if any.	Nil.

SCHEDULE ‘E’

Reference to General Conditions of contract :	GCC for Maintenance work 2023 for CPWD works along with correction on slips/amendments issued up to last date. of submission of bid.

Name of Work	:	**Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M and Civil Works**
Estimated cost of work:	:	**Rs.5,67,87,078/-**
Earnest Money:	:	**Rs. 11,35,742/-**
Performance Guarantee	:	3% of tendered Value
Security deposit	:	2.5 % of tendered value

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS:

1.	Officer inviting tender	:	Executive Engineer [ED-I]
2.	Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.5	:	See below

Definitions:

2(i)	Engineer-in-Charge	:	Executive Engineer [ED-I]
2(ii)	Accepting Authority	:	Institute Engineer
2(iii)	Percentage on cost of materials and Labour to cover all overheads and profits:	:	15%
2(iv)	Standard Schedule of Rates:	:	DSR-2021 for Civil + 7% cost Index on Civil & Electrical works on DSR-2022 and GST factor 1.0633 with up-to-date correction slip on date of submission of bid & Market Rate.
2(v)	Department:	:	**Works department at I.I.T Delhi**
2(vi)	IITD Form &CPWD GCC for Maintenance work 2020, modified & corrected last date of submission of bid.		

Clause1

(i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance : 15 days

(ii) Maximum allowable extension with late fee @ 0.1 % per day of Performance guarantee amount beyond the period provided in (i) above, : 1 to 15days

Clause2

Authority for fixing compensation under Delay: : Institute Engineer

Clause5

Number of days from the date of issue of letter of acceptance for reckoning date of start : 10 (Ten) days

MILESTONE CHART

Sl. No.	**Description of milestone (financial terms)**	**Period for completion from date of start in days/months**	**Withheld amount for non-achievement of milestone.**
1	1/8th (of the whole work)	1/4th (of the whole work)	In the event of not achieving the necessary progress as assessed from the running payment, 1% of the Tender value of work will be withheld for failure. of each milestone.
2	3/8th (of the whole work)	1/3th (of the whole work)	
3	3/4th (of the whole work)	3/4th (of the whole work)	
4	Full	Full	

Allowed for execution of work : **08 Months.**

Authority to decide:

(i) Extension of Time : Institute Engineer

(ii) Rescheduling of milestones : Institute Engineer

(iii) Shifting of Date of start in case of Delay in handing over of site : Institute Engineer

Clause (6 or 6A) : Clause 6A

Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment: : Minimum Rs. 20.00 Lakhs

Clause -7A : **As per Institute Policy**

No running account bill shall be paid for the work till the applicable labour license, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.

Clause10A

List of testing equipment to be provided by the contractor at site lab : **Not Applicable**

Clause 10B : **Applicable**

Clause10C

Component of labour expressed as percent of value of work**: 25%** for civil work and **15%** for Electrical work.

Clause10CA **:** **Not Applicable**

S. No.	Material Covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA* (July 2022)
1.	Cement	**Not Applicable**	
2.	Cement		
3.	Reinforcement bars		
4.	Structural steel		

Clause 10CC

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown. in next column	**Not Applicable**

Clause11

Specifications to be followed for execution of work	**CPWD specifications 2019 Vol I and Vol II** and **CPWD Specification 2023** for Electrical works corrected slips &manufacturers Specifications up to the last date of bid submission/uploading of tender. Detailed nomenclature of items& specifications for market rate items as per Engineer-in-charge

Clause12

	Type of work		**Maintenance work including works of up-gradation, aesthetic, special repair, addition/alteration**
12.2 & 12.5	Deviation limit beyond which clauses 12.2 & 12.5shall apply for building work	:	100%
12.5 (I)	Deviation Limit beyond which clauses 12.2 & 12.5 shall applicable for foundation work (Except items mentioned in earthwork subhead of DSR and related items)	:	100%
12.5 (II)	Deviation Limit for Items in earth work subhead of DSR and related items		100%

Clause16

Competent Authority for deciding reduced rates : Institute Engineer

Clause18

List of mandatory machinery, tools & plants to be deployed by the contractor at site : As per requirement

Clause25

Constitution of Dispute Redressal Committee (DRC)	
Chairman	NIL
Member	
Member	

Note: The above constitution of Dispute Redressal Committee is subject to change, for which necessary notification shall be issued by the competent authority of the department, if required.

Clause 32

Requirement of Technical Staff(s) & Recovery Rate

Cost of Work (Rs. In Crore)	**Requirement of Technical Staff**		**Minimum Experience (Years)**	**Designation**	**Rate at which recovery shall be made from the Contractor in the event of not fulfilling provision of clause 32**
	Qualification	Number			
More than 5 to 10cr.	Graduate Engineer Graduate Engineer or Diploma Engineer	1 1+1	5 (and having experience of one similar nature of work) 2 or 5 respectively	Project Manager Project planning/ quality/Site/billing Engineer	Rs. 25,000 per month Rs. 15,000/- per month per person

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma Holder with minimum 10 years relevant experience with a reputed construction company can be treated at par with graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50 % of requirement of degree Engineer.

Clause 38

i)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2021with up to date correction printed by C.P.W.D.	
ii)	Variations permissible on theoretical quantities	
a)	Cement:	
	For works with estimated cost put to tender not more than Rs.5 lakh.	3% plus/minus. (Three percent)
	For works with estimated cost put to tender more than Rs.5 lakh	2% plus/minus. (Two percent)
b)	Bitumen all works.	2.5% plus & only & nil on minus side
c)	Steel Reinforcement and structural steel sections for each diameter, section and category	2% plus/minus (Two percent)
d)	All other materials	
e)	Schedule for determining theoretical consumption of Brick work on the basis of DSR 2021	

SPECIAL CONDITIONS

1. Non-Judicial stamp paper worth Rs. 10/- (Ten Rupees only) will be submitted by contractor which will have to be signed as token of acceptance.
2. No T & P would be supplied by the Institute and contractor will have to make his own arrangement.
3. The contractors are advised to get acquitted with the proposed work including specifications & its site and additional conditions carefully before quoting. No claim of any sort shall be entertained or account of any site conditions and ignorance of specifications & additional conditions. The work shall be carried out as per the availability of site.
4. The work shall be carried out as per CPWD specifications for civil and electrical work with up – to date correction slips unless otherwise specified in the nomenclature of individual item or in the specification, additional conditions where specifications are silent, the decision of Engineer-in-Charge shall be final and binding on contractor.
5. The rates quoted by the contractor shall be taken as net and nothing extra shall be paid on any account i.e Royalty, Cartage, GST & stacking of material required at places etc. The rates for different items of work shall apply for Heights & Depths, Leads & Lifts unless otherwise specified in the agreement or specifications applicable in the agreement.
6. Any damage done by the contractor to any existing item / any part of the building during the course of execution of work shall be made good by at his own cost.
7. Articles manufactured by the reputed firms as per approved make list and as approved by Engineer-in-charge shall only be used at work.
8. The sample of material required in the work brought at site shall be submitted prior technical specification of individual item and got approval of material from Engineer –in-Charge before use in execution of work.
9. **The sample of material required for Testing shall be provided at free of cost by the contractor. All other expenditure to be incurred for taking sample, conveyance, packing and testing charges etc. shall be borne by the contractor.**
10. The contractor shall submit a detailed program of work within 3 days of the date of award of work. The Engineer – in- Charge can modify the program and the contractors have to work accordingly.
11. The contractor shall make his own arrangement for getting the permission with respect to trucks from the Traffic Police.
12. No payment shall be made to the contractor for any damage caused by the rain, snowfall or any other natural causes what so ever during the execution of work.
13. Some restrictions may be imposed by the security staff of IIT Delhi etc. on the working and or movement of labour& material. No labour camp/ huts shall be allowed in IIT Campus. The contractor shall make his own arrangement for labour huts outside the campus. However, construction of cement godown and Chowkidar's hut in the Campus shall be permitted. The contractor shall be bound to follow all such restrictions/ instructions, and nothing shall be payable on this account.
14. The contractor shall be fully responsible for the safe custody of the material issued or brought at site by him for doing the work.
15. The Malba / Garbage generated at site due to construction activities shall be removed from the site immediately & shall be disposed of by the contractor to the approved dumping site of MCD and all statutory approvals from local bodies shall be a sole responsibility of contractor.
16. The contractor shall clean the site thoroughly of scaffolding materials, rubbish, equipment's left out of his work & dress the site around the building to the complete satisfaction of the Engineer-in-Charge before the work is treated as completed.

17. Contractor has to quote against the item of schedule of credit of material. The contractor cannot quote either minus rate or Zero rate for these items.

18. Income tax and other taxes as applicable shall be deducted from the bills of the contractor.

19. 1% labour cess or as applicable will be deducted from the bills of the contractor.

20. Water charges @1% and Electricity charges @ 1% of gross work done shall be deducted from bills of contractor if electricity and water provided by IIT Delhi.

21. Agency has to take proper safety major during the execution of work.

22. GCC form 7/8 shall form part of NIT and the bidder shall go through GCC 2023 CPWD before quoting rates and the same shall be deemed to be accepted by bidder if he participates in the tender.

23. The contractor shall submit the programme of execution of work as per clause 5 of GCC of IIT form 7/8 of NIT including list of workers to be deployed by contractor for this work.

24. Contractor shall be responsible for keeping site free of any kind of mosquito breeding. If it is found that breeding is taking place the entire responsibility shall be of contractor to bear challan etc. done by local bodies.

25. GST shall be considered as inclusive in quoted rate of agency.

26. Electrical work will be executed only through the agency who is having valid electrical license and the copy of valid electrical license will be submitted before start of work.

27. The addressable fire alarm system shall be seamless to the existing installed fire alarm system in various buildings like Main Building, R&I Park etc.

28. Specialized Work:

The bidder should either himself meet the eligibility conditions for the work as above or otherwise he will have to associate an agency meeting the eligibility requirements for specialized works after award of work and has to submit details of such agency(s) conforming eligibility conditions as defined in the bid document to the Engineer in charge before taking up specific component. Names of the agency(s) to be associated shall be approved by the competent authority

The contractor of appropriate class shall have to associate other agency(s) for execution of each of the work(s), which fulfils the eligibility criteria as defined after taking prior approval. The Composite Contractor and the associated specialized agencies shall give required affidavit to confirm their association. Tender accepting authority may approve change of sub agency in case it is required during the currency of contract. However, the composite category contractor shall also be eligible to carry out himself any or all these works without associating any specialized agency provided: -

a) He fulfills the prescribed eligibility criteria respectively for these work(s).

OR

He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/ service provider of the manufacturer or specialized agency as per criteria mentioned.

The main contractor, if does not fulfil the criteria himself, shall have to associate with specialized agency fulfilling the following eligibility criteria having successfully completed during last seven years ending up to previous day of last date of submission of tender as given below with completion certificate issued by an officer not below the rank of Executive Engineer or Equivalent duly attested. The Completion certificate should contain the name of the contractor with address, Name of work and location, date of start of work, actual date of completion, amount of work done, satisfactory performance etc.

28.1 The following works are considered as specialized work.

Sl. No.	Specialized work(s) / item of work(s)	Criteria of associate agencies
1	SITC of clean room facility as per (Class 1000 and Class 10000)	The associate agency should have successfully completed works, as mentioned under during last 7 years ending previous day of last date of submission of tender. (i) Three similar works each costing not less than Rs.92.00 lacs or (ii)Two similar works each costing not less than Rs. 137.00 lacs or (iii) One similar work costing not less than Rs. 183.00 lacs. The value of executed similar work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to previous day of last day of submission of bids. Specialized work shall means" SITC of clean room facility as per (Class 1000 and Class 10000) "
2	SITC of HVAC works in clean room facility as per (Class 1000 and Class 10000)	The associate agency should have successfully completed works, as mentioned under during last 7 years ending previous day of last date of submission of tender. (i) Three similar works each costing not less than Rs.51.00 lacs or (ii)Two similar works each costing not less than Rs. 76.00 lacs or (iii) One similar work costing not less than Rs. 102.00 lacs. The value of executed similar work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to previous day of last day of submission of bids. Specialized work shall means"(SITC of HVAC works in clean room facility of (Class 1000 and Class 10000) "
3	SITC of Addressable Fire Alarm System	The associate agency should have successfully completed works, as mentioned under during last 7 years ending previous day of last date of submission of tender. (i) Three similar works each costing not less than Rs.3.80 lacs or (ii)Two similar works each costing not less than Rs. 5.80 lacs or (iii) One similar work costing not less than Rs. 7.70 lacs. The value of executed similar work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to previous day of last day of submission of bids. Specialized work shall means"(SITC of Addressable Fire Alarm and Fire Fighting System)"
4	SITC of Gas based firefighting system	The associate agency should have successfully completed works, as mentioned under during last 7 years ending previous day of last date of submission of tender. (i) Three similar works each costing not less than Rs.12.60 lacs or (ii)Two similar works each costing not less than Rs. 18.90 lacs

		or (iii) One similar work costing not less than Rs. 25.20 lacs. The value of executed similar work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to previous day of last day of submission of bids. Specialized work shall means"(SITC of Gas based firefighting system)"

Scope of Work

The Scope of work shall be '**Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi** including Testing, Commissioning and Validation of the facility.

The scope under the contract shall cover and include the following works to be executed by the Contractor on Turnkey Basis. The scope under the contract shall inclusive but not limited to the work mentioned below:

Supply, installation, execution, testing and commissioning of following items and works on 'Turnkey Basis':

1. Dismantling of existing internal brick partition walls, floors etc. including removal of malba and site clearance works as required.
2. Internal construction works including prefabricated partition wall and ceiling, doors and view panels etc. in complete facility.
3. Self-levelling epoxy flooring in complete facility.
4. Drain piping and water distribution piping in complete facility.
5. Emergency Eye and Hand wash station in Sterilisation room & Clean room (Class10, 000/ Class 1,000).
6. Wring for light, power, networking, communication/intercom, fire alarm system, CCTV, access control system etc. in complete facility.
7. Light fittings and fixtures, switches, sockets, power distribution boards.
8. Light and power including MCB's etc., and main power supply LT panel in complete facility.
9. Fire alarm system, CCTV system, access control system, EPABX, telephone handsets in complete facility.
10. **Inverter for lighting backup, UPS for Access Control and Building Management System.**
11. HVAC plant and HVAC system including Air cooled chiller, Air handling units, Exhaust blowers.
12. Supply, return and exhaust ducting with insulation, diffusers/grilles, volume control dampers and fire dampers.
13. Containment HEPA housing with filters for Sterilisation room & Clean room (Class10,000/ Class 1,000) supply and exhaust.
14. Chilled water pumps (1 working + 1 standby) including interconnecting piping, insulation, valves, supports, expansion tanks etc.
15. Building management system for complete HVAC system including pressure sensors, temperature & Rh sensors, VAV for Sterilisation room & Clean room (Class10,000/ Class 1,000), VFD's for AHU and Exhaust blower motors, control wiring and BMS Panel with PLC with Software and HMI touch screen panel for display.
16. Prefabricated Shower module and Shower system for Sterilisation room & Clean room (Class10,000/ Class 1,000).
17. Chemical type Effluent decontamination system for Sterilisation room & Clean room (Class10,000/ Class 1,000).
18. Class 2 A2 Type Biosafety Cabinets for Sterilisation room & Clean room (Class10,000/ Class 1,000).
19. Pass Box and Dunk tank for Sterilisation room & Clean room (Class10,000/ Class 1,000).
20. Work station in Sterilisation room & Clean room(Class10,000/ Class 1,000) with chairs.
21. Double Door Autoclave for Sterilisation room & Clean room(Class10,000/ Class 1,000).
22. Ventilated Garment Cabinet, Garment Storage locker.
23. Portable Fire Extinguishers (CO_2 /Dry Powder type) in lab and AHU room.
24. Water softener and water storage tanks for HVAC system and steam boiler.
25. Fire Suppression system, and detection system.
26. Gas bases Flooding System
27. Making suitable MS platform and structure with shaded area for accommodating chiller unit, Electrical power panels, AHU with protection arrangement outside the building as per direction of the E-in-C.

Additional Conditions

1. The Tender Drawings are given in the Tender Documents for the purpose of understanding the layout and work requirements by the bidders. However, the bidders are advised to visit the site and assess the site conditions and work requirements. The bidders may also seek clarification on queries they may have by making written submission to the Employer. The Employer reserves the right to do minor changes in the given layout plan and scope, without any additional cost.

2. Site preparatory works including dismantling/demolition of existing walls, clearance of malba, making opening in walls and any other ancillary works required to complete the works. The contractor shall take all precautions not to damage any part of the existing building and the structure. All the opening and dismantling works required for the execution of the works shall be repaired by the contractor in good condition at no extra cost.
3. Testing and commissioning of all the equipment/s, items, systems, and services supplied and installed in the Laboratory Facility and Validation of the Sterilization room & Clean room 1000, 10,000 as per the Sterilisation room & Clean room Class 1000 and Class 10,000 Certification Guidelines by third party in the presence of representative/s of Employer and submission of compiled report without any extra cost will be get done by agency.
4. Preparation and submission of 3 sets of 'AS BUILT DRAWINGS' and "OPERATION& MAINTENANCE MANUAL AND INSTRUCTIONS" for the complete installation shall be provided by the agency before final bill.
5. Providing training to the Employer's staff on operation, servicing and maintenance of all engineering installations and handling of emergencies due to fire or engineering system failures.
6. There is an existing DG set available and the backup power supply to the proposed laboratories shall be provided through the same. The required power connection including providing cabling from the DG set panel to the new LT panel shall be in the Bidders scope though the items will be paid as per actual.

Special Condition for HVAC Work :-

(1) This specification covers supply and delivery of materials at site, all preparatory work assembly and installation, commissioning putting into operation of HVAC system & final testing & commissioning at site.

(2) The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (Int.) 2013, Part-II (Ext.) 1994, HVAC Work 2017, as amended upto date, relevant I.E. Rules, BIS/IEC and as per directions of Engineer-in- Charge. These additional specifications/conditions are to be read in conjunction with above and in case of variations; specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these additional specification and conditions, as the same are to be read along with schedule of quantities for the work.

(3) All equipment's shall be guaranteed for a period of 12 months from the date of taking over the installation by the department against unsatisfactory performance and / or breakdown due to defective design, workmanship, or material. The equipment or component, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost to the satisfaction of the Engineer-in- Charge. In case it is felt by the department that undue delay is being caused by the contactor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-in-Charge in this regard shall be final & binding on the contractor.

3.1 The tenderer shall guarantee among other things, the following:

3.2 Quality, strength and performance of the material used as per manufacturer's standards.

3.3 Safe mechanical and electrical stress on all part under all specified conditions of operation.

3.4 Satisfactory operation during the maintenance period.

4. **Chiller** air conditioning work shall only be got executed only by the manufacturer or their authorized dealers/ representative.

5. **Operation and Maintenance**

5.1 **The maintenance of entire E&M systems** during one year warranty period & subsequent five years shall be as per **Annexure - 4** of the NIT and as per CPWD General Specifications for Electrical Works as amended up to date and as per Manufacturer Standard. A separate **supplementary agreement** shall be made with the successful tenderer for sub head “AMC *i.e.* Routine, Preventive & Breakdown Maintenance (for 5 years after one year guarantee period)” of schedule of work. The payment of maintenance may be made half yearly after the end of each six months.

5.2 Any fault pertaining to any E&M system shall be attended within 4 hours of reporting. Beyond 4 hours of non-attendance, penalty shall be imposed @Rs.200/- per every hour subject to maximum of 10% of the tendered amount (AMC part). Persistent non-attendance beyond 08 hours may be got done by the Institute at the risk and cost of the contractor. Decision of Engineer-in-charge in this regard shall be final and binding upon the contractor.

COMPREHENSIVE MAINTENANCE

MAINTENANCE SCHEDULE **Annexure -4**

A. This section covers the maintenance schedule and various recovery rates for not complying maintenance schedule during the contract period. LOGBOOK, STATIONERIES, ETC. FOR THE ENTIRE MAINTENANCE PERIOD SHALL BE SUPPLIED BY THE CONTRACTOR.

The maintenance provided during the contract period shall include but not limited to all equipment's, labour part and emergency calls providing and site response within 24 hours. However, during the maintenance period, the material including consumable materials shall be arranged by the contractor, if any, replacement is warranted.

1. Free replacing of defective / worn out parts with new or repaired parts for compressor, thermostat, cut outs, sensors, measuring meters, and other electrical components.
2. Free repairing of equipment like motors, pumps, at site / service station as the case may be
3. Free replacement of compressor oil and charging of refrigerant, AHU belts as and when required for proper functioning of the units
4. Free cleaning of condenser as and when required, repairing of any leakage, leak testing, etc. as required.
5. Repairing and replacement of defective components of VFDs

Chiller	Monthly inspection and service	1. Check refrigerant level, leak test with electronic leak detector. If abnormal, trace and rectify as necessary, inform department in writing on the rectification. 2. Inspect level and condition of oil. If abnormal, trace fault and rectify as necessary. Inform department in writing on the rectification. 3. Check the liquid line sight glasses for proper flow 4. Check all operating pressure and temperature. 5. Inspect and adjust, if required, all operating safety controls. 6. Check capacity control, adjust if necessary. 7. Lubricate vane / linkage / bearings. 8. Visually inspect machine and associated components and listen for unusual sound or noise for evidence of unusual conditions. 9. Check lock bolts and chiller spring mount. 10. Review daily operating log maintained by department's operating personnel. 11. Providing written report to department, outlining services carried out, adjustment made, rectification carried out and if the deficiency is of a major nature, arrange with department for shutdown to rectify equipment.
Chiller	Annual inspection	1. Perform all functions for monthly check. 2. Check all flanges for tightness. 3. Change oil in oil sump 4. Replace filter. 5. Check oil temperature control. 6. Check motor terminals. 7. Check connections in starter. Please note that oil filter gasket replacement shall deem to be included in the contract. 1. Check motor earthing, megger motor and connection wiring on each leg 2. Check motor temperature cut-out, tighten motor terminals. 3. Check starter contacts, arc shield, transformer. 4. Check dashpot oil, clean dashpot and replace oil when necessary. 5. Test and calibrate overload setting. 6. Inspect, calibrate and adjust to original specifications all gauges,

		safety and operating controls including low temperature and high-pressure cut-out, oil pressure switch, load limit relay and electrical interlocks. 7. For air cooled condenser coils, dust should not be allowed to accommodate on the condenser coil surfaces. Cleaning shall be as often as necessary [approximately every three months] to keep coil clean. Exercise care when cleaning the coil, so that the coil fins are not damaged. Under no circumstances this unit be cleaned with acid based cleaner.
Water pumps	Monthly inspection	1. Inspect all water pumps. 2. Check all seals, glands and pipelines for leaks and rectify as necessary. 3. Re-pack and adjust pump glands as necessary. 4. Check all pump bearings and lubricate with oil or grease as necessary. 5. Check the alignment and condition of all rubber couplings between pumps and drive motors and rectify as necessary. 6. Check all bolts and nuts for tightness and tighten as necessary
Water pumps	Annual inspection	1. Perform all functions for monthly check. 2. Check motor earthing, megger motor and connection wiring on each leg. 3. Tighten motor terminals. 4. Check starter contacts. 5. Test and calibrate overload setting.
Expansion tank/ Air purging valve	Annual inspection	1. Inspect expansion tank, drain, clean, and flush out tanks as necessary. 2. Checking of air purging valves for proper operation
Air handling units and fan coil units	Monthly inspection	1. Inspect all air handling and fan coil units. 2. Check all air filters and clean or change filters as necessary. 3. Check all water coils, seals and pipelines for leaks and rectify as necessary. 4. Check and re-calibrate modulating valves and controls. Adjust and rectify as necessary to ensure compliance to the original specifications. 5. Purge air from all water coils 6. Check all fan bearings and lubricate with grease as necessary. 7. Check the tension of all belt drives and adjust as necessary. 8. Check and clean all the condensate pans, trays and drain. 9. Check, measure and re-calibrate all sensors if necessary. 10. Check, clean and service smoke detectors. Carry out a system test to ensure that the smoke detectors will trip the AHUs. 11. Check spring vibration isolators for abnormal vibration. Rectify if necessary. 12. Coil to be cleaned by [a] spray of high-pressure clean water [not exceeding 30 psi] [b] with chemical spray if necessary
Air distribution system	Monthly and Annual inspection	1. Check operation of all modulating and fixed dampers controlling air flow through unit. Lubricate all damper bearings and linkages as necessary. 2. Carry out space temperature checks on air-conditioned areas with thermos hydrograph. Balance air flow as necessary to compliance with requirements of original specifications. These checks include the calibration of sensors, thermostat etc. 3. Check noise level of discharged air from diffusers
Ventilation	Monthly check	1. Check adjusts as necessary the air flow of all fans are in

	and Annual inspection	compliance with the original specifications 2. Check the tension of all belt drives and adjust as necessary. 3. Check and lubricate all fan bearings. 4. Tighten motor terminals. 5. Check starter contacts. 6. Test and calibrate overload settings. 7. A system check shall be carried out for all Mechanical Ventilation [MV], Pressurization and Exhaust system to verify the performance of the systems
Switch board	Six-monthly and Annual inspection	1. Clean and adjust all switchgear, contactors, relays and associated electrical equipment at intervals not exceeding six months. 2. Check and prove operation of thermal overload and protection devices. 3. Check and ensure tightness of all equipment fastenings and cable terminations within switch boards. 4. Vacuum clean all switch board cubicles
Piping system	Monthly and Annual inspection	1. Check all piping systems for leaks and repair these where they have occurred. 2. Check for damage & deterioration of insulation or sheathings. Rectify as necessary.
BMS System	Daily, monthly	1. Proper cleaning and removal of any dust deposit 2. Checking for any loose connection, overheating, etc. 3. Proper functioning of the system in auto mode
CCTV, Access Control	Daily	1. Proper functioning of the system and backup system
Fire Detection, Fire fighting and Suppression system	Daily	1. Daily checking of the system for proper functioning of Fire detection system 2. Checking of pressure in the suppression system and checking its healthiness on daily basis
All valves, sensors, metering systems, controls	Weekly, monthly	1. Visual inspection for healthiness and their functioning

B. RECOVERY RATES FOR NON-COMPLIANCES DURING CAMC PERIOD

The various amounts as mentioned below are the recovery rates to be deducted from the bills payable to the contractor. Activities of maintenance shall be recorded in the maintenance register and to be verified by E-in-C or his representative.

Sr. No.	Description of non-compliance	:	Amount to be recovered (Rs.)
1	Not cleaning of condenser unit once in 3 months during the contract period (All necessary arrangements for conducting de-scaling / cleaning to be done by the contractor, however, specific period of shut down to facilitated by the department)	:	Rs. 10,000.00 per each missing for all units (to be done in presence of Engineer-in-charge or his representative and to be recorded in maintenance register)
2	Not servicing and cleaning of AHU coils, cleaning of	:	Rs.3000.00 per AHU irrespective

	filters at leasttwo times during the contract period		of size
3	Not repairing / replacing of any other spare parts within 7 days after occurrence	:	To be got done at the risk and cost of the contractor and amount actually spent to be recovered.
4	Non-functioning of any system like BMS, Fire, CCTV & Access Control, HVAC, Electrical Power System	:	Rs.2000.00 per day from 3 days after the occurrence
5	Absence of operator / manpower	:	Actual rate of daily wages as per central notification plus labour cess plus profit @15% per day per staff.

C. CONSUMMABLES TO BE SUPPLIED BY THE INSTITUTE:

1. Air Filters of AHU / FCU, HEPA Filters which are required to be replaced.
2. Compressor oil when warranted for replacement.

Technical Documents

Contents

Table-1 Air handling.

1. Proposal

Indian Institute of Technology Delhi (IITD) is planning to set up a clean room facility for Mpragati Research projects at its campus at New Delhi at ISTE building. These clean rooms will be
constructed by dismantling the entire existing partitions and doors. These clean rooms will house various facilities required for research including general purpose. The total projected electrical load is approx. 200 KVA, This electrical supply will be received by one main LT panel located at suitable place on ground floor. Suitable rated UPS as indicated in BOQ to various electrical equipment loads shall be provided.

2.Design layout

The layout of the clean room has been optimized based on the requirements for various functional areas and available space. As a thumb rule, the ratio of clean room space to utilities space is about 50:50 sq. ft. for clean rooms. There will be air curtains, one at the entrance to the lab; one change room/gowning room.

Clean room 1 &2 (Room No. 3 & 4): The rooms will have total area of Approx. 500 sq. ft. with required height (around 8.5 feet). The rooms shall be designed to operate as Class 1000 and class 10000 Clean Room. This room will have approx. 35 air changes per hour (ACPH).

3. Design considerations

1.1.Air-handling Unit:-

Based on design layout given in area, height and thus the volume and ACPH of each clean room, the total flow rate will be calculated. Providing fresh air compensation for exhaust and a small margin, the AHU flow rate for each clean room is proposed. The AHU will have a fresh air
intake damper (also fire damper) at the return air side and the balancing damper at the supply. (Delivery air side). System should be controlled by BMS system and temperature along with quantity of conditioned air shall have to be fully automated as per requirement / set value.

1.2. HEPA filters:

The HEPA filter of 99.97% efficiency are designed to be 2' x 2 (refer BOQ) standard size HEPA filters selected for the functional are based on the extent of the area to be covered the clean room ceiling which is in turn is governed by clean room standards.

1.3. Air-conditioning: Drawing of room enclosed

Cooling of the clean rooms as well as non-clean rooms and maintaining a temperature of 22. 2° C (with 44°C ambient) depends upon the area (volume) of the clean room and the heat transfer from outside the clean room through the clean room walls and also die to heat transfer in the supply / return air ducts and AHU body. Further cooling is required to compensate for the heat dissipated in the clean room such as equipment, heater (for humidity control) personnel (at the rate of 0.3 KW per person) and loss conditioned air due to exhaust. Air Conditioning required for the clean rooms has been given only for the reference purpose.

The clean room temperature (22+2°C), relative humidity level, various heat dissipation loads total cooling required, and the number of condenser units required for each room. All condenser
units are chosen to be of air-cooled type (Total = 90 TR as per chiller capacity) to be installed just outside the clean
room complex. The air-cooled condenser units are reliable, efficient and simple to maintain as opposed to huge water-cooled compressor which require cooling towers and water pumps which are difficult to maintain in long run.

1.4 Clean room walls

The clean room complex has external brick walls and also glass aluminum window which serve
as shield for the internal clean room wall. The bottom of the ceiling has to be coated with antifungal paint from inside for protection of the clean room ceiling. The existing floor is covered with floor tiles which are reasonably clean; however, the surface will have to be prepared for the coating of Epoxy on the clean room floors. Clean room walls are proposed to be of powder coated 100 mm thick GI panel, each panel having double walls (1 mm thick GI sheets) with fire resistant Poly Urethane Foam in between. The ceiling will be walkable type with powder coated double wall GI panel with fire resistant Poly Urethane Foam (PUF) in between. The powder coating is 60–80-micronmeter thick.
The clean room ceiling will be supported from the main ceiling with sufficiently loadbearing fasteners and hangers. All cleanrooms will have 900mm(W)x2150mm(H)doors for personnel entry, and adoubleleaf1200mm(W)x 2150mm(H)doors for equipment loading. There turn

air for all clean rooms will be in there turn air riser integrated in the riser wall panel.

1.5. Clean room floor: as per BOQ

1.6. Change room, Air curtain, Pass Boxes

The change room (governing area) will be assembled by using the powder coated double walled GI panel. There will be an air curtain (fan filter, 3u unit, 4 X 2 ft. for main entrance to visitor corridors). Also, each clean room (rooms 3 and 4) should have a set of 304SS garment cabinets and storage furniture for storage of clean room clothing, shoes, head cover, gloves etc. further, between room 3 & 4, one dynamic pass box will be provided for quick exchange of items / wafers required in the clean room. Dynamic pass box, SS304 600 X 600 X 600 mm with all necessary accessories for clean rooms.

WORK DETAILS:

4.1. Civil Work Refer to BOQ

4.2. Electrical work : Refer to BOQ

4.3 Air conditioning work : Refer to BOQ

4.3. Clean room body: Refer to BOQ.

Modern clean rooms are constructed using double layered panels, varying from 50mm to 100 mm thick: panel sheet is fabricated from powder coated GI sheet, thickness in the range 1mm to 0.5 mm: the GI sheets are separated by the fire resistant and insulating foam material. The ceiling is usually of 50 mm thick powder coated GI panel, usually walk able, suspended from main roof, using load bearing fasteners and hangers.

1.1.1. Clean room wall panels, 100 mm thick, 0.8 mm powder coated G.I. sheets, with fire resistant PUF foam size: 1200mm (W) x 2500mm (H)

1.1.2. Clean room ceiling panel, 50mm thick, 1mm powder coated G.I. sheets, with fire resistant PUF foam size: 1200mm (W) x 2500mm (L)

1.1.3 1.1.3. Clean room compatible double-glazed windows size: 900mm X 750mm (Riser panel area: As required)6 Nos. (To be fitted in clean walls)

1.1.4. Clean room compatible flush doors (to be fitted on clean room walls)

1.1.5. Aluminum coving with aluminum backing

1.1.6. Return air riser panel (integrated in wall panels)

1.1.7. Epoxy flooring

1.1.8. Wall/ ceiling cutouts (for doors, windows, filters, lights & grill, etc.)

1.4. Air handling and ducting As per BOQ

1.4.1. Air handling: the air handling requirement is based on the air flow required in the clean room which in turn is dependent on the Class 1000 or 10,000 as per requirement shown in the drawing, volume of the room, exhaust etc. based on this, air flow requirements have been calculated and categorized. Body of all AHUs will be of powder coated GI with an mm thick internal PUF insulation.

1.4.2. Ducting:

All ducting will be fabricated out of high zinc GI sheets, 20 gauge for main ducts and 22 gauge for branch ducts. All ducts are supported from the ceiling and terminated (for joints) in flanges with proper insulation as required.

Since the floor to ceiling height is limited to 9ft.6inches the concept of supply air plenum is proposed.

1.5. Air filtration

Prefiltration:

These are located in the AHU section; generally, 15 micron type at the return air / fresh air intake region before the heat exchanger coils and 3 micron type at the delivery end after the AHU blower but before the balancing damper. The total no. of prefilters (2x2' area each) depends upon the AHU flow rate, and are included in the cost of AHU,

1.1.1. HEPA: high efficiency particulate air type filter has 99.97% efficiency for 0.3 micron particulates and above; these terminal HEPA filter form the important component of the clean room structure. These filters are fabricated (with imported HEPA materials) in various sizes and flow rates. In this proposal a standard design of 2'x2' size. Terminal HEPA filter box will be MS Powder coated perforated plate:

1.1.2. Fire damper with blades of formed 1:6 mm galvanized steel, Axis of plated solid steel stubs, bearing of permanently sealed bronze oil lubricated, linkage of plated steel on blade type actuator of 74°C ŲL rated fusible link of 74°C electro thermal link, sleeves of 18 GA galvanized steel 400/485 mm, side seal of metallic compression type.

1.6. Air conditioning

1.1.1. Cooling of the clean room as well as non-clean room labs maintaining a temperature of 22+2°C (with 44°C ambient) depends upon the area (volume) of the clean room and heat transfer from outside the clean room through clean room walls and also due to heat transfer in the supply/ return air ducts and AHU body. Further, cooling is required to compensate for the heat dissipated in then clean room such as equipment, heater (for humidity control), personnel (at the rate of 0.3 KW per person) and loss of conditioned air due to exhaust.

Air conditioning required for the clean room has been calculated based on HVAC calculations.

Condensing unit:

Air cooled condensing unit of absolute capacity comprising of scroll compressor complete with refrigerant piping (liquid and suction) with nitrile rubber insulation of 19 mm thick or as per OEM recommendation, painted M.S. stand for mounting outdoor condenser units, with first charge of refrigerant, Oil and necessary controls of following absolute capacity.

1.7. Miscellaneous components: As per BOQ

Thermostat with timer, Humidistat, Aluminum powder coated T-section, Fastener & suspender (1/2"threadedGI) false ceiling panel, Electrical panel for air-handling unit with VFDs (for blower) And PLC for control of condenser units, heaters. temperature& humidity, Cu. Piping

with installation, leak detection & insulation, Lighting, High efficiency, Power cables and PowerPoints etc.

1.8. Building Management System (BMS)

Colour LCD display unit for displaying all parameters including AHU No., room name, parameter to
be displayed like temp., RH, pressure, set points, fire system for each and indication of normal operation and to level of alarms with sensor and cables.

1.9. Addressable Fire Detection System: - Single panel, cross zone detection, auto manual operation;

1.10. Access control system and internet:

1.10.1. Biometric lock: Combination of biometric. card reader and numerical keypad, user capacity upto 100.
1.10.2. LAN Wiring with outlet sockets, D-Link Wi-Fi access points and D-Link Wi-Fi Ethernet cara64 kbps and cabling
1.11 Validation and commissioning: Validation by third party as per relevant standards
Wet benches:
a) Wet benches for Lab Rooms
Specifications
Work surface: 1800mm (L) x 700mm (W) x at height of 700mm from the floor
Chemical benches for weak acid/ bases/ organics:
Overall size: 1850mm (L) x 850mm (W) × 2300mm (H)
Tank: for drain water collection and complete drain outlet
Material: SS304,20/22 gauge
Sink for wash and rinse: 300mm (L) x 200mm (W) x 150mm (H)
Sink for organic disposal: 200mm (L) x 200mm (W) x 150mm (H)
Exhaust fan: 500 CFM with single phase motor, FRP body complete with PP pipe installation and testing
Exhaust flow: 500 CFM achieved with 150mm PP pipe at the top

8. **Chemical fume exhaust:** Chemical bench exhaust fumes is to be treated (scrubbed) with water shower appropriately in the exhaust line (Room 2).

10.**Drainage and freshwater system:**
Drainage and freshwater system is to be fitted in various wet benches as per requirement described for each clean room (refer Tender Drawing) and other rooms

Table 1
To be submitted by the contractor before installation work: Air handling

Room function	Area sqft(Approx)	Height	volume	class	Air changes per hour	Room pressure pascal	Flow rate CFM	Fresh air flow rate CFM	HEPA % OF CEILING	No. of HEPA filters 2'x2'	AHU CFM
Room No 1											
Room no 2											

FORM OF WATER PROOFING WORKS GUARANTEE BOND ON STAMP PAPER

This agreement made this……..day of two thousand… ..... Between M/s……(hereinafter called the Guarantor of the one part) and the BOG IIT Delhi (hereinafter called the Govt. of the other part).

Whereas this agreement is supplementary to the contract (hereinafter called the Contract) dated…….. made between the Guarantor of the one part and Govt. of the other part, whereby the contractor inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

And whereas the Guarantor agreed to give a guarantee to the effect that the said structure will remain waterproof for **Five years** to be reckoned from the date after the maintenance period prescribed in the contract expires.

During this period of guarantee the Guarantor shall make good all defects and for that matter, shall replace at his risk and cost such members as may be damaged by water and in case of any other defect being found he shall render the building waterproof at his cost to the satisfaction of the Engineer-in- Charge and shall commence the works of such rectification within seven days from the date of issuing notice from the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk and in the latter case the decision of the Engineer-in-charge as to the cost, recoverable from the Guarantor shall be final and binding.

That if the Guarantor fails to execute the waterproofing or commits breaches hereunder then the Guarantor will indemnify principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the Guarantor in performance and observance of this supplemental agreement. As to the amount of loss and/or damage and/or cost incurred by the Government the decision of the Engineer-in-charge will be final and binding on the parties.

In witness whereof of these presents have been executed by the obligor… ..... And by……. For and on behalf of the BOG IIT Delhi on the day, month, and year first above written.

SIGNED, SEALED, and delivered by
OBLIGOR in presence of- 1.
2.

SIGNED for and on behalf of BOG IIT Delhi by..... in the presence of-
1.
2.

Blanks to be filled by ***Contractor/EE(CD-III)***

LIST OF APPROVED MAKES FOR CIVIL &ELECTRICAL WORKS

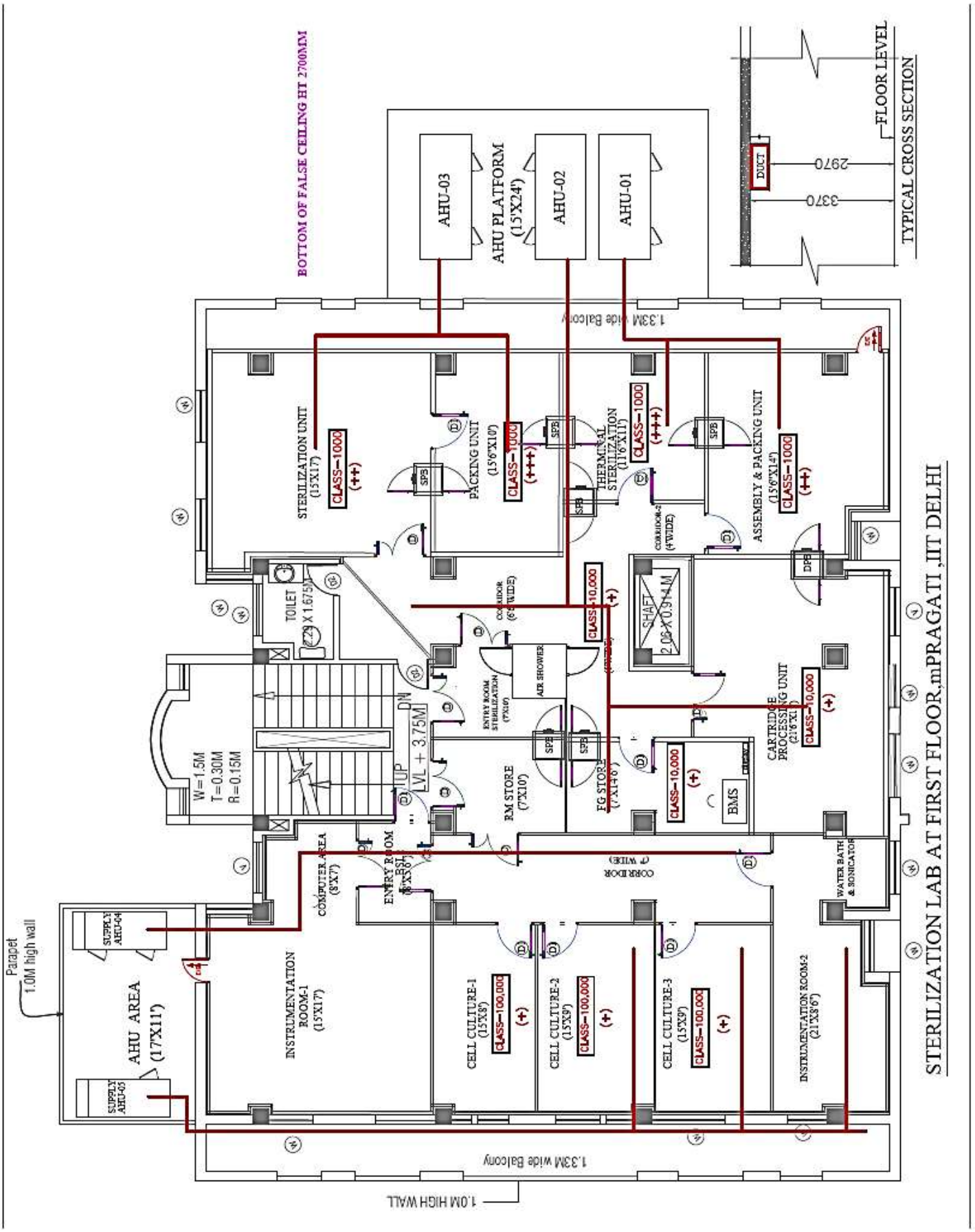
A Civil Items

S. No.	Description	Approved Makes
1	EWC seat covers	HINDWARE/ PARRYWARE/ CERA/ KEROVIT
2	C.P brass fittings/ Accessories	JAQUAR/ MARC/ KOHLAR /KEROVIT
3	PVC Seat Cover	PRAYAG/ POLYTUF/SHAKTI/ PEARL
4	PVC Fittings/ Accessories	PRAYAG/ PRIMA/SHAKTI/ PEARL
5	Cement (Grey) OPC/ PPC Grade-43	ACC/ L&T/J.K/ BIRLA/ULTRA TECH/ VIKRAM
6	Cement (White)	J.K/ BIRLA
7	Reinforcement Steel	PRIMARY MANUFACTURERS APPROVED BY MINISTRY OF STEEL/ SECONDARY MANUFACTURERS HAVING VALID BIS LICENSE (to be as per latest BIS provisions)
8	Structural Steel	PRIMARY MANUFACTURERS APPROVED BY MINISTRY OF STEEL/ SECONDARY MANUFACTURERS HAVING VALID BIS LICENSE (to be as per latest BIS provisions)
9	Stainless Steel (Grade 304)	JINDAL/ SAIL/ SALEM
10	Bricks	COMMERCIALLY AVAILABLE OR REQUIRED STRENGTH
11	Aluminum Sections	HINDALCO/ JINDAL/ MAHAVIR
12	Flush doors	CENTURY/ MERINO/ DURO BOARD/ GREEN
13	Laminates	GREENLAM/ DURO/ ARCHID/ MERINO/ CENTURY
14	Glass	SAINT GOBAIN/ MODI FLOAT/ ASAHI FLOAT
15	Ceramic Glazed tiles/ Border tiles	1ST QUALITY KAJARIA/ NITCO/ JOHNSON/ ORIENT/ SOMANY
16	Vitrified Tiles	JOHNSON/ KAJARIA/ ORIENT/ SOMANY
17	Interlocking Precast paver blocks/ Kerb Stone	HINDUSTAN TILES/ SWASTIK/ DALAL
18	Stainless Steel Hinges	JOLLY/ GARG/ AMIT/ ASJ/ SUPREME
19	Stainless Steel Nuts/ Bolts/ Screws	KUNDAN/ PUJA/ ATUL/ GKW
20	Paint/ primer/ oil bound distemper/ Acrylic paint/ plastic paint	1ST QUALITY PAINTS OF ASIAN/ BERGER/ NEROLAC/ SHALIMAR /DULUX
21	Water Proof Cement Paint/ Exterior Paint	1ST QUALITY PAINTS OF ASIAN PAINTS/ BERGER/ NEROLAC/ SHALIMAR /DULUX
22	Sanitaryware (Vitreous China) (European Seats, Urinals, Wash Basins, etc.)	HINDWARE/ PARRYWARE/ CERA/ KEROVIT
23	G.I Pipes	TATA / JINDAL(HISSAR)/ BHUSHAN/ APL APPOLO
24	G.I Fittings	UNIK/ ZOLOTO/ AM
25	Stainless Steel Sink	NEELKANTH/ JAINA/ KINGSTON (COBRA)
26	Commercial Board/ PLY	MERINO/ DURO/ GREEN/ CENTURY/ KIT (SWASTIK)
27	CI Pipes/ Fittings	RIF/ NECO/ BENGAL IRON WORKS/ BC/ SKF
28	CI Pipes "Class LA"	NICO/ KESORAM/ ELECTRO STEEL/ KAPILANSH
29	Floor Spring	DORMA/ GODREJ/ HAFELE/ GEZE/ OZONE
30	Door Closer	SANDHU/ HARDWIN/DORMA/ GODREJ/ HAFELE/ GEZE/ OZONE
31	Mirror	ATUL/ MOIGUARD / SAINT GOBAIN/ AASHI
32	Vertical Blinds	VISTA/ MAC/ MARVEL DÉCOR/ SAINT GOBAIN/DECK DÉCOR
33	False Ceiling	ARMSTRONG/ SAINT GOBAIN/ META WORTH
34	Water proofing compound	SIKA/ FOSROC/ PIDILITE/ ASIAN/BASF/CICO
35	Particle Board	NOVA PAN/ BHUTAN BOARD/ ECO BOARD
36	Adhesive	FEVICOL/ VAMICOL/ DUNLOP/ VAM ORGANIC / kajaria

37	Tile Adhesive	PIDILITE/ FERROUSCRETE/ BALLENDURA/ CICO
38	Wall Putty	BIRLA /JK/ SARA
39	Epoxy Grout	BALLENDURA / KERAKOLL/ FERROUSCRETE
40	PVC Water storage tank (ISI marked)	SINTEX/ UNI PLAST/ POLYWELL
41	PVC insulated Water storage tank Heavy Duty 4/5 layer	SINTEX/ UNIPLAST/ POLYWELL/ EURO
42	Brass Ball Valve/ Gate Valve/ Float Valve / Butterfly valve	ZOLOTO/ AM/ LEADER/ SANT
43	Aluminum Door fittings	CLASSIC/ EVEREST/ ARGENT
44	Brass Bib/ Stop cock	AGI/ ELITE/ SHAKTI/ SANT/ LEADER/ PRIMA
45	Thermoplastic paint	CBM/ CMS/ S.N. INDUSTRIES
46	Plaster of Paris Putty	ADHASHREE/ SHREE RAM/ J.K/ BIRLA
47	RCC Pipe	LAKSHMI/ SOOD & SOOD/ JAIN &Co./ DIWAN SPUN PIPES
48	PVC Pipe	PRAKASH/ PRINCE/ SUPREME
49	Sandwich Roof Panel (Puff Panel)	KAKTUS/ ZEP/ E- PACK/ LLOYED
50	WPC Board and MPC Board	FLORESTA, ECOSTE, RAJ SHREE
51	WPC Door Frame	FLORESTA, ECOSTE, RAJ SHREE
52	Self- Closing Hinges	HETTICH, KITCH, PLUM
53	Poly Carbonate Sheet	GE LEXAN/ POLYGAL/TUFLITE
54	ACP Panel	ALSTRONG /ALUCOBOND / EUROBOND/ ALUDECOR
55	Acoustic Wooden/Fabric Paneling	ARMSTRONG / ANUTONE/ CREDENCE / TOPAKUSTIC
56	Polyvinyl Flooring	ARMSTRONG / POLY FLOR/ TARKETT
57	Glow Stud, Solar Power Stud	ROAD STAR/ 3M/ DARK EYE/ EVERY DENNISON
58	Laminate Wooden Flooring	VISTA/ ACTION TESA/ ARMSTRONG/ PERGO
59	Sun Control Film	3M/ GARWARE/ SAINT GOBAIN
60	Insulation (Mineral / rock wool)	UP TIWAGA LTD / ROCKWOOL IND./ F.G.P.
61	Fire Door	NAVAIR/ SHAKTI/ RADIANT/SIGNUM/PROMAT
62	Flush door Shutters of various thickness	MERINO/ DURO/ GREEN/ CENTURY/ KIT (SWASTIK)
63	Open cell false ceiling	ARMSTRONG /CREDENCE /HUNTER DOUGLAS
64	Calcium silicate false ceiling	AEROLITE, RAMCO, HILUX, USG BORAL
65	Gypsum Board	GYPROC BY SAINT GOBAIN, USG BORAL, ARMSTRONG
66	Fibre Cement Board	EVEREST/ USG BORAL / VISAKA
67	CPVC Pipe Fitting & Solvent	SUPREME/ ASTRAL/ ASHIRWAD / PRINCE / PRAKASH
68	UPVC Pipes & Fittings	SFMC / SUPREME/ FINOLEX
69	UPVC Window	FENESTA / REHAU/ ENCRAFT/ (NCL Wintech)/ SAINT GOBAIN
70	Friction Stay Hinges	EARL- BIHARI/ EBCO/HETTICH
71	M.S Pipes	JINDAL/ APPOLO/ SWASTIK / TATA / SURYA
72	Gypsum Plaster	FERROUS CRETE (FERRO-500)/ GYPROC (ELITE-100)/ KERAKOL (K-100)
73	GRC Wall Tile / Jali	UNISTONE/ DALAL/ SWASTIK ALWAR / ULTRA
74	HDMR Board	CENTURY/ GREEN/ ACTION TESSA
75	High Pressure Laminate (HPL)	CENTURY/ GREEN / MERINO/TRESPA/ FUNDERMAX
76	Anchor Fastener (Mechanical/ Chemical)	HILTI/ MUNGO/CANON/ FISCHER/ WUERTH
77	Cupboard Lock	PLAZA/ GODREJ/ HETTICH/ HAFLEY
78	Rust remover / Rust converting primer	FOSROC/SIKA/BASF/PIDILITE

	/paint	
79	polymer based zinc rich primer	FOSROC/SIKA/BASF/PIDILITE
80	anticorrosive paint	FOSROC/SIKA/BASF/PIDILITE
81	Concrete penetrating HI-TECH Corrosion inhibitor	FOSROC/SIKA/BASF/PIDILITE
82	Thixotropic Epoxy repair mortar	FOSROC/SIKA/BASF/PIDILITE
83	Latex / SBR Polymer Compound	FOSROC/SIKA/BASF/PIDILITE
84	Low viscous epoxy resin grout	FOSROC/SIKA/BASF/PIDILITE
85	Epoxy resin for Concrete bond coat	FOSROC/SIKA/BASF/PIDILITE
86	Pre-batched non-shrink polymer modified mortar	FOSROC/SIKA/BASF/PIDILITE
87	Pre-batched Pre-Mixed Non- Shrink Micro Concrete	FOSROC/SIKA/BASF/PIDILITE
88	Pre-batched Pre Mixed Non- metallic composite fiber wrapping system	FOSROC/SIKA/BASF/PIDILITE
89	Epoxy for rebar/shear anchor	FOSROC/SIKA/BASF/HILTI
90	Modular kitchen basket and accessories (SS-304 Grade)	HETTICH/ KITCH/ PLUM / PECOCK
91	Manhole cover /Grating	KK MANHOLE / DALAL / SWASTIK / HINDUSTAN
92	laminate wooden flooring	VISTA / ARMSTRONG / ACTION TESSA
93	Engineered wood Flooring	PERGO / JUNKERS / BOEN / SQUARFOOT
94	SS Pipe (304 grade) FOR WATER SUPLY	JINDAL / TATA / ALFA PRESS / VIEGA
95	Epoxy flooring	FOSROC / SIKA / BASF
	FURNITURE	
96	Workstation	GODREJ INTERIO/ HAWORTH / STEEL CASE/ WIPRO/ FEATHERLITE/ HERMAN MLLER
97	Executive Table/ other table	GODREJ INTERIO/ HAWORTH / STEEL CASE/ WIPRO/ FEATHERLITE/ HERMAN MLLER
98	Chair / Audi Chair	GODREJ INTERIO/ HAWORTH / STEEL CASE/ WIPRO/ FEATHERLITE/ HERMAN MLLER
99	Lab Furniture's	KEWANEE / WALDNER / GODREJ/ WIPRO / FEATHERLITE
100	Hostel beds and cots	ZUARI / EVOK / GODREJ / WIPRO / FEATHERLITE
101	Hospital beds	HUNTLEY / STRIKER /GODREJ /WIPRO /FEATHERLITE
	ITEMS FOR CLEAN ROOM / BSL / SRTERLIZATION / SPECIAL LAB FURNITURE	
102	Clean room Wall, Ceiling panel, coving	IClean/ Nicomac/ Clestra/ Channel Systems
103	Clean room Garment cabinet, shoe rack	IClean/ Kleainzaids/ Channel Systems
104	Cleanroom Doors, Return air riser	IClean/ Nicomac/ Clestra/ Channel Systems
105	Pass box, Air Shower	IClean/ Kleainzaids / Channel Systems
106	Utility Gas piping valves and Fittings (for clean room)	Shavo Technologies / Excel Gas/ GDS STARLING / Broen / Ratnamani
107	Utility Gas Pipe SS 304 Seamless (for clean room)	Excel Gas / Scoda / Venus / Dockweller
108	SS 316 L Electo polished tubing	Dockweller / Valex / Sandvik / Ratnamani
109	Chilled water pump	Grundfos/ KBL / Beacon / Wilo
110	Insulation for pipe and valves	Armaflex/ K Flex/ A flex/ Supreme
111	Auto Air vent, Y strainer	Anergy / Zoloto / Lehry
112	3 way modulating valve, Flow switch	Siemens / Honeywell

113	Humidistat, Thermostat, DP Sensor	Siemens / Honeywell
114	Magnehalic gauge	Dwyer / Sensocon / Micro precision
115	Temperature Pressure gauge	H Guru / Wika / Febig
116	Pre-Insulated Ducting	RR Engineers /Asawa / Paul
117	Thermal Insulation for GI ducting	Supreme/K. Flex/A Flex/Armaflex
118	HEPA Filters, HEPA terminal, BIBO unit	AAF/Camfil/ Thermadyne / Mechmaark
119	Building Management System	Honeybell / Siemens / Johnson
120	Biometric Access System	Siemens / Vantage / ExcelLex
121	Door Interlock	Honeywell/Vantage / Drishti / Ozone
122	Thyristor Heater	KEPL/Intercool/ Rapid Cool
123	Compressed Dry Air (Oil free type)	Atlas Copco / Chicago Pneumatics Ingersol Rand / Elgi
124	Antivibration mounting	Resistoflex/ Gerb / polybond
125	Variable Frequency Drive	ABB / Danfos / Fuji
126	Lab Casework	Kewaunee/GD-Waldner/Godrej/Citizen/ Lab india / lab guard
127	Fume Hoods	Kewaunee/GD-Waldner/Godrej/Citizen/ Lab india / lab guard
128	Utility Valves	Broen/Water Saver/FAR
129	VAV Controls	TEL
130	Spot Extractor	Fumex/ Alsident
131	Exaust blower	Colasit / Plastifier/ Seat
132	Acid storage	Kewaunee/ Justrite/Asecos
133	Solvent storage (FM)	Kewaunee/ Justrite/Asecos
134	Chemical storages	Kewaunee/GD-Waldner/Godrej/Citizen
135	Document Storages	Kewaunee/GD-Waldner/Godrej/Citizen/ Lab india / lab guard
136	Bio safety cabinet	Kewaunee/ Klenzaids/ Esco / Fisher
137	Laminar air flow	Kewaunee/ Klenzaids/ Esco / Fisher
138	Laboratory chairs (SS)	Kewaunee/GD-Waldner/Godrej/Citizen
139	Lab Stools (SS)	Kewaunee/Godrej/Citizen/Filtotech/Universal



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BID SUBMISSION

ONLINE BID SUBMISSION

The Online bids (complete in all respect) must be uploaded online in two Envelops as explained below:

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1.	Technical Bid	Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR of any Scheduled Bank against EMD.	.PDF
2.		Enlistment order of contractor.(If applicable)	.PDF
3.		Attested certificate of work experience.	.PDF
4.		Certificate of Registration of GST and acknowledgment of up to date field return of GST.	.PDF
5.		Affidavit as per Notice Inviting Tender Condition 1.2.2 page 18 of NIT. (Affidavit shall be purchased/ notarized between date of publishing and last date of submission of bids beside this NIT/Tender ID and name of work must be mentioned on the affidavit.).	.PDF
6.		Acceptance to execute INTEGRITY PACT.	.PDF
7.		Undertaking as per on firm's letter head. **"the physical EMD shall be deposited by me / us with the Authority inviting the tender, in case I / we become the lowest tenderer, within a week of the opening of financial bid, otherwise, department may reject the tender and also take action to debar me / us from tendering in any form in IIT Delhi"**	.PDF
8.		ESI and EPF Registration.	PDF
9.		Financial Information Form-A, Form-B, Form B1, Form-F (Duly filled with all required details.	.PDF
10.		In case of Partnership firm if all the papers of tender not signed by all the partners than a power of attorney authorizing the person who has signed the tender paper must be uploaded with the tender documents.	PDF
11.		Annexure-I (duly filled & signed by the bidders)	PDF
12.		Annexure-II (duly filled & signed by the bidders)	PDF
13.		Annexure-III(duly filled & signed by the bidders)	PDF
14.		Any other documents specified in NIT	PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	Financial Bid	Price bid should be submitted in BOQ format.	.Xls

All above documents shall be as per Tender Notice.

PART'C'
A SCHEDULE OF QUANTITY

Name of work: - Setting up sterilization facility and clean room (Class 1000 and Class 10000) for mPRAGATI at ISTE building at IIT Delhi. Sub Head: - E&M and Civil Works

Sr. No.	Description	Qty.	Unit	Rate	Amount
	Schedule A - Civil Works				
1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge.				
1.1	All kinds of soil	33.00	Cum.		
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
2.1	1:3:6 (1 Cement: 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	5.63	Cum.		
3	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
3.1	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size de rived from natural sources)	15.00	Cum		
4	Centering and shuttering including strutting, propping etc. and removal of form for				
4.1	Foundations, footings, bases for columns	42.00	Sqm.		
4.2	Lintels, beams, plinth beams, girders, bressumers and cantilevers	9.00	Sqm.		
5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				

5.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	1028.00	Kg.		
6	Half brick masonry with common burnt clay F.P.S. (non-modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
6.1	Cement mortar 1:4 (1 cement :4 coarse sand)	15.00	Sqm.		
7	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	17.00	Sqm.		
8	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	16873.48	Kg.		
9	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position, and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.				
9.1	Electric resistance or induction butt welded tubes	2161.08	Kg.		
10	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including pointing the joints with white cement and matching pigments etc., complete.	8.00	Sqm.		

11	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineerin-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	18.00	Sqm.		
12	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :				
12.1	Ridges plain (500 - 600mm)	18.00	metre		
12.2	Gutter (600 mm over all girth)	18.00	metre		
13	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge				
13.1	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	19.09	Cum.		
14	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	25.00	Cum.		
15	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				

15.1	In cement mortar	83.00	Cum.		
16	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
16.1	Of area 3 sq. metres and below	12.00	Each.		
16.2	Of area beyond 3 sq. metres	10.00	Each.		
17	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
17.1	For thickness of tiles above 25 mm and up to 40 mm	255.00	Sqm.		
18	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking within 50 metres lead :				
18.1	Thickness above 25 mm up to 40 mm	120.00	Sqm.		
19	Dismantling cement asbestos or other hard board ceiling or partition walls including stacking of serviceable materials and disposal of unserviceable materials within 50 metres lead.	255.00	Sqm.		
20	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge:				
20.1	15 mm to 40 mm nominal bore	33.00	Mtr.		
21	Dismantling C.I. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site within 50 metre lead as per direction of Engineer-in-charge:				
21.1	Up to 150 mm diameter	31.00	Mtr.		
22	Dismantling of flushing cistern of all types (C.I./PVC/Vitreous China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	15.00	Each.		

23	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	272.00	Cum.		
23.1	Supplying at site				
24	Welded steel wire fabric of required width having rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately)	1452.00	Kg.		
25	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x 60 cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40 mm nominal size), every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50 cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately).	192.00	Sqm.		
	Non Schedule				

26	Providing and laying ready to use non shrink. Cementitious free flow micro concrete of Compressive strength ≥ 50 MPa (28 days) according to ASTM C 109 of approved make and manufacture complete as per direction of Engineer-in-charge for replacing the carbonated part of concrete and repairing the damaged surface of concrete after fix the form work across the profile of damaged structural element. Pour the free flow non shrink. Cementitious free flow micro concrete mix in the form work. Payment shall be made on the basis of consumed dry material of micro concrete mix. (Product :- Renderock RG of Fosroc/ SikaRep® Microcrete -4 of Sika / MasterEmaco S-346 of BASF or equivalent of Pidilite)				
26.1	a) Without addition of aggregate	31.92	Ton		
27	Supply and installation of clean room wall panel ; 50mm thick double skin (PPGI) on both sides with 40±2 kg/m3 density PUF filing, 0.6 mm sheets on both sides. This will include all accessories, sealent and complete in all respect.	489.00	SQM		
28	Supply and installation of clean room wall panel ; 100mm thick double skin (PPGI) on both sides with 40±2 kg/m3 density PUF filing/ RA riser duct, 0.6 mm sheets on both sides. This will include all accessories, sealent and complete in all respect.	267.00	SQM		
29	Supply and installation of clean room ceiling system : Walkable double skin false ceiling of 50 mm thick with skin (PPGI) on both sides with 40±2 kg/m3 density PUF filing with 0.6 mm thick sheets on both sides. This will include all accessories, sealent and complete in all respect. All cutouts shall be factory fabricated. Ceiling supporting system included under this head.	527.00	SQM		
30	Providing and fixing Aluminium powder coated internal Covings with Aluminium Backing-R-50	645.00	Rmt		
31	Providing and fixing Aluminium powder coated external Covings with Aluminium Backing-R-50	427.00	Rmt		

32	Providing and fixing 2D/ 3D Aluminium powder coated corner coving	116.00	Nos		
33	Providing and fixing Two Way External Corner For 50mm Wall Panel	90.00	Rmt		
34	Two Way External Corner For 100mm Wall Panel	23.00	Rmt		
35	Supply & Installation of clean room campatible 50mm single /Double leaf door made up of 0.6mm thick GI pre coated sheet with door frame, with all SS acessoriess such as door closure, D-Handle, Hinges, push and pull plates etc., including view pannel, to be fitted on 50 mm / 100 mm thick clean rooms walls panel. All door shall have automatic bottom seal / drop seal.				
36	Providing and fixing Single Door 1000mmx2100mm	9.00	Nos		
37	Providing and fixing Double Door 1200mmx2100mm	10.00	Nos		
38	Providing and fixing Emergency Door 900mmx2100mm with panic baar	2.00	Nos		
39	Providing and fixing Double Door 2400mmx2100mm	2.00	Nos.		
40	Providing and fixing Clean room compatible double glazed windows to be fitted on clean room wall. View Panel size 1000 x 1000	24.00	SQM		
41	Providing and fixing Cutouts In ceiling Panel	191.00	Nos		
42	Providing and fixing Cutouts In Wall Panel for Electrical Socket, switches	155.00	Nos		
43	Providing and fixing Conduit PVC 1" disembodied inside PUF panel	320.00	Rmt		
44	Providing and fixing C Channel powder coated	500.00	Rmt		
45	Providing and fixing Cleanroom Return air Riser duct 900 x 80 mm made of GI internal for return of air	67.00	SQM		
46	Providing and fixing Riser Grill SS with capsule perforations, SS dome bolts and slot for filter	26.00	nos		
47	Providing and fixing Riser Prefilter	26.00	nos		
48	Providing and fixing Riser Damper to be operated from within the riser from cleanroom	26.00	nos		
	EPOXY FLOORING				

49	**(a)** Surface Preparation: It is essential that Nitoflor SL2000 of Fosroc / SIka Floor 261hs of Sika or equivelant of BASF is applied to sound, clean and dry surfaces in order that maximum bond strength is achieved between the substrate and the flooring system. All dust and debris should be removed prior to application of the product or its primer. New concrete floors: New concrete, or cementitious substrates, should be at least 28 days old and have a moisture content not exceeding 5%. Laitance deposits on new concrete are best removed by light grit blasting, mechanical scrabbling or grinding. Old concrete floors: Existing concrete floors which require refurbishment must be prepared to ensure a strong adhesive bond between the flooring system and the existing floor. Mechanical cleaning methods are strongly recommended particularly where heavy contamination by oil and grease has occurred or existing coatings are present. To ensure adhesion, all contamination should be removed. Alternatively, blasting techniques can be used to provide the required substrate.				
	(b) Priming: All surfaces treated with Nitoflor SL2000 of Fosroc / SIka Floor 261hs of SIka or equivelant of BASF should be primed with Nitoprime 25 of Fosroc/ Sika Floor 290 of Sika / equivelant of BASF, a solvent based epoxy resin primer designed for maximum absorption and adhesion to concrete substrates. Add the entire contents of the hardener tin to the base tin and mix the two primer components thoroughly for at least 2 minutes - under no circumstances should part mixing be considered. Once mixed, the primer should be applied immediately to the prepared substrate using stiff brushes or rollers. The primer should be well ‘scrubbed’ into the substrate to ensure full coverage, but care should be taken to avoid over application or ‘ponding’. Allow the primer to dry (see table below) before proceeding to the next stage, do not proceed whilst the primer is ‘tacky’ as this will lead to unsightly marks in the finished surface. Porous substrates may require a second primer coat - when the first coat is directly absorbed into the substrate - but minimum overcoating times must still be observed (see table below). The minimum overcoating times will vary slightly according to the porosity of the substrate. However, they should be in accordance with the following ambient application temperatures.				

	(c) Epoxy Underlay: Providing mixing and laying to the designated area the epoxy underlay, Nitoflor EU5 of Fosroc/ Sika Floor 291 of Sika or equievelant of BASF consists of special resins and graded aggregates formulated to withstand chemical attack and impact shock. Shall be supplied as a 3 component system comprising resin base, resin hardener and fillers. When correctly laid Nitoflor EU5 of Fosroc/ Sika Floor 291 of Sika or equivelant of BASF will provide a surface ready to receive applications of Fosroc/ Sika or equivelant of BASF flooring systems. Epoxy Underlay shall achieve a minimum compressive strength of 60 N/mm^2, Flexural strength of 20 N/mm^2 and Tensile strength of 10N/mm^2 @ 7 days. The underlay shall have nil water absorption when tested as per BS1881 Part 122-1983. The adhesion strength of the epoxy underlay shall be greater than the tensile strength of concrete. Cost Inclusive of Supply, apply, equipment. Exclusive of Taxes as applicable,. Client shall provide Storage, Power, water,etc. Flooring work shall be executed by Fosroc/ Sika/ BASF Authorised Applicator.				
	(d) Epoxy Topping: Providing mixing and laying to the designated floor areas shall be surfaced with Nitoflor SL2000 of Fosroc/ Sika Floor 261 hs of Sika or equvelant of BASF, a 2 mm thick flow-applied epoxy resin floor topping. Nitoflor SL2000 of Fosroc / Sika Floor 261 hs of Sika or Equivelant of BASF consists of graded aggregates bound in a pigmented epoxy resin binder. It is supplied as a four component system, pre-weighed for on-site mixing. When laid, it provides a smooth, light-reflective surface. It is available in a range of standard colours. The topping shall achieve a minimum compressive strength of 40 N/mm2 and a flexural strength of 25 N/mm2 at 7 days when tested to BS6319. Slip resistance : 91.3 & 135.6 (As per TRRL skid test in accordance with BS 6677 : Part 1:1986, Shore D Hardness as per (ASTM D 2240) : 80 .Abrasion resistance : 0.1mg/ cycle-loss of weight (ASTM D 4060) (with CS 17 wheel of 1000g weight) . Adhesion Strength @ 7 days (ASTM D412) :> 1.0N/mm2. it shall be capable of accepting foot traffic at 24 hours and vehicular traffic at 48 hours. Cost Inclusive of Supply, apply, equipment's. Exclusive of Taxes as applicable,. Client shall provide storage, power, water, etc. Flooring work shall be executed by Fosroc/ Sika or equivelant of BASF Authorised Applicator.				
50	**Epoxy underlay 3.0mm + Epoxy Self Levelling Topping at 2.0 mm**	412.00	SQM		

51	Providing and fixing75mm X 75mm Providing, laying and fixing epoxy coving at all required junction i.e wall/floor, wall/ceiling, Wall/wall which shall be constructed with solvents very high abrasion resistant aggregates. Coving shall be impermeable with water & flush with wall/floor/ceiling & with proper levelling at all floor, all levels, all heigh	409.00	Rmt		
	CLEANROOM LAB FURNITURE AS DETAILED BELOW				
52	Providing and fixing SS 304 show rack cum cross over bench made of 18 swg SS. Dimensions: 1000mm (L) x 300mm (W) x 650mm (H) matt finish	2.00	Nos		
53	Providing and fixing MS painted Emergency shower and Eye wash station with hand operated shower and foot / elbow operated eye wash. The unit shall have a common water inlet and drain point.	2.00	Nos		
54	Providing and fixing Static Pass Box mde of SS 316 working size approx 600 x 600 x 600 mm with door interlock, UV light, UV counter all complete	5.00	Nos		
55	Providing and fixing Dynamic Pass Box made of SS 316 working size approx 600 x 600 x 600 mm with HEPA filtered air supply, blower motor assembly, door interlock, UV light, UV counter all complete	1.00	NOS		
56	Providing and fixing Single entry air shower fabricated with SS-304, 20G sheet for movement of single person with all complete with H13 HEPA Filter, Pre-filter, blowers, ss adjustable nozzles, SS grated floor, two doors with inter-locking arrangement timer with fully adjustable, fully automatic with electronic logic control. Air shower shall confirm to clean room class 100 at nozzle outlet.	1.00	Nos		
57	Providing and fixing Self levelling compound for preparation of floor 3 mm thick	159.00	SQM		
58	Providing and fixing Aluminium powder coated Supply and Return air module (perforated sheet) with air adjustable damper.	32.00	Nos		

59	Providing and fixing 36W LED cleanroom light fixture 2' x 2', Bottom openable, with electronic ballast	39.00	Nos		
	UTILITIES				
60	SITC of Compressed **Dry Air system** consisting of skid mounted 3 HP air compressor Piston type, with electric motor, Air receiver of 200 Ltr, Maximum working pressure 12 kg /cm2 and flow 12 CFM. Air dryer 20 CFM. System shall have line filter 0.01 PPM (0.01 micron) for removal of solid particles, liquid water and oil aerosol. Line filter 0.003 ppm (Activated carbon filter) for removal of oil vapour and hydrocarbon odours. Life of 1000 Hrs.	2.00	No		
61	Providing and fixing SITC of Industrial **RO Plant 100Ltr/ hour** capacity consisting of high pressure Pump, panel interconnecting piping, 1000 ltr PVC tanks all complete.	1.00	No		
62	Providing and fixing SS 304 Pendent for Utility Piping inside lab				
63	Fabrication and installation of **SS 304 pendent** hanging from ceiling 3" dia with buffed external surface. Each pendent shall have provision to accommodate 3 pipes each of 1/4" or 1/2" diameter of various utilities. Bottom of pendent shall be at 1.8 mtr above floor level. Internal spacer for pipes shall be provided at top and bottom face of pendent and shall be welded with ss plate. The pendent shall be supported from ceiling. Price of internal pipes shall be paid separately under different heads.	10.00	No		
64	Providing and fixing Fabrication and installation of **SS 304 pendent** hanging from ceiling 2" dia with buffed external surface. Each pendent shall have provision to accommodate 2 pipes each of 1/4" or 1/2" diameter of various utilities. Bottom of pendent shall be at 1.8 mtr above floor level. Internal spacer for pipes shall be provided at top and bottom face of pendent and shall be welded with ss plate. The pendent shall be supported from ceiling. Price of internal pipes shall be paid separately under different heads.	8.00	No		

	UTILITY PIPING SYSTEM: Installation of utility piping, Orbital Welding, TIG welding etc as required for various system				
	Gas bank Accessories				
65	Providing and fixing Frame 1+1 Cyl. Manifold, GI	4.00	Set.		
66	Providing and fixing Cylinder Bracket with chain SS 202	16.00	No.		
67	Providing and fixing Nut Bullnose 1/4" SS 316, 150 Bar	16.00	No.		
68	Providing and fixing Check Valve 1/4" SS 316, 150 Bar	8.00	No.		
69	Providing and fixing Hose ,1 Mtr Long, 1/4" SS 316, 150 Bar	8.00	No.		
70	Providing and fixing Isolation Valve, 1/4" SS 316, 150 Bar	8.00	No.		
71	Providing and fixing Double Stage Regulator With PRV 1/4" NPTF (Flow: 200 LPM) SS316, 150 Bar in and 0.1-10 bar outlet pressure	6.00	No.		
72	Providing and fixing Connector 1/4" x 1/2" SS 316, 150 Bar	4.00	No.		
73	Providing and fixing Manifold Block T type, SS316	4.00	No.		
74	Providing and fixing Ball Valve, 1/2" SS316, 150 Bar	4.00	No.		
75	Providing and fixing Flash BacK Arrestor with Connector 1/2", Brass, 10 Bar	1.00	No.		
76	Providing and fixing Flash BacK Arrestor with Connector 1/4", Brass, 10 Bar	1.00	No.		
77	Providing and fixing CO2 Heater With Inlet & Outlet Connector, Brass	2.00	No.		
78	Providing and fixing Seamless Tube 1/4" SS 316, 150 Bar	48.00	Mtr.		
	Lab Piping & Accessories as below.				
79	Providing and fixing Source Connector 1", SS316, 10 Bar	1.00	No.		
80	Providing and fixing Source Connector 1/2", SS316, 10 Bar	3.00	No.		
81	Providing and fixing Ball Valve 1", SS316, 10 Bar	2.00	No.		
82	Providing and fixing Ball Valve 1/2", SS316, 10 Bar	10.00	No.		
83	Providing and fixing Ball Valve 1/4", SS316, 10 Bar	30.00	No.		

84	Providing and fixing Y-Strainer With Connector 1", 3 Bar, Brass	1.00	No.		
85	Providing and fixing Y-Strainer With Connector 1/2", 3 Bar, Brass	1.00	No.		
86	Providing and fixing Pressure Reducing Valve 1", 3 Bar, Brass	1.00	No.		
87	Providing and fixing Pressure Reducing Valve 1/2", 3 Bar, Brass	1.00	No.		
88	Providing and fixing Zero Dead Leg Valve including TC Liner and Clamp With Connector 1/2", 3 Bar, SS316	5.00	No.		
89	Providing and fixing Pressure Gauge 4"Dial 1/2"BSPM Ball Valve 1/2"BSPF Connector 1/2"BSPM x 1/2"OD Unequal Tee 1"OD x 1/2"OD	2.00	Set.		
90	Providing and fixing Pressure Gauge 4"Dial 1/2"BSPM Ball Valve 1/2"BSPF Connector 1/2"BSPM x 1/2"OD Equal Tee 1/2"OD	2.00	Set.		
91	Providing and fixing Point Of Use Control Panel 1/4"	7.00	No.		
92	Providing and fixing Line Regulator (Flow 150 LPM) along with Pressure Gauges & Mounting Plate	3.00	No.		
93	Providing and fixing Connector 1/4" x 1/2" SS 316, 0 - 10 Bar	3.00	No.		
94	Providing and fixing Equal Tee 1" X 1" SS 316	2.00	No.		
95	Providing and fixing Equal Tee 1/2" X 1/2" SS 316	12.00	No.		
96	Providing and fixing Unequal Tee 1" X 1/2" SS 316	9.00	No.		
97	Providing and fixing Unequal Tee 1" X 1/4" SS 316	20.00	No.		
98	Providing and fixing Reducer 1" X 1/2" SS 316	5.00	No.		
99	Providing and fixing Reducer 1/2" X 1/4" SS 316	9.00	No.		
100	Providing and fixing OD to PU Connector	17.00	No.		
101	Providing and fixing Shower Connector	1.00	No.		
102	Providing and fixing End Connector 1" SS 316	17.00	No.		
103	Providing and fixing End Connector 1/2" SS 316	51.00	No.		

104	Providing and fixing Elbow 1" SS 316	11.00	No.		
105	Providing and fixing Seamless Tube 1" SS 316, 150 Bar	74.00	Mtr.		
106	Providing and fixing Seamless Tube 1/2" SS 316, 150 Bar	280.00	Mtr.		
107	Providing and fixing Seamless Tube 1/4" SS 316, 150 Bar	240.00	Mtr.		
108	Providing and fixing Flexible PU Pipe 1/4"	58.00	Mtr.		
109	Providing and fixing SpeciaL supports comprising of SS Clamp, Unistrut Channel, PP Clamp With Rail Nut(For all size of tubes as per BOQ), Aluminium Profile , PP End Caps, M10 GI Threaded Rod, M10 GI Plane Washer & nut, M10 GI Anchor Bolt For Threaded all above mentioned items ,Tagging & accessories.	1.00	Lot		
110	Providing and fixing RO System : CPVC Piping 1/2" diameter for distributon of RO water from source to point of use, including proper support, joints/ sockets, tee, elbow all as required as directed by the engineer.	30.00	mtr		
	INSTALLATION OF PROCESS EQUIPMENT AS BELOW:				
111	Installation of Bio safety cabinets including exhaust arrangement for BSL lab. IIT shall provide the Bio safety cabinet at site and contactor has to make cutout in ceiling, provide exhaust duct, direct drive exhaust fan and cowl with bird screen.	2.00	Nos		
112	Installation of Double door autoclave for BSL lab. IIT shall provide the Autoclave at site and contactor has to make cutout in wall to suit installation of the Autoclave. Equipment manufacturer will install and commission the Autoclave.	1.00	Nos		
	Less Credit for Dismantled Materials				
113	Firewood from damaged cupboards etc.	200.00	Kg.		
114	Old Flush door shutter of various thickness and size with fitting etc.	12.00	Each.		
115	Old M.S. section / steel bars scrap / G.I. pipes etc.	500.00	Kg.		
116	Old/ Broken Aluminium section + beading etc.	50.00	Kg.		
			Total Civil Works		

	Schedule B - E & M Works				
117	Supplying and laying of one number PVC insulated and PVC sheathed / XLPE armoured**aluminium** power cable of 1.1 KV grade ISI marked of size **3.5 Core x 300 sqmm**as per following**.** (Acceptable make: Havells / Polycab / NICCO / RR Kabel / Skytone / Gloster / KEI / Universal)				
117.01	Direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.	70	metre		
117.02	On wall surface as required.	40	metre		
117.03	On cable tray as required.	10	metre		
118	Supplying and laying of 1 Core x 185 sqmm PVC insulated ISI marked flexible copper cable including end termination with copper lugs etc. as required. (for connection from busbar to main MCCB) (Acceptable make: Havells / Polycab / NICCO / RR Kabel / Skytone / Gloster / KEI / Universal)	60	metre		
119	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface / recessed steel / PVC conduit as required. (Acceptable make: Havells / Polycab / NICCO / RR Kabel / Skytone / Gloster / KEI / Universal / Finolex)				
119.01	3 x 4 sqmm	1500	metre		
119.02	3 x 1.5 sqmm	800	metre		
120	supplying and fixing of following sizes of ISI marked steel conduit alongwith accessories in surface / recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed				
120.01	20 mm	800	metre		
120.02	25 mm	1500	metre		
121	Providing and fixing **630 A, 50 KA, FPMCCB** with thermomagnetic release and terminal spreaders with sheet steel cubicle panel board on wall duly painted with powder coat of size not less than 600 mm x 600 mm x 400 mm (depth) including drilling holes in cubicle panel, hinged door openable form front side, with operating handle, making connections, etc. as required.	1	Each		

	(Acceptable make of MCCB: L&T / Havells / Siemens / GE / C&S / Crompton / Legrands)				
122	Earthing with **G.I. earth plate 600 mm X 600 mm X 6 mm** thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	2	Set		
123	Earthing with **copper earth plate 600 mm X 600 mm X 3** mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	2	Set		
124	Providing and fixing **25 mm X 5 mm copper strip in 40 mm**dia G.I. pipe from earth electrode including connection `with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	50	metre		
125	Providing and fixing **25 mm X 5 mm G.I. strip in 40 mm dia**G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	50	mtr.		
126	Providing and fixing **25 mm X 5 mm copper strip on surface** or in recess for connections etc. as required.	100	mtr.		
127	Providing and fixing **25 mm X 5 mm G.I. strip on surface** or in recess for connections etc. as required.	50	mtr.		
128	Providing and fixing**4.00 mm dia bare copper wire** on surface or in recess for loop earthing as required.	100	mtr.		
129	Providing and fixing **earth bus** of 50 mm X 5 mm copper strip on surface for connections etc. including drilling different holes as required.	2	mtr.		

130	Supplying and installing following size of perforated Hot Dipped **Galvanized Iron cable tray** (Galvanization thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. (Acceptable make: Technofab / Indiana cable tray / Legrand)				
130.01	100 mm width X 50 mm depth X 1.6 mm thickness	100	mtr.		
130.02	225 mm width X 50 mm depth X 1.6 mm thickness	100	mtr.		
130.03	300 mm width X 50 mm depth X 1.6 mm thickness	100	mtr.		
131	Supplying and installing following size of perforated Hot Dipped **Galvanized Iron cable tray "bends"** (galvanization not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. [same make as cable tray]				
131.01	100 mm width X 50 mm depth X 1.6 mm thickness	20	each		
131.02	225 mm width X 50 mm depth X 1.6 mm thickness	25	each		
131.03	300 mm width X 50 mm depth X 1.6 mm thickness	30	each		
132	Supplying and installing following size of perforated Hot Dipped Galvanized Iron cable tray "Tee" (galvanization not less than 50 microns) with perforation not more than 7.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. [same make as cabe tray]				
132.01	100 mm width X 50 mm depth X 1.6 mm thickness	10	each		
132.02	225 mm width X 50 mm depth X 1.6 mm thickness	20	each		
132.03	300 mm width X 50 mm depth X 1.6 mm thickness	25	each		

133	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required . [Acceptable make: Havells / Siemens / Standard / Crompton / L&T / Legrand / GM]				
133.01	12 way (4 + 36), Double door	4	each		
134	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface / recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (but without MCB / isolator) [Acceptable make: Havells / Siemens / Standard / Crompton / L&T / Legrand / GM]				
134.01	8 Way, Double door	2	each		
135	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. [Acceptable make: Havells / Siemens / Standard / Crompton / L&T / Legrand / GM]				
135.01	Single pole	150	each		
135.02	Double pole	10	each		
135.03	Triple pole	10	each		
136	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	20	each		
137	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required. [Acceptable make: Havells / Siemens / Standard / Crompton / L&T / Legrand / GM]				
137.01	63 A	2	each		
137.02	100 A	4	each		

138	Supplying and fixing 30 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top along with 30 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required [Acceptable make: Havells / Siemens / Standard / Crompton / L&T / Legrand / GM]	6	each		
139	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc.as required.				
139.01	For 12-way, Double door TPN MCBDB	4	each		
140	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following single pole and neutral, sheet steel, MCB distribution board, 240 Volts, on surface/ recess, complete with testing and commissioning etc.as required.				
140.01	For 8-way, Double door SPN MCBDB	2	each		
141	Supplying and fixing of rcessed type clean room compatible LED luminaire of size 595 mm x 595 mm (approx) with provision of bottom openable, IP 65 protection, body made of CRCA powder coated with white colour, high transmittance diffuser completes with connections etc. as required. CCT not less than 5700 K, Wattage 36 - 50 Watt [Acceptable make: Philips / Panasonic / Bajaj / Polycab / Wipro / Crompton / Osram / Havells /	36	each		
142	Supplying and fixing following size / modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required. [Acceptable make: Legrand / Havells / L&T / MDS / Wipro / GM / Polycab / Schneider]				
142.01	2 module	20	each		
142.02	3 Module	10	each		
142.03	6 Module	20	each		
142.04	8 Module	100	each		
142.05	12 Module	8	each		

143	Supplying and fixing following modular base & cover plate on existing modular metal boxes etc. as required. [Acceptable make: Legrand / Havells / L&T / MDS / Wipro / GM / Polycab / Schneider]				
143.01	2 module	10	each		
143.02	3 Module	5	each		
143.03	6 Module	10	each		
143.04	8 Module	50	each		
143.05	12 Module	4	each		
144	Supplying and fixing following modular switch / socket on the existing modular plate and switch box including connections but excluding modular plate as required. [Acceptable make: Legrand / Havells / L&T / MDS / Wipro / GM / Polycab / Schneider]				
144.01	5/6 A switch (light loads)	40	each		
144.02	Telephone socket outlet	20	each		
144.03	15/16 A switch (power loads)	200	each		
144.04	6 pin 15/16 A socket outlet	200	each		
145	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required. [Acceptable make: Havells / MDS / GM / L&T]	2	each		
146	Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required. (Acceptable make: Havells / Finolex / Polycab / KEI)				
146.01	1 Pair	200	metre		
146.02	2 Pair	50	mtr.		
147	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required. (Acceptable make: D Link / Legrand / Finolex)				
147.01	1 run of cable	200	metre		
147.02	2 run of cable	100	metre		

148	Supplying and fixing following type and module data sockets on the existing modular plate and switch box including connections as required. [Acceptable make: L&T / MDS / Wipro / Havells / GM]				
148.01	RJ11 socket with shutter 1 M	20	each		
148.02	Twin RJ11 socket with shutter 1 M	25	each		
148.03	RJ45 CAT6 socket with shutter	25	each		
149	Supplying and fixing of 250 mm sweep fresh air (exhaust fan) fan of not more than 45 watt rating, 1100 - 1350 rpm, complete with motor blade assembly, non-metallic frame (body), louvre shutter with two year warranty on product, colour white or off white. [Acceptable make: Havells / Usha / Bajaj / Orient) Ref similar product: Havells Ventilair DX 250]	2	each		
150	SITC of surface mounted LED downlighter with metallic body (either round or square shaped, with inbuilt driver, CRI not less than 80) luminaire of 12 watt rating cool day light with colour temperature 6000-6500 K, lumen output not less than 1000 lumen suitable for use on 230-volt, 50 Hz ac supply as required. [Acceptable make: Philips / Panasonic / Bajaj / Wipro / Crompton / Osram / Havells]	10	each		
151	Supplying and laying of flame-retardant rubber mat of 11 KV di-electric strength grade (ISI marked) of thickness not less than 2.0 mm, finished with anti-slip ribbed srface compliant to IEC 61111:2009 for laying infront of electrical panel and utilities etc. complete as required. (Acceptable make: Mrvel / Shock Pru / Duratuf / Dozz / Insulatica)	50	sqm		
152	Fabrication, supply, Installation testing & commissioning of Electrical control panel of cubicle construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter-connection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc.				

	complete in all respect, suitable for **MAIN MV DISTRIBUTION PANEL** complete as per CPWD specification for Electrical Works with following Incoming and Outgoing, suitable for operation on 415 V, 3 phase, 50 Hz ac Supply with enclosure protection class IP 42 as required. VFD with fan cooler unit should be incorporated in the compartment for AHU with connections (cost of VFD excluded in Panel): Size 2300 mm (L) x 2000 mm (H) x 450 mm (Depth) (acceptable make: Adlec / Trocolite / Rittal / Jakson / Milestone / Advance / Neptune / Anand / EAP / Intracool)				
152.01	**INCOMING:** 400 A, 50 kA, 4 Pole MCCB, with microprocessor release conforming to IS/IEC 60947-2, Ics = 100% Icu, adjustable overload setting from 0.4 to 1.0 x Ir, inbuilt instantaneous protection with front handle for operation, spreader terminal for cable / busbar connection (Acceptable make: L&T / Legrand / Siemens / Havells / GE)				
152.02	Digital Voltmeter 0 - 500 V with selector switch, Digital Ammeter (0 - 400 A), of accuracy class 0.5 with selector switch, Digital KWH meter of class 1.0 & CTs etc. (Make: L&T / Rishabh / AE)				
152.03	LED type RYB Phase indicating lamps, ON, OFF indicating lamps				
152.04	Set of copper busbar 600 A with proper insulated mountings				
	OUTGOINGS:				
152.05	125 A, 30 kA, 4 Pole MCCB, conforming to IS/IEC 60947-2, Ics = 100% Icu, adjustable overload setting, with front handle for operation, spreader terminal / phase barrier for cable / busbar connection : 2 nos. (Acceptable make: L&T / Legrand / Siemens / Havells / GE)				
152.06	63 A, 10 kA, 4 Pole MCCB, conforming to IS/IEC 60947-2, Ics = 100% Icu, adjustable overload setting, with front handle for operation, spreader terminal / phase barrier for cable / busbar connection : 12 nos. (Acceptable make: L&T / Legrand / Siemens / Havells / GE)				

152.07	32 A, 10 kA, 4 Pole MCCB, conforming to IS/IEC 60947-2, Ics = 100% Icu, adjustable overload setting, with front handle for operation, spreader terminal / phase barrier for cable / busbar connection : 04 nos. (Acceptable make: L&T / Legrand / Siemens / Havells / GE)	1	Job		
153	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.				
153.01	3.5 Core x 300 sqmm	4	each		
154	Supplying, Installation, Testing and Commissioning of 10 KVA online 3 phase UPS system with 30-minute backup including batteries, interconnecting cables, battery racks etc. complete as required. (Acceptable make of UPS: Emerson / APC / Mitsubishi / Siemens / DB Power Electronics / GE / Microtech & Acceptable make of battery: Exide / Amararaja / Luminous / stamford / AMCO / NICCO / Prestolite / Pacesetter / Furukawa)	2	Set		
155	Supplying and fixing of 30-Watt LED street light for compound lighting made of pressure die cast housing with toughened glass with high power LEDs with IP66 protection fitted on wall with GI pipe of appropriate size with clamps, nuts, bolts, etc. as directed by the Engineer-in-charge. (Acceptable make: Philips / Wipro / Panasonic / Havells / Crompton)	6	Set		
	(HVAC WORK)				
156	Supplying, Installing, Testing and Commissioning of screw / scroll type water chilling machine each having capacity of 1,45,150 Kcal / hour [56 TR] at chilled water inlet / outlet temperature of 11-12 deg C / 5.5 - 6.5 deg C with chilled water circulation rate of 150 (min) to 516 (max) LPM [nominal] and air cooled condenser made of copper coil, suitable for operation on 400±10% Volt, 50 Hz ac supply & refrigerant R 407c / R410 (environment friendly) for screw / scroll type machine each comprising of the following complete as per				

	specifications and as required. (Acceptable make: Bluestar / Daikin / Trane / Carrier / Voltas)				
156.01	Multiple compresors (not less than 2) - Scroll / screw type compressor fully hermetic complete with automatic capacity control, safety switches, speed increasing gears, forced feed lubrication system etc. as per specifications.				
156.02	Close transition type automatic soft / star-delta starter suitable for compressor motor complete with ammeter with CTs, overload protection, under voltage protection, protection against phase reversal & independent single phase preventors etc. complete as required.				
156.03	Necessary drive arrangement				
156.04	Lubrication device consisting of automatic electric pump, oil cooler, head tank, oil strainer, automatic pressure regulating valve, oil heater, oil heater thermal switch etc. as per specifications.				
156.05	Matching air-cooled condenser of copper tubes and integrally finned				
156.06	Matching shell & tube flooded type / DX chiller for scroll / screw type units of MS shell and copper tubes.				
156.07	Refrigerant piping fittings, valves and accessories to interconnect compressor, condenser, chiller and expansion valve.				
156.08	Microprocessor based control panel complete with accessories as per specifications.				
156.09	Refrigerant line accessories comprising of safety valves, angle valve, liquid line indications, liquid level control etc.				
156.10	Water flow switches at inlet and outlet of chiller, water drain & air purge valves wherever required.				
156.11	Suction line and chiller insulation with minimum 19 mm thick polyvinyl nitrile rubber insulation finished with 0.63 mm thick G.S.S. cladding complete as required.				
156.12	Frame work for mounting the above condenser, chiller compressor and motor with base plate complete with antivibration pads / springs.				
156.13	Initial / first charge of refrigerant gas and compressor oil				

156.14	Proper foundation on existing RCC / MS foundation for the chilling unit	2	Set		
157	Supplying, erection, testing and commissioning mono block / split casing chilled water pump set capable of delivering 516 LPM (matching with the chiller unit) of water against a head of 30 metre. Each pump shall comprise of following as required as per specifications. (Acceptable make: Beacon / Batliboi / Mther& Platt / KSB / BE / WASP / Grandfos / Jyoti / Crompton / Kirloskar)				
157.01	1 no. - Mono block / split casing type pump				
157.02	1 no. - suitable HP, SPDP sqirrel cage induction motor with class - B insulation, matching with chilled water circulation, operating on 415 +/- 10% volts, 3 pphase, 50 Hz a.c. supply.				
157.03	1 Lot - expanded polystrene [T.F. quality] insulation of not less than 50 mm thick duly cladded between aluminium sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.				
157.04	2 nos. - 150 mm dia dial type pressure gauges				
157.05	1 Lot - Mounting frame with ant vibration pads				
157.06	Foundation for the pump unit on existing RCC / MS structure	2	Set		
158	Supplying, laying/ fixing, testing and commissioning of 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 following closed cell elastometric nitrile rubber of minimum 45 Kg / cu m density, thermal conductivity 0.037 W/MK or better at 20 deg mean temperature class 'O' insulation applied by suitable adhesive complete including repairing of damage to building etc. asper specifications and as required complete in all respect. Note:-The Pipes shall be M.S. 'C' class as per IS : 1239 , minimum 6.35mm				

	thick M.S. Sheet (Acceptable make: Bansal / TATA / ITC / ATC / JST / Jindal / Zenith / Nezone)				
158.01	80 mm dia (32 mm thick insulation)	40	metre		
158.02	65 mm dia (32 mm thick insulation)	70	metre		
158.03	50 mm dia (32 mm thick insulation)	6	metre		
158.04	40 mm dia (32 mm thick insulation)	24	metre		
158.05	32 mm dia (19 mm thick insulation)	24	metre		
158.06	25 mm dia (19 mm thick insulation)	5	metre		
159	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications. BALANCING VALVE WITH BUILT IN MEASURING FACILITY with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified. (Acceptable make: BDK / Crane / Intervalve / KSB Ltd / Indian Valve International / Kirloskar)				
159.01	65 mm dia	1	each		
159.02	50 mm dia	1	each		
159.03	40 mm dia	3	each		

160	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications. NON-RETURN VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified. (Acceptable make: BDK / Crane / Intervalve / KSB Ltd / Indian Valve International / Kirloskar / Leader / Sant)				
160.01	80 mm dia	2	each		
161	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications. Y-STRAINER of Ductile CI Body flanged ends with stainless steel strainer for chilled water circulation including insulation as specified. (Acceptable make: BDK / Crane / Intervalve / KSB Ltd / Indian Valve International / Kirloskar / Leader / Sant / Trishul / Fountain Annapurna / L&T / Amco)				
161.01	80 mm dia	2	each		
161.02	65 mm dia	1	each		
161.03	50 mm dia	1	each		
161.04	40 mm dia	3	each		
161.05	32 mm dia	1	each		

162	Supply, Installation, Testing and Commissioning of following sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 3 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. The maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have a pressure rating of 25 Bar minimum. (Acceptable make: Honeywell / JCI / Siemens / Danfoss / Staefa)				
162.01	50 mm dia	2	each		
162.02	40 mm dia	2	each		
162.03	32 mm dia	2	each		
162.04	25 mm dia	1	each		
163	Supplying, installation, testing and commissioning of return air exhaust air temperature sensor as required. (Aceeptable make: Siemens / ABB / /Honeywell / L&T / Schneider)	5	each		
164	Supplying, installation, testing and commissioning of electric strip heaters of following capacities for monsoon reheat and winter heating arranged in banks complete with cooling / heating thermostats [TH], humidistats [HU], safety stats [SF] etc. as per details given below for AHUs complete with interwiring [but excluding cable & connection from AHU switch board] and connections etc. complete as required and as per specifications. (Acceptable make: KEPL / Intracool / Rapid Control)				
164.01	4.5 KW	2	each		
164.02	6 KW	6	each		
164.03	9 KW	4	each		
164.04	12 KW	8	each		

165	RECIRCULATION & AIR HANDLING UNIT: Supply, Installation, Testing and commissioning of factory built floor mounted cDouble skin air handling units with 2 mm thick thermal break aluminium profile, 43+-2 thick Puf panel having a density not less than 38 kg/m.Panel shall have 0.6mm precoated G.I sheet as outer skin and 0.6mm thick plane GI inner skin. The Unit shall be suitable for clean room applications with coving inside. The AHU shall consists of return air mixing chamber, EU4 filter, chilled water cooling minimum 6 row deep with bypass damper if required, fan section with DIDW centrifugal backward curved fan with TEFC squrirral cage induction motor, filter section with EU7 filters. AHU shall be complete with fresh air, return air and supply air dampers. Fan section & filter sections shall have service door of not less than 500 mm width. The AHUs will have fresh air module with 10 micron filter &Aluminium low leakage damper of required capacities. The unit shall be suitable for 415 V ±10% volts, 50 Hz, ac supply suitably designed for variable frequency drive application, drain connections, stainless steel drain pan with PUF insulation, pressure gauge, thermometers (inlet & outlet of coil), auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as required. (Acceptable make: Edgetech / Zeco / System Air / Climcone) [Test certificate of showing capacity of the unit needs to be submitted]				
165.01	4000 CFM @125 mm WC SP (not less than 7.5 TR) with HEPA filter	1	Set		
165.02	5000 CFM @125 mm WC SP (not less than 4.5 TR) with HEPA filter	1	Set		
165.03	6000 CFM @125 mm WC SP (not less than 5.2 TR) with HEPA filter	2	Set		
165.04	5000 CFM @ 125mm WC SP (Not Less Than 5.2 TR)	1	Set		

166	Supply,installation, balancing and commissioning of fabricated at site GSS sheet metal rectangular / round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vane hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required. [For outdoor application] (Acceptable make of sheet: TATA / Jindal / SAIL / HSL / Nippon / National)				
166.01	Thickness 0.63 mm sheet	50	sqm		
166.02	Thickness 0.80 mm sheet	400	sqm		
167	Providing and fixing duct insulation XLPE Rubber insulation on supply & return air GI ducts and dampers with adhesive and tape -				
167.01	19 MM thick	50	sqm		
167.02	19 mm thick & 5 mil glass cloth with UV protection.	500	sqm		
168	20 mm thick Pre Insulated Ducting sheets of appropriate size having a PUF density of 45 Kg/CuM with 80 Micron Aluminum facing on both the sides with stucco type finish, duly Class 'O' certified as per BS along with the standard installation accessories. All longitudinal and transverse joints sealed with silicon sealant. (Inddor application; measurement of outer duct size) (Acceptable make: RR Engineers / Asawa / Paul)	900	sqm		
169	Supply, installation, testing and commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications. (Acceptable make: System Air / Carrier)	15	sqm		
170	Supply, installation, testing and commissioning of Motorized (ON-OFF Type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minimum 1.5 sqmm) for integration within AHU room. (Acceptable make: System Air / Carrier / Airflow / Siemens / Staefa)				
170.01	Damper	20	sqm		

170.02	Actuator	6	each		
171	Supplying, installation, testing and commissioning of following items in appropriate position of damper as required. (Make: Same as fire damper)				
171.01	Fusible link type MS / GI fire damper at AHU	6	each		
171.02	Fusible Link	6	each		
172	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti-smudge ring & removable core. (Acceptable make: System Air / Carrier / Airflow / Siemens / Staefa)	10	sqm		
173	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core. (Acceptable make: System Air / Carrier / Airflow / Siemens / Staefa)	12	sqm		
174	Supplying, Fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required 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 inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications. (Acceptable make: System Air / Carrier / Airflow / Siemens / Staefa)				
174.01	Fire damper	4	sqm		
174.02	Actuator	6	each		
	HEPA Terminal				

175	Supplying, installation, testing and commissioning of terminal hepa filter (H13) with terminal, damper & SS perforated sheet and HEPA H13 (for ISO-6, 7 areas). Terminal shall be complete with HEPA filter, SS perforated sheet and volume control damper. Terminals shall be suitable for following size of HEPA filters. (Acceptable make of HEPA filters: AAF / Camfil / Frudenburg)				
175.01	HEPA filters. Size : 610 x 610 mm. of 750 CFM rating	26	each		
175.02	HEPA filters. Size : 305 x 305 mm. of 300 CFM rating	2	each		
176	Supplying, fixing, testing and commissioning of GI water pipes on wall of following size alongwith necessary clamps, fittings such as bends, tees etc. adequately supported as per specifications and as required. (Acceptable make: TATA / Jindal / Nezone / Bansal / ITC / ATC / Zenith)				
176.01	25 mm dia GI pipe medium class [for drainage of water from FCUs]	50	metre		
	Building Management System				
177	Supply, installation, testing and commissioning of main operator station comprising: Centralized automation along with controllers, sensors and control valves, man machine interface unit, cabling interconnecting the units and integrator units for the building management system to operate remotely for the entire Clean room labs. (Acceptable make: Siemens / Bosch / Honeywell)				
177.01	Windows based graphical user software, web based with GUI, Alarming, reporting software as per specifications (With Including Web Client Facility. In Which, after providing IP address, BMS Software can be monitored thorugh web. Where as with LCD monitoring there is distance limitation of VGA Cable around 10 to 15 Mtr depending upon cable quality, but with web client we can monitor BMS parameter from anywhere irrespective of distance).	1	each		

177.02	Operator Workstation with latest Intel micriprocessor, Core I 5, 16 GB RAM, 1 TB HDD, 2.8 Ghz, Keyboard, Mouse, Microsoft Windows Operating System with MS Office, Licenced Anti-Virus Software LED Monitor - 32 inch	1	each		
177.03	DDC Ethernet controllers, I/P based, with supply , relays, wiring trays, wiring in an enclosure of required points as per design. (Including Controller Panel Box)	5	each		
177.04	UL listed, BTL certified, Soft point integrator, Open Protocol Software Integration. These integrators shall be of same make as DDCs and shall contain min total 1250 data points with all necessary ports & points capacity for software integration with equipment.	1	each		
177.05	Modulating type motorized actuator of 5 Nm torque with operating voltage of 24 Volt AC/DC and modulating voltage of 0-10 V DC supply	5	each		
177.06	Duct mounting type temperature and RH sensor with output of 4 to 20 mA or 0-10V DC supply and input of 24V DC/AC	5	each		
177.07	Differential pressure switch for Filter & Fan Status with potential free contact.	5	each		
177.08	CO2 Sensors	3	each		
177.09	Room Differential Pressure (DP) sensor cum transmitter	5	each		
178	Supplying and laying of one number PVC insulated and PVC sheathed / XLPE armoured copper cable of 1.1 KV grade ISI marked of following size on surface or recess as required. (Acceptable make: Havells / Polycab / NICCO / RR Kabel / Skytone / Gloster / KEI / Universal)				
178.01	4 core x 16 sqmm (main panel to chiller unit)	50	metre		
178.02	3 core x 10 sqmm (for AHUs, pumps)	120	metre		
178.03	4 core x 6 sqmm (for heaters)	80	metre		
178.04	4 core x 1.5 sqmm (BMS)	500	metre		
178.05	2 core x 1.5 sqmm (BMS)	200	metre		
179	Supplying and fixing 125mm height U trap made from HEAVY DUTY PVC 25 mm dia for AHU drain to avoid back flow of air	5	each		

180	Variable frequency drives indepedently with bypass starter panel and also differential pressure gear with cabling from the sensor located on the duct to the the VFD for air handling units of following capacity motors including necessary fittings in enclosure and fixing accessories etc. complete as required. (Acceptable make: ABB / Mitsubishi / Siemens)				
180.01	For AHU : 5.5 KW	2	each		
180.02	For AHU : 2.2 KW	4	each		
180.03	Velocity sensor for Ducting	5	each		
181	SITC of Magnhelic gauges with GI box with SS cover plate and sensors with necessary tubing for HEPA filters at AHU as required. (Acceptable make: Dwyer / Sensocon)	6	each		
182	Steel structure works consisting of C channel, M.S. angles, full threaded rods for AHU supporting structure above false ceiling, supports for condensing units, ducting, piping supports etc.	500	kgs		
	(SECURITY CONTROL, FIRE & MISC)				
	ACCESS CONTROL SYSTEM				
183	Supplying, installation, testing and commissioning of Access control system for building security comprising of controller, E&M Locks, Reader, cabling, recording, display system, hardware and software support as required. There will be separate reader at two locations on 3 levels (Acceptable make Smart card reader / Access control software / Controller: Bosch / Honeywell / Nextwatch / GE-Casi / Lenel)				
183.01	Providing, Installation, Testing and Commissioning of Access Control System having biometric finger print, key pad, LED screen, USB port for communication and data back up. Stand alone type	2	Set		
183.02	Door interlock system with electromgnetic locks, control panel, push butttons all complete for 2 doors	2	Set		
	CCTV SYSTEM				

184	Providing, Installation, Testing and Commissioning of CCTV DVR 8 CHANNEL metal body, 4 Audio, AV output, 16 channel. Price shall inlcude voltage converter, Plug points for each camera (Acceptable make CCTV Camera / DVR / Matrix Switcher / Monitor: Honeywell / Pelco / Bosch / Sony / Vicon)	2	each		
184.01	Dome camera 2 MP rating HD quality	20	each		
184.02	Video Cable RG-11 for CCTV camera including	500	metre		
184.03	Display Monitor 32"	2	each		
184.04	Hard disk,1TB	2	each		
184.05	SMPS	2	each		
	FIRE DETECTION & FIGHTING SYSTEM				
185	INTELLIGENT FIRE ALARM SYSTEM: 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 and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))				
185.01	Two Loop Panel.	1	each		

186	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	36	each		
187	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	4	each		
188	Supplying, installation, testing & commissioning of fault isolator complete with base as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	2	each		
189	Supplying, installation, testing & commissioning of intelligent addressable photothermal detector complete with mounting base complete as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	85	each		
190	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed tempreature thermistor complete with base as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	30	each		
191	Supplying, installation, testing & commissioning of addressable fire control module complete as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	2	each		
192	Supplying, installation, testing & commissioning of addressable manual call point complete as required. (Acceptable make: (Johnson Control(IFC)/ Notifier (UL)/ Bosch(UL)/ Mircom (UL)/ Fike (UL))	4	each		

193	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. (Cable shall be red in colour) (Acceptable make: Havells / Polycab / NICCO / RR Kabel / Skytone / Gloster / KEI / Universal / Finolex)	1000	metre		
194	Providing and fixing ISI marked 4.5 kg carbondi-oxide type fire extinguisher in seamless MS cylinder complete with pressure gauge, discharge hose & horn, brass valve with initial full charge and base tray for keeping on floor etc. as required. (Acceptable make: Minimax / Lifeguard / Ceasefire / Agni / Impulse / Safex / Newage / Ansul / Eversafe)	6	each		
195	Providing and fixing ISI marked 4.0 kg clean agent type fire extinguisher in seamless MS cylinder complete with pressure gauge, discharge hose & horn, valve with initial full charge and base tray for keeping on floor etc. as required. (Acceptable make: Minimax / Lifeguard / Ceasefire / Agni / Impulse / Safex / Newage / Ansul / Eversafe)	6	each		
196	Supplying and fixing of illuminating type exit signage black/white anodized aluminium profile with SMD based LED illumination (12V DC) available in white / green / red, yellow / amber, Input Voltage 230V, Consumption not more than 5W of appropriate size, Protection IP-20, LEDs: SMD Led, Application on Wall / Ceiling of size 12 inch x 6 inch (approx) Lithium Ion battery Back Up 4-5 Hours etc as required. (Acceptable make: Agni / Hochiki / Bosch)	12	each		
197	SITC of Compressed Dry Air system consisting of skid mounted 3 HP air compressor Piston type, with electric motor, Air receiver of 200 Ltr, Maximum working pressure 12 kg /sqcm and flow 12 CFM, Air dryer 20 CFM. System shall have line filter 0.01 PPM (0.01 micron) for removal of solid particles, liquid water and oil aerosol. Line filter 0.003 ppm (Activated carbon filter) for removal of oil vapour and hydrocarbon odours having life of not less than 1000 working Hrs. (Suggested make: Chicago Pneumatic /	1	each		

	Atlas Copco / Ingersolrand)				
198	SITC of Industrial RO Plant 100 Litre/ hour capacity consisting of high pressure Pump, panel interconnecting piping, 1000 Litre PVC water storage tanks, interconnecting pipes suitable for operation on 230 V, 50 Hz, ac supply having TDS not more than 150 ppm with test certificate etc. complete as required. (Acceptable make: ION Exchaneg / Livepure / HUL / V-guard / Aqua Libra / Ozone)	1	each		
199	VALIDATION OF CLEAN ROOMS: DQ documents, Cleanroom validation, O&M manual, test certificate for equipment including following tests for two labs viz., Microbiology Lab and Sterility Lab: 1. Light Test for ducts 2. Air Balancing and velocity profile test 3. Pressure balancing Test 4. Practicle Count Test 5. Tempreture& RH test 6. HEPA Filter Integrity test	2	Lot		
200	Supplying, fixing, testing and commissioning of following valves, in the pipelines as per specifications. BALL VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for water circulation as specified. (Acceptable make: Audco / BDK / Intervalve / Kirloskar / Indian Valve International / Intervalve / Fouress Engineering Ltd)				
200.01	25 mm	6	each		
200.02	15 mm	10	each		
	GAS BASED TOTAL FLOODING FIRE SUPPRESSION SYSTEM				
	[a] The quantity given are indicative and tentative. Total designing of the system to be done by OEM before execution and to be got approved from the Engineer-in-charge. (Acceptable makes are: SIEMENS / ANSUL / CEASEFIRE [b] The entire installation including the fire alarm system integrated to the Gaseous Fire Extinguishing System, to be tested as per IS 15493.				
201	SITC of 120 Ltr Seamless Fire Protection Fluid storage Tank having	5	Each		

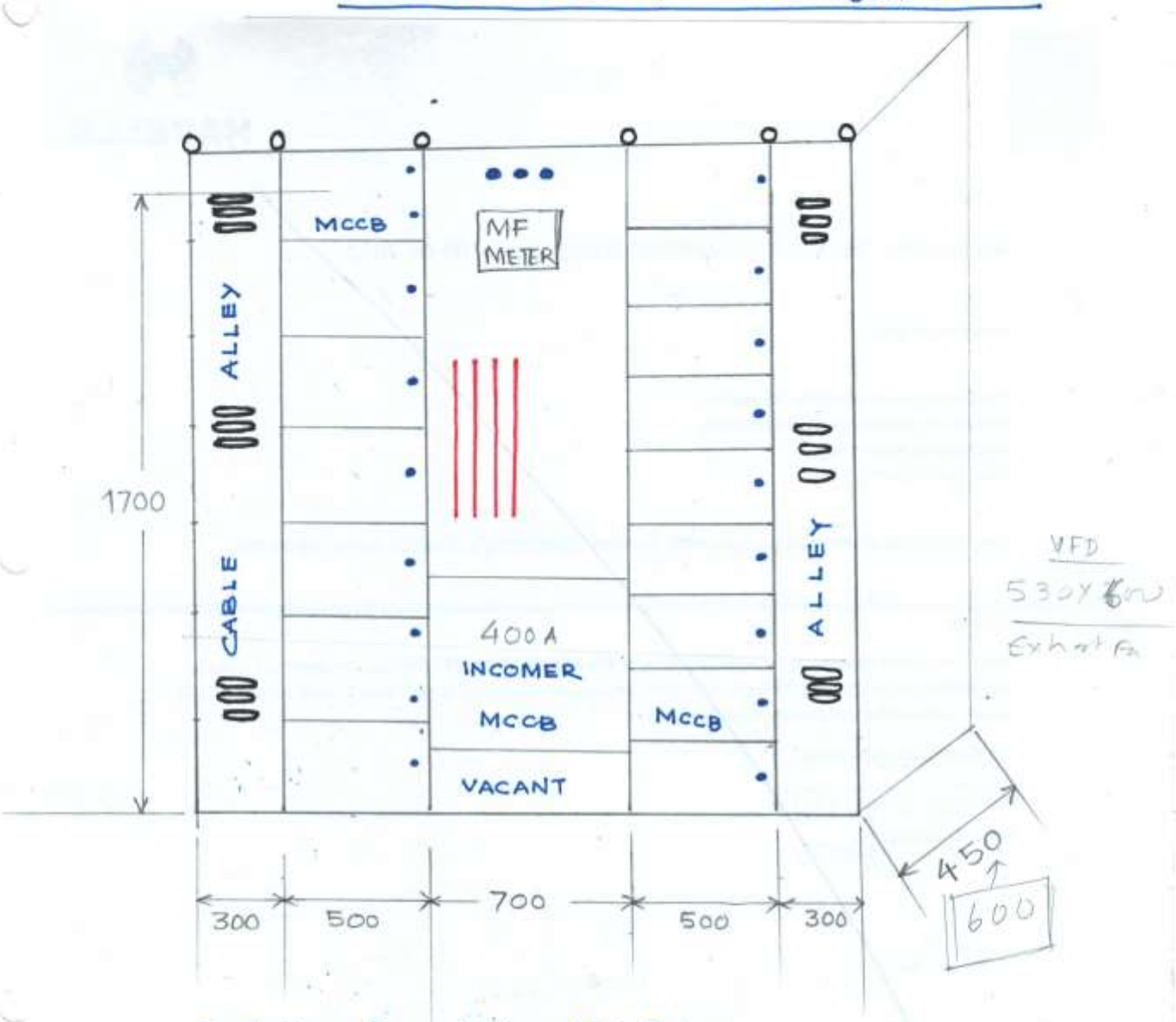
	Clean Agent Gas stored at 42 Bar Pressure in single cylinder assembly with required Valves suitable for storage of required quantity of agent, conforming to IS 7285 & IS 15493, certified in accordance to requirements of Chief Controller of Explosives, Nagpur, securely fastened to ensure stability with low pressure switch provision & safety burst disc.				
202	Supply and charge of Fire protection Fluid (FM 200) / HFC 227ea factory fill in kit in Kgs. The Gas calculation to be done by software. The calculation software should be VdS / LPCB approved.	450	Kg		
203	Supply Installation Testing and Commissioning Master cylinder and Slave cylinder kits with accessories. The complete kit must be VdS / LPCB approved (Single Cylinder)				
	a) Pr. Gauge + Low Pr. Supervisory Switch				
	b) Electromagnetic Actuator				
	c) Pneumatic Actuator				
	d) Flexible Discharge Hose				
	e) Flexible Actuation Hose				
	f) Manual Pneumatic Actuator				
	g) Other Required Accessories	5	Each		
204	Supply, Installation, Testing and Commissioning of Gas Release Nozzles, of Size according to Software Calculation.	12	Each		
205	Supply, Installation, Testing and Commissioning Sch 40 Seamless ASTM 106 gr B, piping with 3000 psi fittings, rigid supports with angles, 2 coats of Zinc primer & 3 coats of P.O red Paint etc. as required.				
205.01	80 mm dia	65	Metre		
205.02	50 mm dia	75	Metre		
205.03	40 mm dia	80	Metre		

206	Supply, Installation, Testing and Commissioning of MS Manifold and Cylinder Strap having any ISI Mark	1	Each		
207	Single Cross Zone (2 Zone) Detection & Release Panel with following features. Cross Zoning with timer Card (0-256 secs) or as per the UL guidelines for Maximum timer. Input for low pressure switch connection, Abort / Release inputs, Manual & Standby Modes, Solenoid output of 2.0 Amps, built in power supply, Battery backup of 24 AH.	1	Each		
208	SITC of Release Switch with Lock	1	Each		
209	SITC of Abort Switch	1	Each		
210	Supply and Installation of Warning Sign Board	1	Each		
	CAMC (Supplementary Agreement shall be formed for CAMC)				
211	Operation and comprehensive maintenance of BSL 3 & Clean rooms complete with HVAC system, lighting system, electrical installations, fire detection & firefighting system, building management system, plumbing / drainage etc. as per terms and conditions of the contract. [a] **One skilled person & one helper** shall be made available for two shifts (Morning & Evening) for 6 days during the whole maintenance period who shall be vigilant and take care of all equipment for proper functioning. [b] Attendance of deputed staff shall be maintained through manual as well as biometric machine to be kept in the fire control room and to be certified by the lab authority [c] any shortfall of attendance of staff will affect the billing proportionately [d] Latest Labour regulation shall be complied strictly. EPF & ESI contribution as applicable shall be borne by the contractor and the same document shall be produced in respect of the deputed staff before claiming bill. **No reimbursement shall be made by the IITD.** 1 Job means for a period of 01 month N.B.:: 1st year CAMC (except operation) to be done free of cost [to be reckoned from the date of commissioning of the entire installations to the satisfaction of the Engineer-in-charge]				

211.01	1st year (defect liability period) Free of cost (except operation)	12	Job		
211.02	2nd year	12	Job		
211.03	3rd year	12	Job		
211.04	4th year	12	Job		
211.05	5th year	12	Job		
211.06	6th year	12	Job		

1. No labour huts shall be allowed in IIT Campus, and nothing shall be paid extra on this account.
2. The contractor must visit the site of work /buildings before quoting theaters.
3. No labour to stay in IIT Campus nothing shall be paid extra on this account.
4. Site shall be available as per directions of Engineer in Charge.
5. The quoted rates of participating agencies shall be inclusive of GST.

TENTATIVE DRAWING OF DISTRIBUTION PANEL



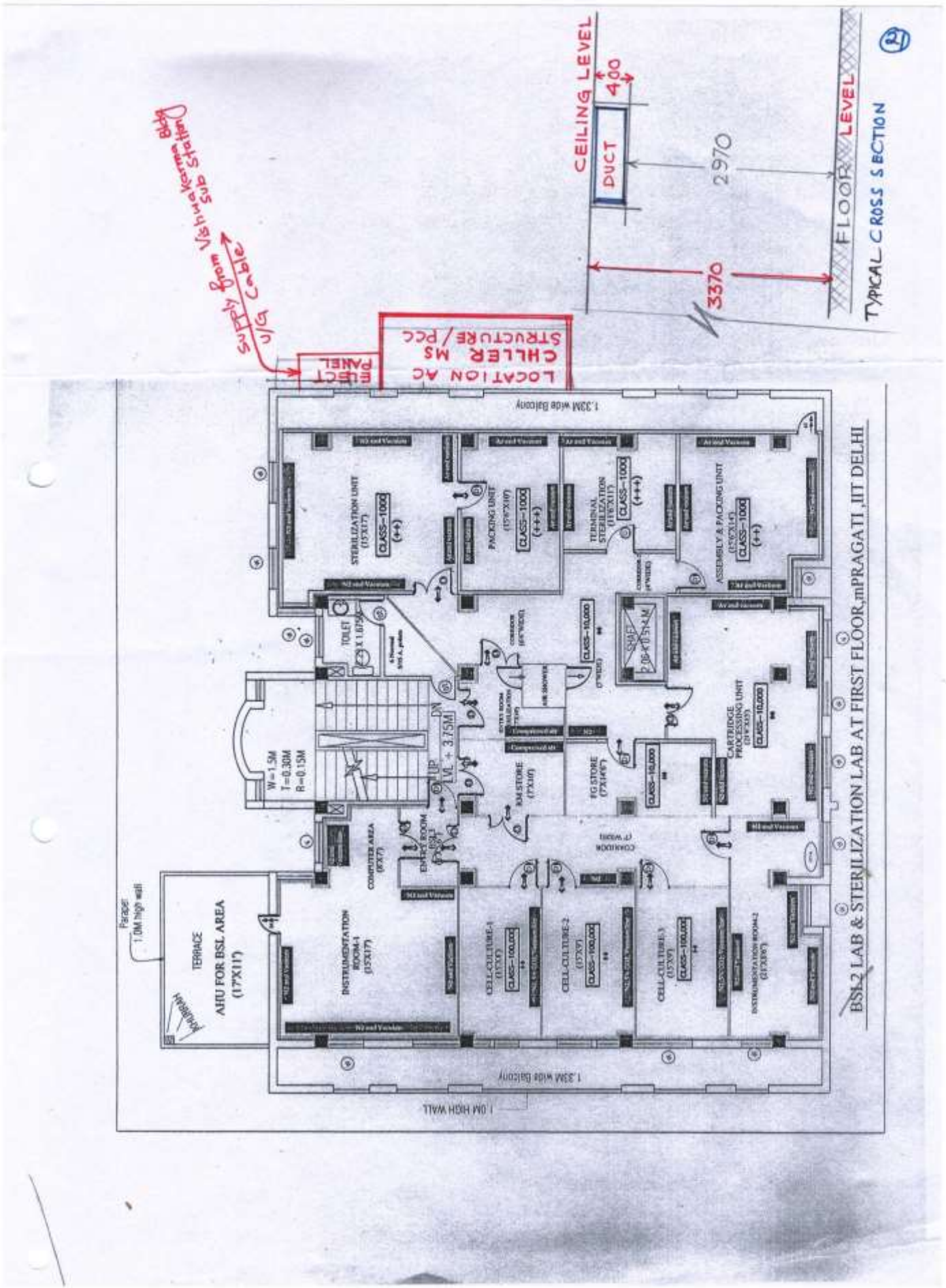
VFD
530 X 600
Exhaust Fa

Details of outgoing MCCBs:

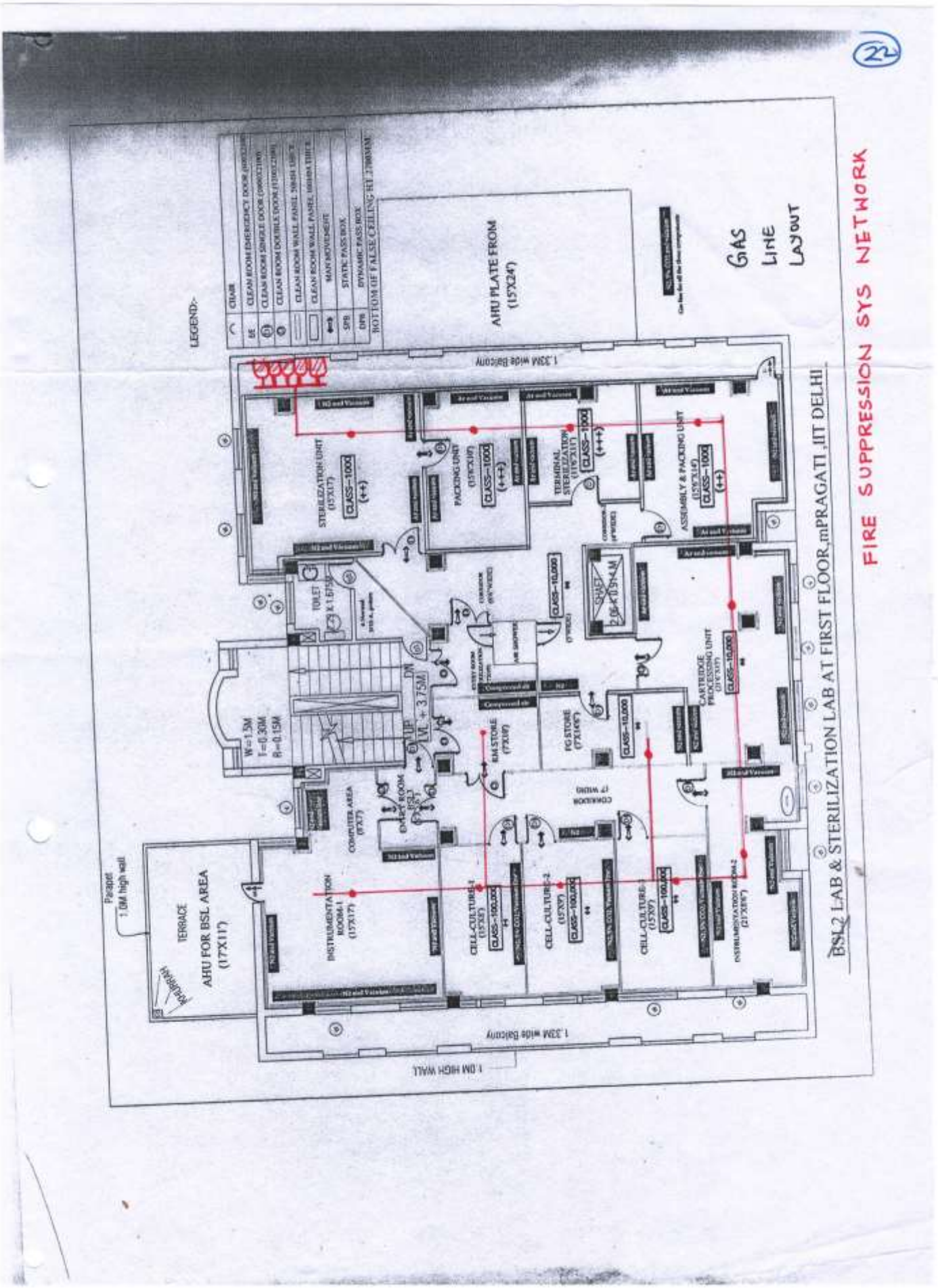
a) AC - 2 - 125A
b) AHU - 4 - 63A
c) DB - 6 - 63A
d) Pump - 2 - 32A
e) UPS - 2 - 63A
f) Spare - 2 - 32A

1910 X 2·15

C-----NIL I----NIL O--- NIL EE (ED-I) EE(CD-III) A.E.E(E) JE (C) JE(E)



C-----NIL I----NIL O--- NIL EE (ED-I) EE(CD-III) A.E.E(E) JE (C) JE(E)



C-----NIL I----NIL O--- NIL EE (ED-I) EE(CD-III) A.E.E(E) JE (C) JE(E)