



United Nations
Educational, Scientific and
Cultural Organization



क्षेत्रीय जैव प्रौद्योगिकी केन्द्र
Regional Centre
for Biotechnology

क्षेत्रीय जैवप्रौद्योगिकी केन्द्र

राष्ट्रीय महत्ता की संस्था, संसदीय अधिनियम द्वारा स्थापित
जैवप्रौद्योगिकी विभाग, भारत सरकार, यूनेस्को के तत्वावधान में

REGIONAL CENTRE FOR BIOTECHNOLOGY

An Institution of National Importance created through an Act of Parliament
Department of Biotechnology, Govt. of India, under the auspices of UNESCO

NCR-Biotech Science Cluster, 3rd Milestone, Gurgaon-Faridabad
Expressway, Village- Bhankri, Faridabad. (Haryana) Pin -121001.

TENDER DOCUMENT NO: RCB/OoC/NIT-02/19-20/BSL-3

(Two Bid system)

TENDER FOR

Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance.

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PART –A

(NOTICE INVITING TENDER AND PRE-QUALIFICATION CRITERIA)

Tender No.- *RCB/OoC/NIT-02/19-20/BSL-3*

Date: 01.01.2020

1.0 TENDER NOTICE

Online tenders are invited on behalf of the Executive Director, RCB under Two-Bid System (Technical bid and Financial bid) from reputed Contractors/Fabricators for the work : “ Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance” as per schedule, specifications and as per the terms and conditions mentioned in this tender document. **Off-line/physical bids shall not be accepted and no request will be entertained on any ground/reason.**

NOTICE INVITING TENDER

Website Url :	https://dbt.euniwizarde.com ; & https://rcb.res.in
Address:	Regional Centre for Biotechnology, NCR Biotech Science Cluster, 3 rd Milestone, Faridabad-Gurugram Expressway, Faridabad - 121001, Haryana
Contact Details	Chief Executive Officer, Office of Connectivity, RCB, Phone: 0129-2848535
Name Of Work	Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance
Earnest Money	Rs. 2,810,000/- needs to be deposited Online through e- tender portal.
Tender Processing fees	to be deposited online through e-tender portal.
Tender Uploading Date	02.01.2020 (Up to 03:00 P.M.)
Tender Closing Date & Time	24.01.2020; 03:00 P.M.
Date of Pre Bid Meeting	08.01.2020; 03:00 P.M.
Date of Opening of Technical bid	24.01.2020; 03:30 P.M.
Date of Technical Presentation	27.01.2020; 11.00 AM
Date of Opening of Financial bid	Will be notified/uploaded on DBT E-Wizard Portal website: https://dbt.euniwizarde.com .

2.0 PRE QUALIFICATION CRITERIA

1. The tenderer must be a Goods Service Tax (GST) registered firm / company. Tenderer must be a Manufacturer or Contractor. (sub-authorization/Joint-venture /partnership shall not be accepted).
2. The tenderer should have completed at least;

One similar work of value not less than **Rs. 1450.00 Lakhs**, in the last 7 years OR

Two similar works each of value not less than **Rs. 1090.00 Lakhs**, in the last 7 years OR

Three similar works of value not less than **Rs.725.00 Lakhs**, in the last 7 years ending on previous day of last day of submission of tender

(i.e. Similar work means Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance in any other Govt. Department universities, Biotech companies, Research institution & pharmaceutical laboratories or reputed private sector laboratories during last seven years). Self-attested copies of the completion certificates issued by the Executive Engineer/Head of department/ owner are required to be enclosed with the technical bid. The tenderer should also give complete details of the concerned authority such as name with designation, valid address, telephone/ mobile number with STD Code, etc. The completed works will be open to inspection and in case works is not up to the standard, the tender will summarily be rejected & no queries will be entertained in this regard. Refer “Annexure-IV”.

3. Average annual financial turnover should be at least Rs. 905.00 Lakhs during the immediate last three consecutive financial years.
4. The bidder shall have minimum solvency of Rs. 725.00 Lakhs. Solvency certificate from the Bidder’s Banker shall be submitted.
5. The firm should have not been blacklisted, debarred, declared non performer or expelled from any work of Union Government/ State Governments/ PSUs etc. during the last 5 years. They should also submit a self-declaration on its letter head for the same. The firm should also provide information regarding litigation / arbitration cases for the last five years as per Annexure-V.
6. The tenderer may visit / examine the site and its surrounding to assess the accessibility and asses the scope of work before submitting their offer. No claims later on shall be entertained. The tenderers shall arrange & maintain at his own cost all materials, T & P, Water and facility for workers for executing the work. Refer “Annexure-VI”.

3.0 Registration Process

1. Bidders to enroll on the e-Procurement module of the portal <https://dbt.euniwizarde.com> by clicking on the link “Bidder Enrollment”. Enrollment on the e-wizard Portal is free of charge.
2. The bidders to choose a unique username and assign a password for their accounts. 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 e-Wizard Portal.
3. Bidders to register upon enrolment their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.
4. 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. Foreign bidders are advised to refer “DSC details for Foreign Bidders” for Digital Signature requirements on the portal.
5. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

4.0 Tender Documents Search

1. Various built in options are available in the e-Wizard Portal which is further synchronizing with CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters include Tender ID, organization, location, date, value, etc.
2. 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 Online Portal.
3. 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 Online Portal to intimate the bidders through SMS / e- mail in case there is any corrigendum issued to the tender document.
4. 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.

5.0 Bid Preparation

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.
3. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
4. 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.
5. Copy of constitution or legal status of the bidder manufacturer / Sole proprietorship / firm / agency etc.
6. Experience Certificates for two or more similar works in last 07 years.

7. Copy of PAN Card / GST Registration.
8. Annual average Turnover of the agency should be less than Rs. 905.00 Lakhs per annum since last three years.
9. Brochure, original technical catalogue with detailed specification and picture of the product offered, if relevant.
10. Earnest Money Deposit: The bidder will be required to deposit the Earnest Money Deposit (EMD) for an amount of **Rs. 2,810,000/- through Online portal.**
11. EMD Fee are exempted for MSME/NSIC vendors etc. however Tender **processing fee has to be paid by all the vendors** as this fee is being charged by the Online Portal service provider directly.
12. The bidder should must have their registered office/ branch/ service Centre in Delhi-NCR.
13. Specification: The Contractor must confirm in writing that the goods supplied & installed by them shall be as per specification of goods and in case of any variation, the contract shall be liable to cancel immediately.

6.0 Bid Submission

1. Bidder to log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder to select the payment option as Online” to pay the tender fee/ EMD wherever applicable and enter details of the instrument.
4. A standard BoQ format (proforma of price bid) has been provided with the tender document to be filled by all the bidders. Bidders to note that they should necessarily submit their financial bids in the prescribed format and no other format is acceptable.
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, which cannot be viewed by unauthorized persons until the time of bid opening.
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.

7.0 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 e-Wizard Portal in general may be directed to the 24x7 e-Wizard Helpdesk. The contact number for the helpdesk is 011-

8.0 Terms and Conditions

Standard General Conditions of the Contract (GCC) form 7/8 (modified and corrected up to date) of CPWD shall be followed except otherwise stated elsewhere in the tender document.

- a) The Performance Security Deposit amount, 5% of tender value must be deposited by successful bidder within 10 days of award of work in the form of Demand Draft/Bank Guarantee/ FDR, from Nationalized/scheduled bank valid up to 6 Months from issue of work order, drawn in favour of “Executive Director Regional Centre for Biotechnology”, Payable at Faridabad.
- b) The Security Deposit @ 5% of work value will be deducted from the bill, which will be released after 12 months from date of completion of work.
- c) **Completion period of work:** 12 months from date of issue of work order.
- d) **Validity of the bids:** The bids shall be valid for a period of 75 days from the receipt of technical bid. This has to be so specified by the tenderer in the commercial bid.
- e) **Warranty / Guarantee:** Bidder must provide one (01) year comprehensive on-site warranty and it will commence from the date of the satisfactory installation / commissioning/handing over of goods, against the defect of any manufacturing, workmanship and poor quality of the components. No offer of the vendor will be accepted without warranty/ guarantee of their supplied/ installed goods.
- f) **Installation:** All the works shall be completed within 12 months from the date of issue of work order by the Centre. All the aspects of safe installation shall be the exclusive responsibility of the supplier. If the supplier fails to complete the work on or before the stipulated date, then a compensation for delay of work @ 1.5% per month of delay of work to be computed on per day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work. In case, the contractor completes the work ahead of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work X stipulated period/tendered cost), a bonus @ 1% (one per cent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subject to a maximum limit of 5% (five per cent) of the tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work.

9.0 Payment Terms: The pre-receipted paste of ₹ 1 revenue stamp on each bill in triplicate may be send to this office for payment after satisfactorily delivery & Installation of the goods. The bill should have full particulars of the items.

- a) No Payment shall be made in advance nor shall the loan from any or financial institutions be recommended on the basis of the order of award of work. The contractor shall submit the bill only after successfully Installation and commissioning. The case of issuing sanction and passing of bill for payment will be initiated on receipt of a pre-receipted invoice from the Contractor.
- b) No payment will be made for goods rejected.
- c) The performance guarantee amount/PBG will be released after 3 months from date of satisfactory completion and handing over of work.

- d) Security Deposit will be released after successful expiry of Defect Liability Period (12 months) which will commence from date of completion.
- e) EMD can be adjusted (released) against Security Deposit.
- f) The above rates must be inclusive of all applicable Taxes, handling and freight charges etc. & all applicable taxes shall be deducted at source from the passed amount of the contractor bill.
- g) The party shall be deemed to have visited to the site, understood the work prior to quoting of rates.
- h) Kindly mention the tender No. & due date, bidders full address, email address and contract number on the sealed envelope.

Technical Bid

CheckList of Certificates/Documents required to be submitted in the Technical Bid

If these documents are not submitted /conditions not met, the quotation shall be summarily rejected and no further correspondence, in this regard, shall be entertained.

S. No	Description	Technical Compliance (Yes/No)
1	Undertaking for adherence of Two-Bid System. (Non-violation of Two-Bid System)	
2	Clarification with regard to manufacturer or their accredited agent.	
3	Undertaking for the submission EMD/bid amount along with the bid.	
4	GST registration certificate	
5	Fall clause declaration	
6	Non-black listing declaration	
7	Declaration reg. Proprietorship/partnership/ Pvt. Limited firm	
8	Samples and their test reports, wherever, applicable	
9	Statement of financial standing from C.A. or Bank with address & proof of average turnover of the firm minimum 2 lac for the last 3 years	
10	Different quality samples, if submitted, for one item, that particular item will not be considered for evaluation.	
11	Undertaking for adherence & acceptance to all Tender Terms as per Schedule – ‘A’ (No Deviation of Tender Terms)	
12	The Firm/office/service Centre in Delhi-NCR (Address proof)	

(To be submitted on Company Letter Head).

AUTHORIZATION LETTER

We _____ (name of the bidder) hereby authorize Shri / Smt. _____
(name of the authorized person) to sign and submit the bid to RCB, Faridabad against their tender
No.: _____ Date: _____

Shri / Smt. _____ (name) is also authorized to negotiate the terms and conditions
pertaining to the said tender on behalf of M/s _____ (name of bidder). The
specimen signature of Shri / Smt. _____ (name) is appended below.

Specimen Signature:
Name: _____

The undersigned is authorized to delegate the authority on behalf of M/s _____
(name of bidder), as stipulated above.

For _____
(name of bidder)

TENDER ACCEPTANCE LETTER

(To be submitted on Company Letter Head).

Date:

The Executive Director
Regional Centre for Biotechnology NCR
Biotech Science Cluster,
3rd Milestone, Faridabad – Gurugram Expressway, Faridabad –
121001

SUB: Acceptance of Terms & Conditions of Tender.

Tender Reference No :-----

Name of Tender / Work: “Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance”.

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: www.rcb.res.in, <https://dbt.euniwizarde.com> as per your NIT / advertisement, given in the abovementioned website(s).
2. I / We hereby certify that I / We have read the entire terms and conditions of the tender documents (including all documents like annexure(s), schedules(s), etc.), which form part of the contract agreement and I / We shall abide hereby by the terms / conditions/ clauses contained therein.
3. The corrigendum(s) issued from time to time by your department / organization too has also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted / debarred by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject the bidder terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the fully said earnest money deposit absolutely.

Yours Faithfully,
Authorized Signatory.
(Signature of the Bidder, with Official Seal)

Fall Clause Declaration

Ref: File No.:-----

Date :

Name of Work : Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance.

This is to certify that we have offered the maximum possible discount to you in our Quotation No. _____ dated _____.

The prices charged for the stores supplied under Rate Contract should under no event be higher than lowest prices at which the party sells the items of identical description to any other Govt. organization/PSU's/Autonomous bodies/Pvt. Organizations during the period of contract failing which the "FALL CLAUSE" will be applicable.

In case, if the price charged by our firm is more, RCB Faridabad will have the right to recover the excess charged amount from the subsequent/unpaid bill of the supplier.

Seal and Signature of the Bidder

Note: This letter of authority should be on the letterhead of the quoting firm and should be signed by a person competent and having the power of attorney to bind the same.

NON-BLACK LISTING DECLARATION

FORMAT OF UNDERTAKING, TO BE FURNISHED ON COMPANY LETTER HEAD WITH REGARD TO
BLACKLISTING/ NON- DEBARMENT, BY ORGANISATION

UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT

To,
Executive Director
Regional Centre for Biotechnology NCR
Biotech Science Cluster,
3rd Milestone, Faridabad-Gurgaon Expressway, Faridabad

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

For -----

Authorized Signatory

Date:

PART – B

INSTRUCTIONS TO BIDDERS

- I. The Tenderer should sign and stamp each page of the tender documents.
- II. The Tenderer may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is however, advised not to furnish superfluous information. No information shall be entertained after submission of tender documents unless it is called for by the RCB.
- III. Any information furnished by the tenderer found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering/taking up of work in RCB.
- IV. Any variation in the terms and conditions of the general/special conditions for payment, tender fees, security deposit, etc. is not acceptable to RCB and such tenders will be rejected straight away.
- V. RCB reserves the right to award the contract in full or in part as per the decision of the competent authority
- VI. RCB is not responsible for any delay in receipt of the application / receipt of tender documents etc. It is the responsibility of tenderer to make sure that the tender is uploaded in time.
- VII. The contractor has to mention contact no. and the person to be contacted in case of any query.
- VIII. The tenderer shall attach the copy of PAN Card, Goods and Services Tax Registration.
- IX. Acceptance of tender shall rest with the RCB, which shall not be bound to accept the lowest tender and reserves to itself the right to reject any or all tenders received without assigning any reasons therefore.
- X. Incomplete tenders are liable to be rejected.
- XI. Any bid received after the deadline for submission of bids, will be rejected.

Engineer in-charge

Signature of tenderer with seal & date

PART – C

GENERAL CONDITIONS OF CONTRACT

6.0 CONTRACT DOCUMENT

- 6.1 The terms ‘Contract document’ means the Notice Inviting Tender, Tender form, Instructions to bidders, Special Conditions, General Conditions of Contract, Specifications, Price Schedule and Drawings and Articles of Agreement.
- 6.2 “RCB” shall mean Regional Centre for Biotechnology with its present office at 3rd mile stone Faridabad - Gurgaon Expressway Haryana 121001.
- 6.3 The Contractor shall mean the sole proprietor, or firm or company whether incorporated or not, undertaking the works and shall include the legal representative or such individual successors, heirs, administrators or assignees of such sole proprietor, firm or company, as the case may be or the persons composing such firm or company of the successors of such firm or company and the permitted assignees of such individual or firms or company.
- 6.4 Client shall mean the officer designated by the Executive Director, RCB who shall supervise and shall be in charge of the work, and issue necessary instructions at site, on behalf of RCB.
- 6.5 Contractor shall strictly conform to the specification, price schedule, general and special terms and conditions, if any, and any other matter contained in the tender documents issued by the RCB.
- 6.6 Failure of the successful contractor to lodge the required performance guarantee shall constitute sufficient grounds for the annulment of the Award and forfeiture of the Bid Security, in which event the RCB may make the Award to the next lowest evaluated tenderer or, if there are no other tenderer, call for new bids.
- 6.7 In the event of breach of contract by the contractor, the performance guarantee will liable to be forfeited by RCB.
- 6.8 The contractor whose tender is accepted will also be required to furnish by way of **Security Deposit** for the fulfilment of his contract, an amount equal to **5% of the actual work done value**. The Security deposit will be collected by deductions from each running bills as well as final bill of the contractor at the rates mentioned above.
- 6.9 The Security Deposit will be released after the expiry of the Defects Liability Period of work (i.e. 12 Months) subject to satisfactory fulfilment of its obligations by the contractor under the work.

7.0 DRAWINGS

- 7.1. On the award of work order under this work, the contractor shall immediately proceed with the preparation of drawing according to the work order to be carried out. Two sets of such working drawings including make of all items shall be submitted to RCB for its approval to ensure that work will be carried out in accordance with specification and proposed drawing including such changes as may have been mutually agreed upon. All the drawing shall be received by the Client for his approval within 07 days of award of work. Also, the contractor must furnish detailed bar chart showing the various activity w.r.t. time and must organize co-ordination meeting at the site to review the progress of work.

8.0 TIME FOR COMPLETION OF CONTRACT

- 8.1. Time for completion of total work shall be 12 months from the date of award of work or approval of drawing.

9.0 TIME AND EXTENSION FOR DELAY

9.1. If in the opinion of the Client the works is delayed by:

- a. Force majeure.
- b. Reasons of civil commotion, location combination of workers on strike or lock-out affecting any of the building trades.
- c. In consequence of the contractor for not having received in due time necessary instructions from the Client for which he shall have specifically applied in writing.
- d. Reasons of Client instruction:

The Client shall make a fair and reasonable extension of time for completion of the contract works. Then upon the happenings of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-charge but shall nevertheless use constantly his best endeavour's to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Client to proceed with the works.

9.2. Request for rescheduling of date of completion and extension of time, to be eligible for consideration, shall be made by the Contractor in writing immediately after the happenings of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

9.3. In such case, the Client may give a fair and reasonable extension of time and reschedule the completion date. Such extension shall be communicated to the Contractor by the Client in writing within 1 month of the date of receipt of such a request. Non- application by the Contractor for extension of time shall not be a bar for giving a fair and reasonable extension by Client and this shall be binding on the Contractor.

10.0 COMPENSATION FOR DELAY

10.1. Time is the essence of the contract. The time allowed for the work shall be strictly followed. If the supplier fails to complete the work on or before the stipulated date, then a compensation for delay of work @ 1.5% per month of delay of work to be computed on per day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work. The decision of Client about the delay shall final and binding.

10.2. If the contractor after award of work fails to deliver any item / part of the work within the time period allowed, RCB reserves the right to remove that particular component from the scope of main contractor and get it done through some alternative resources at the cost of main contractor.

11.0 TECHNICAL SPECIFICATIONS AND STANDARDS

(i) The materials & services to be provided by the tenderer under this contract shall conform to the technical specifications as laid down under this tender document and should be carried out to the complete satisfaction of the Client.

11.1 WORK OPEN TO INSPECTION

(i) All works under or in course of execution or being executed in pursuance of the contract shall at all times be open to inspection and supervision by the Client and/or his authorized subordinates, and the Contractor shall at all times during the usual working hours, and at all other times at which

reasonable notice of the intention of the Client or his subordinate to visit the works shall have been given to the contractor, either himself be present to receive order and instructions, or have a responsible agent duly accredited in writing, present for that purpose. Order given to the contractor's agent shall be considered to have the same force as if the same had been given to the Contractor himself.

- (ii) All works shall be executed subject to the approval in all respect of the Client who shall be entitled to direct at what point or points and in what manner these are to be commenced, and carried out from time to time.

12.0 INSPECTION, TESTING AND QUALITY CONTROL

- 12.1. RCB and/or its nominated representative(s) will, inspect and/or test the work / material to confirm their conformity to the tender specification at no extra cost to the RCB. The Inspection Authority to be designated by the RCB shall specify what inspections and tests are required and where they are to be conducted. The RCB shall notify the contractor in writing in a timely manner of the identity of any representatives retained for these purpose. All work / material shall be tested as stipulated in the latest specification of, Govt. /institutes.
- 12.2. The inspections and tests may be conducted on the premises of the tenderer or its subcontractor(s) or at the point of delivery. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the Inspectors at no charge to the RCB.
- 12.3. The representative of Centre shall inspect or test the items, which fail to conform to the specifications. The RCB may reject such items and the tenderer shall replace the rejected items, at no cost to the RCB, within a stipulated time period.
- 12.4. The RCB's right to inspect, test and where necessary, reject the items after its arrival at the final destination shall in no way be limited or waived by reason of the items having previously been inspected, tested and passed by RCB or its representatives.
- 12.5. Nothing shall in any way release the tenderer from Guaranty or other obligations under the contract.
- 12.6. The RCB shall be the final authority to reject full or any part of the item which is not conforming to the specifications and other terms & conditions.
- 12.7. No payment shall be made for rejected items. Rejected items must be removed by the contractor within one weeks of the date of rejection at their own cost and replace immediately. In case these are not removed, these will be auctioned at the risk and responsibility of the contractor without any further notice.

13.0 PACKING AND MARKING

- 13.1. The packing of items to be supplied directly at site, should be strong and durable enough to withstand, without limitation, the entire journey during transit including trans-shipment (if any), rough handling, open storage etc. without any damage, deterioration etc. As and if necessary, the size, weights and volumes of the packing cases shall also take into consideration, the remoteness of the final destination of the supplied Items and availability or otherwise of transport and handling facilities at all points during transit up to final destination as per the contract.
- 13.2. The quality of packing, the manner of marking within & outside the packages and provision of accompanying documentation shall strictly comply with the requirements as per site condition. In case the packing requirements are amended due to issue of any amendment to the contract, the same shall also be taken care of by the tenderer accordingly.

13.3. Packing instructions:

The tenderer shall make separate packages for each consignee (in case there is more than one consignee mentioned in the work order) and mark each package on three sides with the following with indelible paint of proper quality:

- a. Contract number and date
- b. Brief description of items including quantity
- c. Packing list reference number
- d. Country of origin of supplied items
- e. Consignee's name and full address
- f. Tenderer's name and address

14.0 WATER & POWER FOR FABRICATION

RCB shall provide power & water at one point for the proper execution of the work under normal circumstances if available at site. Contractor shall be liable to pay for power charges for the actual consumption at the rates notified by DHBVN from time to time. In case RCB is not in a position to supply the water and / or power, the contractor will make his own arrangement so that the work does not suffer. However, no claim of the contractor whatsoever shall be entertained by RCB on this account.

15.0 CO-ORDINATION

Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the contractor. Proper co-ordination with other agencies will be contractor's responsibility. In case of any dispute the decision of RCB shall be final & binding on the contractor.

16.0 CLEARANCE OF SITE

The contractor shall have to remove all waste (Malba) and other unwanted material from site of work before handing over the installation to the RCB. The work shall not be treated as complete in all respects unless these requirements are fulfilled by him. In the event of contractor failing to do so, the RCB shall have right to get the site cleared at the cost of contractor.

17.0 COMPLIANCE WITH LABOUR LAWS AND OTHER LAWS

The Contractor shall abide by the Contract Labour, (Regulation and Abolition) Act 1970, and Contract Labour (Abolition and Regulation) Central rules 1971. The Contractor shall comply with the provisions of Payment of Wages Act 1936, Minimum Wages Act 1948, Employees Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act and other applicable regulations and other labour laws Contract Labour as mentioned below as applicable amended up to date:

- 1) Industrial Disputes Act.
- 2) Industrial Establishment (Standing orders) Act.
- 3) Trade Unions Act.
- 4) The Factors Act.
- 5) Employees Provident Fund & Miscellaneous Provision Act.
- 6) Employees State Insurance Act.

- 7) Workmen's Compensation Act.
- 8) Payment of Gratuity Act.
- 9) Minimum Wages Act.
- 10) Payment of Wages Act.
- 11) Equal Remuneration Act.
- 12) Payment of Bonus Act.
- 13) National / Weekly Holiday Act.
- 14) Inter-state Migrant Workmen (Regulation of Employment and of service conditions) Act.

In case, RCB is made liable to pay any amount to any third party due to non-observance of any of the statutes/law as mentioned above, the same will be adjusted from any future payment due payable to the contractor or from performance s guarantee available with RCB.

18.0 SAFETY CODE, LABOUR CAMPS SANITARY ARRANGEMENTS

The Contractor shall follow the Safety Code and Model Rules for the Protection of health and Sanitary arrangement for Workers as prescribed by the CPWD as regard to safety code and first aid facilities. In case, the Contractor fails to make the aforesaid arrangement, the Executive Director RCB shall be entitled to do so at the risk, responsibility and cost of the Contractor. Determent panel and legal action shall be taken in the event of any failure on the part of the contractor to discharge the safety obligations which are laid down in the contract.

19.0 PAYMENT OF WAGES BY THE CONTRACTOR

The Contractor shall directly pay to labour employed by him and shall be solely responsible for following all Government rules and regulations applicable for employment.

20.0 REMOVAL OF PERSON

The Client may require the Contractor to remove from the site of the work any person or persons in the Contractor's employment who may found to be incompetent or due to misconduct and the Contractor shall forthwith comply with such requirement / instructions.

21.0 WATCH AND WARD

The contractor shall be responsible for watch and ward of all the works and various materials till complete handing over the works to the RCB.

22.0 GUARANTEE CLAUSE

22.1 The contractor shall guarantee that all the material and components supplied and installed by him shall be free from defects due to faulty, material or workmanship.

22.2 The charge and any shortcomings found in the materials as specified shall be removed at no extra cost. The contractor shall provide the necessary personnel and tools for fulfilling the above guarantee. Period of the guarantee shall be (12) twelve months from the date of handing over the complete installations to RCB. During this period any or all components found to be defective shall be replaced or repaired free of cost.

22.3 If the defects are not removed within a reasonable time the RCB may arrange to do at the contractor's risk and cost, without prejudice to any other rights.

22.4 After Sales Service: After sales service should be made available on 24 (hrs) X 7 (days) X 365 (days) basis. Complaints should be attended promptly and properly within 24 hrs. The service should be provided directly by the tenderer or his authorized agent whose details shall be provided

to the RCB/consignee within one month from the date of award of contract.

23.0 PRICE FALL CLAUSE

If at any time during the validity of the work the tenderer supplies such equipment's/stores as are under this tender enquiry, to any other organization at a price lower than the price quoted under this contract, he shall forthwith reduce the price payable under this tender for the equipment's/ stores being supplied from the date of coming into force of such reduction, the price of equipment's/ stores shall stand correspondingly reduced.

In case of increase in market prevailing prices of the materials if claimed by the supplier, no price escalation will be payable.

24.0 OTHER CONDITION TO BE ADHERE BY TENDERER

24.1 The work is to be carried out as per the specifications in the tender and relevant standards of CPWD and in line with the BMBL guidelines and as per the WHO Geneva, Laboratory Biosafety Manual.

24.2 The material should be got approved before start of work and open to site inspection

24.3 The contractor shall clear the site after completion of work in all respects.

24.4 All the material used shall be one of the stipulated makes as per approved list of material.

24.5 The contractor shall comply with safety codes for Fire precaution, health requirement, scaffolds & ladders etc.

24.6 No T & P shall be issued by RCB.

24.7 All dismantled material for which credit is not being given in the tender shall be handed over to the site engineer stored at proper place.

24.8 Contractor shall be fully responsible for safety of his workers and in case of any accident / mishap the entire responsibility shall be on the contractor.

24.9 The work shall be executed without any loss / damage to the RCB's properties.

24.10 The picture provided in the specification is for illustration purposes only and not to scale.

25.0 INTERPRETATION

25.1 **In interpretation of specifications**, the following orders shall be as followed: -

- a) Drawings
- b) Technical Specification
- c) Special Conditions of contracts
- d) General condition of contract

25.2 Matters not covered by the specification given in this contract as a whole shall be covered by relevant and latest Indian Standard codes/ C.P.W.D code. If such codes on a particular subject have not been framed, the decision of the owner/ owner's representative shall be final and binding.

26.0 TERMINATION

26.1 Being a standing offer, the work can be terminated from either side by serving one month's notice to the other party. However, all the orders placed before the date of serving of such notice

will be valid and binding on both the parties. Further, the orders placed under the work can also be terminated individually and the same will not lead to automatic termination of work unless so specified.

26.2 Termination of work order.

26.3 Notwithstanding anything elsewhere provided herein and in addition to any other right or remedy available to RCB under the work or otherwise including right of RCB to claim compensation for delay, RCB may, without prejudice to his right against contractor in respect of any delay, bad workmanship or otherwise or to any claims for damage in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this work or otherwise and whether the date for completion has or has not elapsed by intimation in writing, absolutely determine and terminate the Contract.

Default or failure by the contractor in any of the under mentioned cases, including but not limited to the following shall be the basis of taking action under this clause of the contract.

- 1) Failure to provide at the job site, sufficient labor, material, equipment, machinery, and / or facilities, required for the proper and / or due execution of the work or any part thereof:
- 2) Failure to execute the works or any of them in accordance with the contract.
- 3) Disobedience of any order or instruction of the Site Engineer and /or Engineer-in-charge.
- 4) Negligence in carrying out the work or carrying out of work found to be unsatisfactory by the Client.
- 5) Abandonment of the works or any part thereof.
- 6) If the Contractor misconduct in any manner.
- 7) Delay in execution of work, which in opinion of Client shall delay the completion of work beyond the stipulated date of completion.
- 8) Distress, execution, or other legal process being levied on or upon any of the Contractors goods and /or assets.
- 9) Death of Contractor (if an individual)
- 10) If the Contractor or any person employed by him shall make or offer for any purpose connected with the contract any gift, gratuity, royalty, commission, gratification or other inducement (whether money or in any other form) to any employee or agent to RCB.

The decision of the Executive Director, RCB as to whether any of the events/ contingencies mentioned in aforesaid clauses entitling RCB to terminate the contract has occurred shall be final and binding upon the Contractor. The jobs left however by the Contractor shall be got done at his risk and cost through the other agencies and the Contract shall be determined accordingly.

9.1.5. FORCE MAJEURE

9.1.5.1 The right of the contractor to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including but not limited to acts of god, or of the public

enemy, restraints of a sovereign state, floods, unusual severe weather conditions.

9.1.6. ARBITRATION

9.1.6.1 Any claim, dispute or difference arising out of or in connection with this agreement and which cannot be settled by mutual consultations, shall be referred to sole Arbitration or an Arbitrator to be appointed by mutual consultations. The award of the Arbitrator shall be final and binding between the parties as per the terms and conditions of the Agreement to be executed on award of contract. The Arbitration proceedings shall be governed by the Arbitration and Conciliation Ordinance dated 26th March, 1996 and shall be conducted in Haryana

APPLICATION FORM

[NOTE: On the letterhead of the applicant including full postal address, email address, telephone no. and fax no.]

Date: _____

The Executive Director
Regional Centre for Biotechnology NCR
Biotech Science Cluster
3rd Mile stone Faridabad–
Gurgaon Expressway Faridabad
121001.

Sirs,

1. Being duly authorized to represent and act on behalf of (hereinafter referred to as “the Applicant”) and having reviewed and fully understood all the pre- qualification information provided, the undersigned hereby applies to be pre-qualified by yourselves as a tenderer for award of work(s) for Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance.
2. Attached to this letter are copies or original documents defining:
 - (a) the applicant’s legal status
 - (b) the principal place of business
 - (c) the place of incorporation (for applicants who are corporations) or the place of registration and the nationality of the owners (for applicants who are partnerships or individually owned firms)
 - (d) Annexure no. II to IX.
3. Your agency and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this application, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This letter of application will also serve as authorization to any individual or authorized representative or any institution referred to in the supporting information, to provide such information deemed necessary and requested by you to verify statements and information provided in this application, or with regard to the resources, experience, and competence of the Applicant.
4. Your agency and its authorized representatives may contact the following persons for further information on general, personnel, technical and financial enquiries.

Contact 1: Name, email and Phone no.

Contact 2: Name, email and phone no.

5. This application is made with the full understanding that:
- (a) Bids submitted by applicants will be subject to verification of all information submitted at the time of bidding
 - (b) Your agency reserves the right to:
 - amend the scope and value of the contract / bid under this project; in such event, bids will only be called from pre-qualified bidders who meet the revised requirements; and
 - reject or accept any application, cancel the pre-qualification process, and reject all applications without assigning reasons or incurring any liability thereof; and
 - (c) Your agency shall not be liable for any such actions and shall be under no obligation to inform the applicant.
6. The undersigned declares that statements made and the information provided in the duly completed application are true and correct in every detail.

Signed and sealed, Name

For and on behalf of.....

GENERAL INFORMATION

	Name of Firm	
	Head office address	
	Telephone	Contact No
	Fax. No.	Email ID
	Place of Incorporation registration	Year of incorporation/registration

Signature and seal of the Authorized Signatory of the bidder

FINANCIAL CAPABILITY

Financial Year	Annual Turn Over in Indian Rupees (or equivalent to Indian Rupees) as per Audited Balance Sheet
2016-17	₹
2017-18	₹
2018-19	₹

NOTE: The above data is to be supported by audited balance sheets

1. Attach copies of audited balance sheets duly certified by the chartered accountant for all three years (**2016-17, 2017-18 & 2018-19**). Audited Balance sheet should mention the membership number of chartered accountant issued by ICAI along with full address.
2. Attach recent solvency certificate from bankers. The certificate should be not more than one-year-old from the date of submission of bid.

Signature and seal of the Authorized Signatory of the bidder

EXPERIENCE OF COMPLETION OF PROJECTS OF SIMILAR NATURE & COMPLEXITY

(During last seven years ending last day of month previous to the one in which applications are invited)

Sl. No.	Name of work/project and location	Owner or sponsoring organization	Cost of work in Lacs	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Name and address/ telephone number of officer to whom reference maybe made	Remarks

NOTE: Please attach supporting documents (completion certificates along with order copies) for the above information

Signature and seal of the Authorized Signatory of the bidder.

LITIGATION DETAILS (COURT CASES/ARBITRATION)

Year	Name of the work	Name of the client with address	Title of the court case/ Arbitration	Detail of the Court/ Arbitrator	Status pending/ decided	Dispute Amount (Current Value, the equivalent) in case of court cases/arbitration	Actual awarded amount (Rs.) in decided court case/ arbitration

Signature and seal of Authorized Signatory of bidder

CERTIFICATE FOR SITE INSPECTION

Certified that we..... (Name of tenderer) have visited the site on dated..... and assessed the nature and amount of work involved before submitting our offer. We will be able to complete the works within the stipulated time and also certified that we will be able to supply the material/executing the work as per specification to suit the site conditions.

Address of site: -

Regional Centre for Biotechnology,
NCR-Biotech Science Cluster, 3rd Milestone,
Faridabad-Gurugram Expressway, Faridabad
121001, Haryana.

Signature of Tenderer with Seal & Date

FORM OF AGREEMENT

This Agreement made on the _____ day of _____ 20____ between Regional Centre for Biotechnology (RCB), Faridabad-Haryana for entering into the work(s) for “Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster, Faridabad on Turnkey Basis and its Day to-day operations and Comprehensive Maintenance”(hereinafter called "The Employer") who enters into this Agreement of the one part and M/s..... (hereinafter called "The Contractor") of the other part.

Whereas the Employer is desirous that certain works should be executed by the Contractor, viz _____ ("the Works") and has accepted a Bid by the Contractor for the execution and completion of the works and the remedying of any defects therein.

Now this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Award;
 - (b) The said Bid;
 - (c) The General Conditions of Contract;
 - (d) Prequalification document
 - (e) Instructions to Tenderers and Specific Conditions of Contract;
 - (f) The Specification;
 - (g) The Drawings;
 - (h) The Priced Bid
 - (i) Any other relevant documents referred to in this Agreement or in the aforementioned documents
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of this work.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or only such other sums as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, Sealed, and Delivered by the Said

Binding Signature for and on behalf of
RCB-Faridabad Binding Signature of
Contractor _____

In the presence of:-

Witness (1):

Witness (2):

SCHEDULE OF CONTRACT

1.	Earnest Money to be deposited	Rs. 2,810,000/-
2.	Time of Completion	12 months from the date of award of Contract
3.	Compensation for delay	1.5% per month to be calculated on per day basis.
4.	Defect Liability Period	12 months from the date of completion and handing over of work.
5.	Terms of Payments	30 days after submission of bill invoice and required documents, warranty certificate etc.
6.	Schedule of Payment	As per Table A given below (Part of Annexure VIII)

Table A

Quarter	Maximum Cumulative Payment Limit (% of Contract)	Remarks
0	10%	Mobilization advance shall be released in 2 installments of 5% each against Bank Guarantee of amount equivalent to 110% of Mobilization Advance. Mobilization advance shall be at the interest of 10% per annum. Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first ten per cent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.
1	50%	On supply of the item/material/equipment at site.
2	70%	On completion of construction/erection and installation of item/material/equipment at site.
3	75%	On completion of Testing and Commissioning
4	80%	On completion of validation and handing over
		20 % of the contract value is reserved for the cumulative operation and maintenance during the defect liability period of one year. This amount shall be released in equal quarterly installment during the defect liability period.

Client

1.0 ELIGIBILITY CRITERIA

The firm should have successfully completed at least one such facility or an equivalent bio-containment facility and must have in-house personnel having experience of setting up such facility in India. The firm should have proven track record of successful operation and maintenance services of three such high containment lab facilities over the **last seven years**. The firm should have an average annual turnover of at least Rs. 905.00 Lakhs in the last three years. Relevant document satisfying the above eligibility conditions on original client/company letter head must be submitted along with the tender document. Experience pertaining to Commissioning and Installation of either clean room or bio-safety level 2 and modular bio-containment lab facility will not be considered.

2.0 CRITERIA FOR EVALUATION OF THE TECHNICAL AND FINANCIAL BID

This is a turn-key project that includes Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of BSL-3 Facility at the NCR Biotech Science Cluster in Faridabad. All offers should be submitted in two sealed parts: Technical and Price Bids, separately. The proposal should include details of the technical design based on the proposed layout and bill of quantities (BOQ). Interested contractors should visit the site for physical check and status of the site condition. All eligible vendors will be called for a thirty-minute presentation. The presentation should include a brief introduction, plan for project execution, timeline and new suggestions that might include a better alternate layout plan/BOQ for a better utilization of the limited space and optimum running costs. If needed, the revised layout and/or BOQ would be circulated for submission of amendment to financial bids. The bids shall be ranked on the basis of combined weighted score for technical and financial bids. The technical and financial bids shall enjoy weightage in the proportion of 60:40 i.e. 60% for the technical bid and 40% for the financial bid.

- 3.0. (i) **Criteria for evaluation of the technical bid:** The technical bid marked as envelope 1 will be opened first and will be evaluated on the following parameters:

	Attributes	Evaluation
1.	Financial strength	(20 marks)
	(i) Average annual (last three years) turnover of Rs. 905.00 Lakhs per year 16 marks	(i) 60% marks for minimum eligibility criteria
	(ii) Solvency Certificate of Rs. 725.00 Lakhs 04 marks	(ii) 100% marks for twice the minimum eligibility criteria or more
		In between (i) & (ii) – on pro-rata basis for similar works.
2.	Experience in similar class of work	(20 marks)
i	One similar works contract of Rs. 1450.00 Lakhs or more	(i) 60% marks for minimum eligibility criteria of works
	or	(ii) 100% marks for twice the minimum eligibility criteria or more
ii	Two similar works contract of Rs. 1090.00 Lakhs or more	In between (i) & (ii) – on pro-rata basis
	or	For similar works
iii	Three similar works contract of Rs.725.00 Lakhs or more	

3.	Performance on timely attending completion. Please attach completion certificate of timely/satisfactory commissioning from minimum two clients. One of which should be from a PSU/Govt. organization.	(20 marks) (i) 60% marks for minimum eligibility criteria of works (ii) 100% marks for twice or more the eligibility (iii) In between pro-rata
4	Local office/service centre in NCR with minimum two Service Engineers if not	(10 marks) nil -
5.	Performance of works (Quality) Based on report/visit/ presentation	(30 marks)
	(i) Excellent	30
	(ii) Very Good	20
	(iii) Good	15
	(iv) Fair	10
	(v) Poor	0

Total = 100 marks

The financial bids of only those successful bidders who obtain minimum 70/100 in Technical evaluation will be opened for further consideration.

- (ii) **Financial bid evaluation:** - The bidder quoting lowest rate will be awarded full points out of 30. Other will be awarded pro-rata.

Combined scores of respective bidders shall be obtained by sum of their respective technical bid scores (out of 60) and their respective Price (financial) bid scores (out of 40). The Tenderer who obtains the highest combined score will be awarded the contract.

4.0 General Conditions:

- 4.1** The bid of any bidder who has not complied with one or more of the conditions will be summarily rejected.
- 4.2** Conditional bids will also be summarily rejected.
- 4.3** The technical bids will be evaluated by the expert technical committee of the Institutes on the basis of technical bid and technical specifications. The authority for the acceptance of the tender rests with RCB.
- 4.4** Financial bids of only technically qualified bidders will be opened for evaluation in the presence of qualified bidders.

However, RCB shall not be bound to accept the lowest or any other tender or to assign any reason for non-acceptance or rejection of a tender. RCB reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender paper.

Even though any bidder may satisfy the above requirements, he/she would be liable to disqualification if he/she has:

- Made misleading or false representation or deliberately withheld information in the forms, statements and enclosures required in the eligibility criteria document
- Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/ weaknesses etc.

5.0 SCOPE OF WORK

The scope of work includes design, supply, installation, testing, commissioning (DSITC) and validation-documentation of the BSL-3 Facility on a turnkey basis and its day-to-day on-site operation and comprehensive maintenance in accordance with the Fifth edition of BMBL Guidelines issued by the U.S. Department of Health and Human Services, CDC, USA', NIH and WHO.

The scope under the contract shall cover and include the following works to be executed by the Contractor on 'Turnkey Basis':

- 5.1** Preparation and submission of Detailed Design & Engineering including preparation of working drawings for internal construction and finishing work, Plumbing System and associated PHE drawings, Electrical power distribution SLD and Panel GA drawings, Electrical light, power, data & voice Layout, FDA system drawing, HVAC System details and drawings, Door Interlock and Access Control system details and drawings, Shower System, CCTV system details and drawings, Building Management System details and drawings, Furniture Layout plan, construction drawings and details of shed for effluent decontamination system and CO2 cylinder bank and details and other required and associated systems and services for the proposed BSL-3 Laboratory Facility.
- 5.2** Submission of Technical Data Sheet, Catalogues and Literatures for equipment including Autoclave, Bio-Safety Cabinet, Pass Box, Air Handling Units, Chiller, Compressors, Exhaust Blower, CCTV system, Access Control system etc.
- 5.3** Submission of any other relevant drawing and technical details considered essential and required for successful completion of the works and asked by the employer.
- 5.4** The executing agency/contractor shall submit the working drawings, technical literature, brochure, literature, technical specifications and other details, sufficiently in advance for approval of the Employer, giving sufficient time for its review. The work shall be taken up only after approval of the drawings and specifications.
- 5.5** Supply and erection of materials, items and equipment/s for execution and completion of internal construction and finishing work, construction of shed for effluent decontamination system and CO2 cylinder bank, PHE works, Electrical and associated works, HVAC work, BMS work, systems and services etc. required as per approved designs and drawings.
- 5.6** Supply and installation of following equipment's and systems shall be done by the executing agency and shall be included in the scope of work:
 - Bio-Safety Cabinets (Class II B2 Type)
 - Pass Box and Dunk Tanks
 - Double Door Autoclave
 - Vertical Autoclave/Sterilizer
 - Air compressor
 - Hot water shower system

- UPS & Inverter with Batteries
- Door interlocks and Access Control System
- Fire Detection & Alarm System
- Surveillance (CCTV) System
- LAN System & Intercom System
- Laboratory Work Station, Eye wash and Hand Wash Stations
- Effluent Decontamination System
- Ventilated type Garment storage cabinets for change room-II
- Non ventilated Garment storage cabinets for change room-I
- Portable Fire Extinguishers (CO2 /Dry Powder type)
- CO2 Cylinder Bank and associated piping for CO2 Incubators
- Vacuum Pump and associated piping with outlet point
- Water Softening Plant
- Individually ventilated cage system

- 5.7** The Employer reserves the right to do minor changes in the given layout plan or change the quantities of fittings and fixture as given in the tender documents. All such changes shall be incorporated and the work shall be executed by the contractor without any additional cost. However, in case, the Employer instructs or make changes in any of the already executed works, which requires demolition/dismantling and re-work by the contractor, then the cost of making such demolition/dismantling and re-work shall be reimbursed and paid to the contractor.
- 5.8** Site preparatory works including dismantling/demolition of existing walls, clearance of malba, making opening in walls and any other ancillary work required to complete the works. The contractor shall take all precautions not to damage any part of the remaining 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.
- 5.9** Testing and commissioning of all the equipment/s, items, systems and services supplied and installed in the Laboratory Facility and Validation of the BSL-3 Laboratory as per the BSL-3 Laboratory Certification Guidelines of NIH, USA in the presence of representative/s of Employer and submission of compiled report.
- 5.10** Preparation and submission of 3 sets of AS BUILT DRAWINGS, OPERATION & MAINTENANCE MANUAL AND INSTRUCTION' for the complete installation and 'BIO-SAFETY MANUAL' for the BSL-3 Lab.
- 5.11** Providing training to the Employer staff on operation, servicing and maintenance of all engineering installations and handling of emergencies due to fire or engineering system failures.
- 5.12** Once commissioned, the scope of work includes operation and comprehensive maintenance of all the equipment as mentioned in the BOQ including the HVAC system for maintaining the lab environment as per the bio-safety guidelines prescribed by WHO, all related internal clean room finish, UPS / non-UPS, air-leak proof power points, leak proof lighting system and power/control cabling work with suitable UPS (connected to specified instruments) for smooth and safe operation of the BSL-3 Facility.
- 5.14** The entire lab shall be validated in coordination with authorized users as per the WHO guidelines and necessary documentation and validation report duly stamped and signed by the authorized users and contractor should be submitted at the time of completion and handing over.

5.15 Design brief for the proposed BSL-3 laboratory:

a) Area Detail:

Wing 1: Virology Suite		Wing 2: Bacteriology Suite	
Description	Area (in Sqft)	Description	Area (in Sqft)
Virus BSL-3 Lab-1	308	Bacteria BSL-3 Lab-1	296
Animal Holding Area	271	Animal Holding Area	271
Procedure Room	103	Procedure Room	103
Virus BSL-3 Lab-2	302	Bacteria BSL-3 Lab-2	302
Animal Holding Area	235	Animal Holding Area	235
Procedure Room	110	Procedure Room	110
Central Instrument Facility		452	
Autoclave Room	168	Autoclave Room	185
Exit Room	33	Exit Room	33
Entry Room	29	Entry Room	29
Shower Room	26	Shower Room	26
Change Room	31	Change Room	31
Preparation Room	48	Preparation Room	48
BMS/ Incharge Room	190	BMS/ Incharge Room	190
Store Room	94	Store Room	94

b) Biosafety Equipment Detail:

Biosafety Equipment Name	Quantity Required
Static Pass Box	8
Dynamic Pass Box	8
Double door Autoclave	4
Class II, Type B2 Biosafety cabinet (6FEET)	16
Individually Ventilated Cage System (96 Nos. Size B for Mice)	8
Individually Ventilated Cage System (20 Nos. Size D for Guinea Pigs)	4
Effluent Decontamination System	2

Above detail is with respect to the proposed layout of the BSL-3 Facility of the NCR Biotech Science Cluster, Faridabad. Scope of work includes the design, supply, installation, testing, commissioning, validation on EPC/Turnkey basis and its day-to-day operations and comprehensive maintenance. Design proposals from the participating agencies shall be assessed during technical bid evaluation and requirements may change upon selection of the most optimum design.

6.0 **TENDER DRAWINGS :**

The following tender drawings of the proposed Laboratory facility are attached for reference purpose and guidance to the Bidders to understand the scope of work:

- 6.1 Basic Architecture Layout
- 6.2 Human and Material Flow Layout
- 6.3 Zoning Layout

The Bidder/executing agency shall check and verify the correctness of dimensions and quantities given and indicated in the tender drawings. The work shall be executed as given and detailed in the scope of work, technical specifications and the final design and drawings to be submitted by the Bidder and approved by the Employer.

7.0 BROAD TECHNICAL SPECIFICATIONS OF THE BSL-3 Facility

7.1 INTERNAL CONSTRUCTION & FINISHES AND PHE WORKS

7.1.1 All the internal partition walls and ceiling construction in BSL-3 Laboratory and support areas shall be carried out with prefabricated, non-particle shredding panels in Powder Coating finish. The prefabricated wall and ceiling panels shall provide impervious and monolithic construction and surface finish. The existing external brick walls shall be provided with cladding from inside with similar prefabricated wall panels. The Flooring shall be carried out in 3 mm Self Levelling Epoxy, in approved shade.

7.1.2 The internal partition and ceiling panels shall be able to withstand negative pressure of upto -100 Pa, without any sag or buckling. The ceiling shall be walkable type for access of services above for maintenance purpose.

MODULAR WALL PANELS

- (a) Minimum 40 mm thick prefabricated modular wall panels with Powder Coated GSS sheet of 0.8 mm thickness on both sides.
- (b) Bonded with PUF insulation having density of 35-40kg/m³ in-between both side of sheets.
- (c) All joints shall be sealed with RTV (Silicone) sealant.
- (d) Wall panels shall have provision of electrical conduit, pre inserted in panels, to run electrical wires and cables.
- (e) The conduits shall be sealed with silicon sealant after completing installation of electrical wires and cables.

CEILING PANELS

- (a) Minimum 60 mm thick Walkable ceiling panels- Powder Coated GSS sheet of 0.8 mm thickness on both sides.
- (b) Ceiling panels shall be monolithic with minimum number of joints.
- (c) Bonded with PUF density of 35-40 kg/m³ in-between both side sheets.
- (d) All the joints shall be sealed with RTV (Silicone) sealant.
- (e) The ceiling panels shall be installed in uniform manner and there should be no over lapping of panels.
- (f) The ceiling panels shall be provided with uniform and symmetrical cut-outs for supply air and return/exhaust air diffusers.

VIEW PANEL/WINDOW

- (a) View panels/window frame work shall be made in similar construction as partition panels and shall be installed flushed with the wall panel.
- (b) The view panels shall be double glazed type and shall be in size 1000 mm × 1000 mm (or as required) in the wall partitions.
- (c) The view panel glazing shall be 8 mm thick toughened glass on both sides and shall be fully glued fit and sealed along with desiccant to avoid condensation.

- (d) The view panels/window frame and glass panel glazing shall be perfectly sealed not to allow any ingress of air, due to negative pressure.
- 7.1.3** Wall and ceiling corners shall be provided with R75 radius aluminium coving in same shade as of wall panels. Wall to floor corners shall be provided with epoxy coving in same or approved colour top coat and in same radius as of aluminium coving provided for wall to wall and wall to ceiling coving.
- 7.1.4** Flooring shall be in 3 mm Self-level epoxy in approved shade, complete with base coat, sealer coat and 3 mm top coat in self-levelling epoxy.
- 7.1.5** The wall and ceiling surface finish shall provide impervious, monolithic, chemical resistant (organic solvents, acids and alkalis), antibacterial and antifungal finish and shall sustain Formalin/H₂O₂ fumigation of lab spaces.
- 7.1.6** The Door Frames and Shutters in laboratory and support area shall be in metallic construction and factory pre-painted/powder coated in chemical resistant finish. The doors shall be provided with lip gaskets on top and sides and drop down gasket at the bottom. Doors shall be provided with approx. 300 mm ×600 mm vision panel with double glass in 5 mm thickness, both sides installed flushed with the door surface.
- 7.1.7** The doors shall be provided with heavy duty door closer, stainless steel kick plate on outer side and Stainless Steel handle. The doors shall be provided with Key-Lock, except for doors inside the BSL-3 Laboratory area.
- 7.1.8** The Door Frames and Door Shutters of the Biosafety Doors (BD) shall be constructed in Stainless Steel 304 (16 gauge).
- 7.1.9** The Biosafety Doors of fumigation airlock and BSL-3 Laboratory shall be Air-Tight Doors, provided with inflatable gaskets, connected to compressed air line from the air compressor, to ensure perfect sealing when in closed position. The inflatable gaskets shall be interlocked with the door interlock system such that when the door is closed, the gasket should inflate and seal the door and when the door release button is pressed, the gasket should deflate to allow opening of the door. The doors shall be provided with sealed vision glass and shall be complete with door closers and SS handles.
- 7.1.10** To minimize penetrations in the ceiling, service pendant/s manufactured in SS 304 (18 gauge) shall be provided for connecting services like steam, water and compressed air inside the BSL-3 Laboratory. The ceiling pendant penetration shall be perfectly caulked and sealed with Epoxy Sealant not to allow any ingress of air, due to negative pressure.
- 7.1.11** All the joints and penetrations in the BSL-3 Laboratory area shall be perfectly sealed with Epoxy Sealant and made leak proof not to allow any ingress of air, due to negative pressure.
- 7.1.12** Floor traps/U-traps in BSL-3 Lab area shall provide double pass and shall have minimum 2” W.C head. The effluent drainage piping from the BSL-3 Lab shall be in chemical resistant material like HDPE with all joints welded and tested to be leak proof. The drain lines from the Containment area shall be segregated from drain lines of other areas.
- 7.1.13** Each BSL-3 Lab room shall be provided with stainless steel sink with hands free tap and emergency eye wash station. Water distribution piping in High Containment area shall be provided in Polypropylene and shall be provided with non-return valve/backflow prevention device.
- 7.1.14** Two nos. 5,000 Ltrs. overhead water storage tank in HDPE shall be provided complete with distribution piping for water supply to the BSL-3 Laboratory and support areas, as required.
- 7.1.15** The external corridor shall be provided with false ceiling in Gypsum Tiles.

7.2 THE HVAC SYSTEM

The proposed BSL-3 Laboratory, and support areas shall be air conditioned through a separate dedicated Central AC System comprising of Chiller Pack, Air Handling Units, Exhaust System, Air Filtration System and Air Distribution System complete in all respect. The system shall be with standby and backup provisions capable to provide un-interrupted continuous 24x7x365 days operation of BSL-3 Lab to maintain the required temperature, humidity, air-change rate, differential pressure gradient and air filtration conditions of the Laboratory Facility. The contractor shall submit the HVAC system and BMS design and working drawings for prior approval.

The HVAC system shall comply with the given specifications and performance requirements and shall be complete in all respect, as required and approved. The following design and performance conditions shall be maintained in the BSL-3 Laboratory:

- Inside Temperature: 22 +/- 2° C
- Relative humidity: less than 60%
- Negative Pressure gradient: As per tender zoning plan
- ACPH in BSL-3 Lab : More than 12
- Filtration : HEPA Filter Supply Air in BSL-3.
HEPA Filter Exhaust Air in BSL-3.
- Ventilation : 100% FA system for BSL-3.
Other areas with Re-circulatory system.
- Exhaust Fan location for BSL-3 : Minimum 25 ft from AHU intake.
- Air velocity at exhaust discharge: 15-20 m/s (3000-4000 fpm) for BSL-3.

7.2.1 Air Conditioning Plant:

The air-conditioning plant shall provide enough flexibility in operation such that selective areas of the facility can be operated, to economize the operating costs.

Chiller Pack:

The Chiller Pack shall be skid mounted with Air Cooled Condenser, Evaporator/Chiller, Micro-processor control panel, interconnecting control and power wiring, refrigerant charge etc. complete in all respect. To economize the operating cost and provide backup capacity, the chiller pack shall have multiple compressors.

The Chiller Pack unit shall be completely factory assembled including:

- Evaporator
- Air cooled Condenser
- Oil separator
- Hermetically sealed Compressors (Screw/Scroll)
- Compressor Motor
- Microprocessor based control panel
- Inter connecting refrigerant piping, wiring and other accessories
- Refrigerant
- Chiller Pack mounted on sturdy MS painted base frame
- Anti-vibration mounts/pads

Chilled Water and Hot Water Piping System:

Chilled water and hot water piping system shall be provided in accordance with ASHRAE standards. The piping shall be carried out in heavy class MS ERW pipes conforming to IS 1239 for pipe size upto 150 mm dia and IS 3589 above 150 mm dia pipes. The joints in the water piping system shall be welded as per IS 823. The piping system shall be complete with required butterfly valves, ball valves, balancing valves as per IS 780, IS 5152 & IS5155. Non-return valves as per IS 778 & IS 5312.

- Valves shall be suitable for upto 15 Kg working pressure

- Non return valves shall be disc type
- Strainers shall be provided (Y type/ pot strainers)
- Strainers should have bronze screen with 3 mm perforations
- Strainers should be provided on the inlet side of each pump
- Piping, fittings and supports shall be painted with red oxide primer
- The flow-direction shall be visibly marked with arrows
- Pressure Gauge and Thermometers at AHU's & pump inlet and outlet
- Non return valve shall be provide at chilled water, hot water & shower pumps

The Piping shall be tested to hydrostatic test pressure of at least 2 ½ times the maximum operation pressure but not less than 8 kg per sq.cm gauge for a period of not less than 24 hrs. The pressure testing shall be done before application of insulation.

The piping shall be insulated with 50 mm thick expanded polystyrene insulation or 25mm thick Class 'O' closed cell nitrile foam insulation with aluminium cladding.

Hot Water Generator: Hot water generator shall be provided for winter heating and reheating. The hot water generator shall be electric water heater consisting of a vertical tubular shell, closed to both the ends with bolted end covers. The shell shall be fabricated from M.S. sheet and joints shall be welded. The construction shall conform to the BIS standards/international standards. It shall be designed for a working pressure of 21 Kg/cm² and tested accordingly.

Chilled Water and Hot Water Pumps:

Chilled water and Hot Water pumps shall be Mono-block Type in 1+1 configuration (1 working + 1 standby). Installation of pumps shall be done on a common MS base frame grouted to concrete foundation. The pumps shall conform to following specifications:

- Casing : Cast iron
- Impeller : Bronze
- Shaft : carbon steel to EN 8
- Mechanical seal : Carbon / ceramic face
- Motor : TEFC squirrel cage induction motor,
- Power supply : 415V +/- 10% / 3Ph/50Hz
- Pump Duty : As required
- Base plate : Cast iron /MS fabricated

7.2.2 Air Handling Units :

The Air Handling Units shall be Double Skin type and shall be complete with blower, motor, drive set, cooling coil, filter section, drain tray etc. complete in all respect. The Air Handling Units shall be floor mounted type installed on civil foundation with vibration isolation pads. To ensure uninterrupted operation, multiple AHU's shall be provided for supply air to BSL-3 in manifold arrangement, with n+1 redundancy. The capacity of Air Handling System of BSL-3 Lab shall be 10% higher than the designed required capacity.

AHU Casing: AHU Casing shall be made of minimum 25 mm thick PUF sandwich panels. The outer wall should be of galvanized sheet, chemically treated having scratch free pre plasticized coating and plain GI inner sheet. In-fill shall be with PUF insulation having density 35-40 kg/m³ fixed on modular frame. The frame work shall be in extruded aluminium sections with thermal break to avoid condensation/sweating. The AHU should be provided with electric power /control junction box on external side of the unit.

Fan section: The Fan Section shall have SISW type, multi blade type Fan / Blower. The Fan / Blower blades shall be made of treated heavy gauge steel treated. The fans should be statistically and dynamically balanced and should have AMCA approval. Cooling coils and heating coils: Coils shall be constructed in 12.5 - 15mm dia copper tubes, 24 gauge thickness with aluminium fins (at least 12 fpi) firmly bounded to copper tubes assembled in zinc coated steel frame. Air velocity across the coil

should not exceed 500 fpm. The coil shall be factory tested at 21kg/sq.cm air pressure. The cooling coil shall be 8 RD for 100% FA system and 6 RD for re-circulatory system.

Filter section: The Filter Section shall be same as that of AHU casing. The Filter section shall be complete with Filters of 5 micron and 0.5 micron particulate size.

Dampers: Each AHU shall be complete with OPEN/CLOSE Dampers and Fire Dampers. The dampers shall be opposed blade type. Blades shall be made of double skinned aero foil aluminium sections with integral gasket and assembled within extruded aluminium alloy frame. All linkages and supporting spindles should be made of aluminium or nylon. Spindle shall be provided with a bakelite knob for locking the damper blades in position. The OPEN CLOSE dampers shall be provided with compatible motor actuator.

Motor and Drive: Fan motors shall be flame proof and suitable for 415V+/-10%, 50Hz, 3 phase, AC supply. Motor shall be squirrel cage TEFC motors. Motors shall be designed for quiet operation. Drive to fan shall be provided through belt-drive with a standard belt guard housing the bolt and adjustable motor sheave.

AHU Drain piping : AHU drain piping shall be carried out in GI upto the nearest drain traps complete as required. The drain pipes shall be insulated with 12 mm thick closed cell nitrile foam insulation.

AHU Controls: Three way mixing valve with actuator and limit switch for AHU access doors shall be provided complete with power and control wiring.

7.2.3 Exhaust System:

The exhaust system of the BSL-3 Laboratory shall comprise of High Static Exhaust Blowers, SISW type, backward curve, complete with motor, drive set, vibration isolation pads, OPEN/CLOSE damper and other fittings and accessories. The Exhaust System shall be provided with redundant backup (1 w+1 s) to ensure un-interrupted operation (24x7x365 days) of the Laboratory. The capacity of the selected Exhaust Blowers shall be 10% higher than the designed required capacity.

7.2.4 Air Filtration System :

BSL-3 Lab Supply Air : Three stage air filters shall be provided.

- The first stage shall be for 5 micron particulate size, 90% efficiency
- Second stage shall be for 0.5 micron particulate size, 99.9% efficiency
- Third stage shall be for 0.3 micron particulate size HEPA Filters, 99.97% efficiency.

BSL-3 Lab Exhaust Air :

- HEPA Filter, 0.3 micron particulate size, 99.97% efficiency.

The system for BSL-3 Lab shall be designed and configured to provide multiple HEPA Filter bank to permit un-interrupted round the clock (24x7x365 days) operation of the BSL-3 Laboratory including during HEPA filter maintenance, replacement and/or change. The HEPA filters shall be of micro-fibreglass filter media mini pleated type and shall be capable to withstand corrosive agents and gases used for lab fumigation. The HEPA filters shall have minimum 99.97% efficiency for 0.3 micron particulates. The HEPA filters shall be HOT DOP tested at the manufacturer's works, before supply at site, as per ASTM D 2986-71, US-MIL STD 282 to validate the filter efficiency.

The HEPA filter plenums shall be made in SS 304 (14 gauge) with air tight and leak proof construction. The HEPA filter plenums shall have provision to carry out on site HEPA filter scanning, testing and validation, pressure sensors to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change of filters.

7.2.5 Supply and Exhaust Air Ducting :

BSL-3 Laboratory Ducting :

The ducting from AHU upto supply air HEPA Filter Plenum and from exhaust air HEPA Filter Plenum upto Exhaust Blower shall be carried out in GI sheet (class VIII with zinc coating of 120 gm/sqm.) The ducting after supply air HEPA Filter Plenum upto BSL-3 Laboratory rooms and exhaust air ducting from BSL-3 Laboratory rooms upto the Exhaust Air HEPA filter plenums shall be carried out in welded Stainless Steel and shall be leak proof.

All duct fabrication work, thickness of sheet metal, supports, hangars shall conform to SMACNA standards.

Supply air ducting insulation – 19 mm thick Al. faced closed cell nitrile foam

Exhaust air ducting insulation - 13mm thick Al. faced closed cell nitrile foam

Volume Control Dampers, Fire dampers, air diverting vanes shall be provided in the supply and exhaust air ducting, as per the requirements, and ASHRAE standards and approved design. Each BSL-3 Lab room/zone supply and exhaust air duct shall be provided with gas tight Isolation Damper to allow isolation of the room/zone and carry out selective decontamination/fumigation. The exhaust system of BSL-3 Laboratory shall be provided backdraft / non-return damper.

7.2.6 Pressure Adjustment and Control System:

The BSL-3 Laboratory area/zone Pressure shall be PLC Controlled through VAV's and VFD's, to automatically balance the negative pressure fluctuations in the BSL-3 Laboratory rooms/zones caused due to varying conditions like opening of doors, operation of BSC's etc. for continued maintenance of the differential pressure gradient. The AHU motor and Exhaust Blower motors shall be provided with Variable Frequency Drive (VFD). The Adjustment, Control and Monitoring system of the BSL-3 Laboratory room/zone pressures shall be provided through the BMS.

7.2.7 Fire Dampers :

Fire Dampers provided in the supply and exhaust air systems shall be interlocked with the AHU blower motors such that in case of fire, the AHU fan motor should trip automatically.

7.2.8 Alarms :

The system shall be provided with following alarms:

- HVAC system failure alarm
- Room/zone pressure failure alarm

7.2.9 Canopy Hood:

Canopy hood shall be provided above the loading and unloading doors of the Autoclave to capture steam vapour and heat generated by the equipment and above aerosol generating equipment like Centrifuges. The canopy hood on the containment side shall be ducted and connected to the HEPA filtered laboratory exhaust and on non-containment side shall be ducted and connected to normal exhaust. The Canopy hood exhaust air capture velocity shall be minimum 50 fpm.

7.3 BMS & SECURITY SYSTEM

Building Management System (BMS) should be envisaged to configure, monitor and control the HVAC System, Life Safety System (LSS) which consists of Surveillance System (CCTV), Fire Address System and Access Control System. Following are the sub-systems that shall be monitored and controlled from BMS system:

- The BMS consist of work station, Network control module, DDC panel and field primary sensing devices.
- BACK-Talk Programmable Logic Controller - VLC HVAC / AHUs.
- If temp is less than temp set point (or) humidity is more than set point then BMS system logic will switch on the heater of that particular running AHU.
- BACK Talk View port operator Terminal Heating Ventilation and Air Conditioning (HVAC) Monitoring & Control.
- Exhaust / Supply air system interlocking for minimal chance of cross air-flow.
- PLC based negative pressure gradient control/monitoring system
- Desired temp and RH control/monitoring system
- Addressable fire detection system with zone demarcation
- Access Control Management
- None of the features of the BMS terminal accessible without the user first being required to log on by entering a password.
- It should be possible to manually override the state or value of point or return it to its automatic state directly from the schematic diagram. This may be accomplished by the use of a mouse by pointing at a plant symbol and clicking. This produces a menu from which the desired function may be selected.
- Digital/Mechanical Differential Pressure Display unit at Entry door
- Access control & 3 - Door Interlock system with Electromagnetic Strike lock unit + Egress Button and 15 nos. Access Proximity cards.

The Building Management System shall be complete with PLC, Sensors, Controllers, power and control wiring, customized Software and other associated field devices, hardware and accessories complete in all respect, as per requirement and approved design. The HVAC system START and STOP sequence shall be interlocked to prevent positive pressurization of the BSL-3 laboratory, at any point of time. A dedicated desktop PC shall be provided for the BMS operation and control along with a parallel secondary display screen of 32" size at the BSL-3 laboratory entrance to show the operating parameters. The BMS control panel shall be powered through UPS. Upon restoration of power after a power failure, the BMS shall start the HVAC system automatically without any human interface and restore the normal operational set points of the system.

7.4 THE AIRFLOW

No recirculation, one pass design, Unidirectional air flow, Dedicated Exhaust air fan with requisite static pressure should be installed for individual biosafety cabinet's exhaust air flow and the same should be interlocked with the operational sequence of the cabinets.

7.5 ELECTRICAL SYSTEM POWER AND UPS

The entire BSL-3 facility, equipment, system and power points shall be fully wired and complete with required switchgears, wires, cables, switches, sockets and light fittings and fixtures complete in all respect. The electrical light switches, sockets and lights fixtures shall be sealed type and in chemical resistant finish suitable to withstand laboratory fumigation. On-line UPS of appropriate rating (minimum 20 minute full backup) shall be provided by the vendor to power up the essential lab instruments, BMS control, emergency lighting systems inside lab, Access Control system, biological safety cabinets, and Pass boxes of the HVAC system in case of power failure.

7.6 WATER SUPPLY AND DRAINAGE

Treated water (to be provided by the institute) connection should be connected to Wash/Autoclave room only, for use of water inside critical lab area only portable water arrangement will be provided. Insect resistant SS drain trap should be installed in washing area and should be connected to central drainage pipeline network.

7.7 COMMUNICATION SYSTEM

Telephone and internet receptacles should be installed in Control station, Animal Room and the labs.

7.8 UTILITY PIPING

Separate provision should be made for CO₂ gas for incubators. All utility piping shall be fitted with backflow prevention device/Non-return valve.

7.8 PERFORMANCE TESTING FOR THE BSL-3 FACILITY AND 3RD PARTY VALIDATION

1. Bio-safety cabinet integrity check
2. HEPA filter leak test – according to the US Federal Standard 209E
3. Ducting leak test - (light leak test)
4. Room differential pressure test verification (as per specification)
6. Particle test for cleanliness; according to US Federal Standard 209E
7. Light intensity (as per specification)
8. Noise level test (as per specification)
9. Test of Air Change rate (as per specification)

7.9 EQUIPMENT AND SYSTEMS:

a) AUTOCLAVE :

- i) The autoclave shall be double door, rectangular, steam operated, high pressure high vacuum, suitable for horizontal loading of waste. The autoclave shall be with bio-seal design. The chamber size shall be approximately 600 mm x 600 mm x 1200 mm. The autoclave shall be free standing type. The Autoclave shall be PLC controlled, programmable and shall be loaded with different pre-programmed decontamination and sterilization cycles.
- ii) The Autoclave chamber shall be constructed of heavy duty SS of 316 (min. 6 mm thickness) with full argon welding. The chamber material and construction shall meet ASME standards for unfired vessels. The chamber shall be duly reinforced with the help of carbon steel. Doors and jacket shall be constructed of stainless steel sheet of 304 grade (min. 5 mm thickness). Doors must be provided with automatic safety locking and unlocking devices. All doors shall be with gasket to ensure a high temperature seal. Chamber and doors shall be designed for working under positive pressures upto 31 psig at temperature upto 135° C. The autoclave shall be insulated with 50 mm thick resin bonded glass wool to minimise heat loss and restrict the skin temperature within reasonable limits so as not to cause burn due to accidental touch. Pipes and fittings shall be of stainless steel and bronze. Key locked main power switch should be provided for additional safety and security.
- iii) The autoclave shall be provided with a vacuum pump mounted on a mini skid. The vacuum line shall be provided with an absolute vent filter cartridge (0.22 micron or better) for safe vent and shall allow In-Situ decontamination of filter for Safe Change when the filter is to be accessed. The autoclave control system shall be PLC controlled, programmable and shall allow up-to six pre-programmed cycles. The logic of pre-programmed cycles shall be developed as per the requirement of the end users. The in-built steam generator shall be provided with the autoclave. The steam generator shall be

fabricated from SS 316 L (16 gauge) with industrial immersion heater of reputed make. The immersion heaters shall be heavy duty type in stainless steel construction. The heater shall be of suitable capacity so as to achieve the required operating temperature and pressure in about 30 minutes to start the autoclave cycle and should be capable of maintaining the pressure and temperature thereafter during various load cycles of the autoclave.

b) DYNAMIC PASS BOX

- i) Pass Boxes (Dynamic) shall be provided at required locations for transfer of samples, chemicals and materials into the laboratory. The Pass Box shall be constructed in SS 304 (18 gauge). The corners inside the Pass Box chamber shall be coved for easy cleaning. The pass box chamber dimension shall be approximately 610 mm x 610 mm x 610 mm. The unit shall be complete with HEPA filters, blower, motor, door electromagnets, door interlock, UV Lamp with timer, necessary wiring, controls and all other accessories. etc. complete.
- ii) The Pass Box doors shall be interlocked by providing suitable electromagnet, so that both the door cannot be opened simultaneously. The interlock shall provide visual indicator for door open/close conditions. The blower motor of Pass Box shall of suitable rating and shall be dynamically and statistically balanced. Magnehelic differential pressure gauge shall be provided to indicate the pass box chamber pressure. The pass box shall be provided with UV light with ON/OFF switch and shall be interlocked with the pass box doors.
- iii) The Supply Air velocity across the terminal HEPA filter in Pass Box shall be approximately 0.45 m/sec. Noise level shall be less than 70 dB. The pass box shall be installed flushed with the wall on BSL-3 Lab side and projected on the other side. The projected side shall be provided with SS coving at the pass box and wall junction.

c) STATIC PASS BOX :

Pass Box shall be provided at required locations for transfer of samples, chemicals and materials into the laboratory Pass box with UV to be provided. The Pass Box shall be constructed in SS 304 (18 gauge). The corners inside the Pass Box chamber shall be coved for easy cleaning. The pass box size shall be 610 mm x 610 mm x 610 mm. The unit shall be complete with, door electromagnets, door interlock, UV Lamp with timer, necessary wiring, controls and all other accessories, etc. complete.

d) BIOSAFETY CABINET (6 Feet) :

The Biosafety Cabinets shall be **Class II B2 type** and shall be as per NSF 49 standards. The Bio-Safety Cabinet body, frame and supports shall be constructed in SS 316 L (18 gauge). The work surface shall be perforated SS 316 L (18 gauge). The front shall have SS 316 L (18 gauge) top section and sliding sash in toughened glass with required counter weight. The Bio-Safety Cabinet shall be complete with following accessories, features and specifications:

- Approx. Work Space of 1000 mm (W) x 610 mm(D) x 610 mm (H)
- Supply Air Face velocity not to exceed 0.65 m/sec
- Working chamber to operate under > 10 mm negative pressure
- Drain receptacle with drain faucet
- Fluorescent light & UV light
- Extract plenum and Air control dampers
- 2 Nos. Power outlet switch/sockets
- 80 to 100 fpm air inlet velocity at 8-10 inches of sash opening
- Supply and Exhaust HEPA filters shall be mini pleat separator less type with 99.97 % efficiency down to 0.3 micron particle size
- Supply and Exhaust Blowers with motor, statically and dynamically balanced.
- Magnehelic differential pressure gauge for chamber and HEPA filters
- Control console with indication lamps

e) DUNK TANK:

Dunk tank shall be provided at the required location. The dunk tank shall be constructed in SS 304 (16 gauge) for active use of disinfectant chemical like NaOH, Sodium Hypo-Chloride Solution.

f) SHOWER SYSTEM:

i) The shower system for BSL-3 Lab shall comprise of pre-fabricated cubicle and doors constructed in SS 304 (16 gauge) of approximately 1.5 mtr. dia. All the joints shall be argon welded and perfectly buffed and shall be free from any blurs and sharp edges. The shower cubicle shall be provided with supply & return air diffusers and light fixture. The shower cubicle door shall be of approximately 750x 2100 mm size. The shower floor shall be perforated type with effluent collection tray at the bottom to allow connection with the effluent drain line without making any opening or puncturing the existing RCC floor slab.

ii) A water heater/calorifier shall be provided for supply of continuous heated water to the showers at controlled temperature (30-35 Deg. C) during winters. The shower system shall be complete with a separate shower water storage tank, insulated water distribution/recirculation piping, water distribution pumps (1W+1S), valves, flow meters, batch controllers (to set each shower cycle), hot water generator, control panel and all other necessary controls, wiring, piping etc. complete as required.

g) EFFLUENT DECONTAMINATION SYSTEM

The Chemical Decontamination System for BSL-3 Laboratory effluent shall comprise of Two nos. Effluent Collection tanks (1 Working +1 Standby), each of 2000 Ltrs. Capacity.

The decontamination tanks shall be constructed in SS 304 (14 gauge). The drain line from BSL-3 Laboratory containment area shall be terminated to the effluent decontamination tanks. The effluent decontamination tanks shall be provided with motorized OPEN/CLOSE valves connected with liquid level sensor such that when one tank get filled up to approx. 800 Ltrs volume, the supply valve shall automatically close and the supply valve of the standby tank shall automatically open to allow collection of effluent. During this time, the effluent collected in filled up tank can be decontaminated by introducing disinfectant chemical. This cycle shall be repeated automatically vice-versa with both the decontamination tanks and the process shall be automatically controlled through a control panel. One number chemical storage tank in SS 304 (14 gauge) fitted with transfer pump and measuring device, piped and connected to both the decontamination tanks shall also be provided for introducing disinfectant chemical into the decontamination tanks.

The system shall be complete with following items:

- Two nos. Decontamination Tanks, each of 2000 Ltrs. capacity
- Motorized valve connected with liquid level sensor through control panel
- Disinfectant Chemical storage tank
- Disinfectant Chemical dosing pump
- Non return valves
- Interconnecting piping including piping for chemical dosing
- Pumps for discharging decontaminated effluent into sewer/drain (1W+1S)
- Power and control cabling/wiring for pumps and motorized valves with control panel.

h) WATER SOFTENING PLANT:

The HVAC system, the laboratory rooms, sinks and showers shall be supplied with filtered soft water. A water softening plant of 2000 litre/hour output capacity shall be supplied and installed. The contractor shall get the existing water quality tested from laboratory and provide the system accordingly. The water softening system shall be complete with interconnecting piping, pumps and piping upto the soft water storage tanks.

7.10 SERVICES AND UTILITIES:

a) Power :

The required Power for the BSL-3 Laboratory shall be arranged and provided by RCB including laying of Power supply cable upto the main LT Panel of BSL-3 Lab.

b) Water :

Water supply for the BSL-3 Laboratory shall be arranged and provided by RCB at the nearest available source. The required piping work for water connection to storage tanks and further distribution in BSL-3 Laboratory shall be done by the Contractor.

c) Drain & Sewer Line :

The drain and sewer from the BSL-3 laboratory shall be finally terminated to the nearest available drain and sewer line, by the Contractor.

d) Utilities for laboratory equipment/s :

Piping and cabling etc., for utilities like water, power, drain, CO₂ & vacuum needed for the laboratory equipment/s and instruments (to be supplied by the Employer) shall be provided by the contractor, as required. The vacuum pump, CO₂ cylinders and manifold and associated piping work shall also be supplied and installed by the Contractor.

7.11 STATUTORY APPROVALS:

The required statutory approvals from authorities like Fire Authorities, Pollution Control Board, Electrical Inspectors, etc., if required and applicable, shall be obtained by the Contractor. RCB shall only provide the required assistance in getting such clearance/s, as required. Official Statutory fees, if any, shall be paid to the concerned department/authority directly by RCB.

7.12 TESTING, COMMISSIONING AND VALIDATION

a) After completion of the construction and installation works, all the equipment, systems and services shall be commissioned and tested to check the operation and performance of each of the equipment and system.

b) Once all the equipment and systems are found to be working satisfactory, the Validation of the BSL-3 Laboratory shall be carried out by the Contractor in the presence of authorized representatives/committee of RCB. The Validation shall be carried out in accordance with the NIH Guidelines for commissioning and validation of BSL-3 Laboratories. During the validation process, operation and functioning of complete installations shall be checked to verify that the equipment and systems are delivering the desired and approved performance results. It will be checked to ensure that all the biosafety and biosecurity requirements are met, are in place and are functional.

c) Before start of the validation process, the Contractor shall submit a detailed validation document giving details of validation checks and tests to be performed, the acceptance criteria as per the approved designs and drawings and the formats for recording the check and test results.

d) After completion of the validation process, the Contractor shall compile the validation results and submit to RCB.

e) The Contractor shall provide all the test and measuring instruments, tools, tackles, manpower etc. required for the Testing, Commissioning and Validation Process.

7.13 DOCUMENTS AND DETAILS TO BE SUBMITTED ON COMPLETION

- a) On Completion of the works, the Contractor shall submit the following documents to RCB in three sets:
 - Complete Set of 'AS BUILT DRAWINGS'
 - Operation and Maintenance Instructions & Manuals for individual Equipment and Systems
 - Recommended List of Spares and Consumables
 - Preventive Servicing and Maintenance Schedule
- b) The Contractor shall submit the "Bio-Safety Manual" clearly highlighting all the bio-safety aspects, precautions, safeties and emergencies, applicable to this BSL-3 Laboratory Facility.
- c) The Contractor shall submit the Technical Specifications and Data sheet for all the equipment/s and systems supplied and installed.
- d) The Contractor shall submit a written undertaking that spares and after sales services for all the equipment, systems and services installed in the facility shall be made available for a period of at least five years from the date of handing over the facility. The after sales services may be availed by the Employer from the executing Contractor under a separate Operation and Maintenance Contract.

7.14 ROUND THE CLOCK OPERATION AND COMPREHENSIVE MAINTENANCE

After the DSITC, the vendor must provide round the clock operation and comprehensive maintenance of BSL-3 Facility for 1 year from the date of handing over the facility. The comprehensive operation and maintenance services provided by the contractor shall include providing trained manpower, accessories, tools, tackles, all spares and consumables, replacement of defective parts, carrying out routine and preventive maintenance and servicing of the equipment's and systems etc. complete in all respect (excluding only power and water which shall be provided by institute). The charges for providing 1 year comprehensive operation and maintenance services shall be included in the quoted rates and nothing over and extra shall be paid to the contractor on this account. After completion of one year comprehensive operation and maintenance services, the contractor may be required to provide comprehensive operation and maintenance services for the complete Laboratory systems of the BSL-3 facility covered under this contract for a further period of up to 3 (three) years. However, availing of comprehensive annual operation and maintenance services shall be at the sole discretion of institute. The unit rates quotes for comprehensive annual operation and maintenance services (after completion of 1 year already covered in the scope of works) for 1st year, 2nd year and 3rd year shall be binding on the contractor. The rates quoted for comprehensive annual operation and maintenance services shall be inclusive of all accessories, manpower, tools and tackles, spares and consumables, replacement of parts, routine servicing and maintenance of equipment's and systems etc. (excluding only power and water which shall be provided by the employer) complete in all respect. Periodical Operation and Maintenance test report duly signed by authorized user scientist of the institute should be submitted in pre-approved format at the end of every third month. Yearly facility validation should be conducted by the vendor in coordination with user scientists.

The CMC activities include:

- High Side comprising of Chiller, CHW Pumps, with all accessories
- Low Side comprising of AHUs, EXUs, Air distribution system (ducting with insulation), Air control devices like VCD, Registers, Grilles, Louvres, Terminals with filters, coils, heaters etc.
- Water distribution system comprising of CHW Piping system - (MS and GI), all flow control devices like valves, fittings, water flow balancing and Insulation.
- Total Electrical System comprising of MCC and connected components, Cabling with all associates and Protection devices.
- Building management system including controllers, field devices and sensors checking and monitoring including calibration, replacement if needed.
- Complete security System including access control and door interlock arrangement, Fire.
- Observations & readings to be recorded and Reporting done periodically.

- Periodic Lab Fumigation & Performance qualification/validation in coordination with users.

- 7.14.1** During the operation and maintenance period, it is expected that the Contractor shall attend the breakdown and rectify the fault/s promptly with minimum possible downtime. The maximum permitted DOWNTIME shall be 48 Hours from the time the intimation is given by the user.
- 7.14.2** If the repair/rectification is not carried out by the Contractor within the maximum permitted DOWNTIME, the Employer shall charge penalty, for each breakdown instance, subject to a maximum of 10% of the Annual Contract Value, as follows:
- 7.14.3** Above 48 hours & Below 96 hours - Penalty of 1% of the Annual Contract Value Above 96 hours & Below 192 hours - Penalty of 1.5% of the Annual Contract Value and Above 192 Hours - Penalty of 2% of the Annual Contract Value and get the work repair/rectification done from third party at the Contractor's Risk and Cost.
- 7.14.4** The contractor shall maintain sufficient Inventory of required spares and consumables at site to minimize the downtime and to ensure smooth operation and functioning of the Laboratory.
- 7.14.5** Before entering into the Comprehensive Operation and Maintenance Contract, the Contractor shall submit details of manpower proposed to be deployed at site, detailed schedule of preventive servicing and maintenance works, the formats for maintaining daily log sheet and servicing and maintenance records and details of spares and consumables to the Employer.
- 7.14.6** Payment for Comprehensive Annual Operation and Maintenance Contract Services shall be made by the Employer to the Contractor on QUARTERLY basis, in proportionate amount to the yearly quoted price for the services.

SCHEDULE OF APPROVED MAKES AND MANUFACTURERS

	ITEM	APPROVED MAKE
	Air Cooled Chiller Pack	Voltas/Blue Star /Carrier
	Hot water Generator/Calorifier	Rapidcool / Khokar / Emerald
	Double skin type AHU	Blue Star/Caryaire/Suvidha/Carrier/Zeco
	Pumps	Kirloskar/Beacon/Greaves
	Centrifugal blower for AHU	Nicotra/ Comferi/ Flakt / Kruger
	Motors	Crompton/Siemens/ Bharat Bijlee/ ABB
	Exhaust Blowers	TCF / Caryaire/Carrier/Zeco
	MS Pipes	ITC/ Jindal/ Tata/ SAIL/ HSL
	Isolation Damper	Trox/Camfil/YIT/Klenzaid
	VAV	Trox/ Airtek/ Aldes/Celmec
	HEPA Filters	AAF/Camfil/YIT//Klenzaid/Thermadyne
	Containment HEPA Filter housing	Camfil/YIT/Klenzaid
	VFD	ABB/Seimens/AllenBradley/Danfoss
	Pressure sensor & transmitter	Honeywell/Dawyer/Danfoss/Siemens
	Temperature sensor & transmitter	Honeywell/Dawyer/Danfoss/Siemens
	Humidity sensor & transmitter	Honeywell/Dawyer/Danfoss/Siemens
	BMS system	Rockwell / Siemens /ABB
	PLC	AllenBradley/Siemens
	Magnehelic Gauges	Dawyer
	Grilles/Diffusers	Caryaire/MK precision/System Air
	Biosafety Cabinet	Esco/Nuair/Klenzaid
	Autoclave	Pharmalab/Klenzaid/Machinfabrik
	Dynamic Pass Box	Esco/Klenzaid/I-Clean
	Individually ventilated cage systems	Citizen/Orchid/Tecniplast/Allenton
	Fire Alarm System	Honeywell/System Sensor/GST/Siemens
	Door Interlock & Access Control	HID/LG/ESFL
	UPS & Inverter	Tata Emerson/APC/Sukam

CCTV Camera	BOSCH/Pelcin/Sony
LCD for CCTV display	Samsung/LG/Sony/Panasonic
Butterfly Valves :	Audco/ C&R/ Castle/ Arrow/Intervalve
Gate Valves	Leader/ BankimSarkar/ Divine/ Sant
Balancing Valves	Advance / C&R/ Castle/ Arrow/ Audco
Y – Strainers	Emerald/ Scientific device/Rapidcool
NR Valves	Advance /C&R/ Castle/ Arrow/ Univass
Flow Switch.	Jhonson/Honeywell/Staefa
HVAC Control valves	Honeywell/ Johnson/ Danfoss
3-Way Valves	Johnson/ Honeywell/Siemens
Modulating Motors :	Honeywell./Jhonson/Siemens/Danfoss
Pressure & Temperature gauges	H. Guru/ Fiebig/ Japsin/Forbesmarshall
LT Panel	CPRI approved manufacturer
Electrical Switch Gears	L&T/ABB/Siemens/Schneider
Starters.	L & T/Siemens/ABB
Distribution Board	Legrand/L7T/ABB/Havells/Schneider
Cables and wires	Polycab/Finolex/Gloster/National
CAT6 cables	AT&T/KABEL/LUCENT/LAPP/Digilink
Protection Relays	ABB/L&T/Seimens/Schneider
Single phase preventor	L&T / Minilec
Fire damper with controls	Caryaire/ Dynacraft/ Ravi star
V belt/ Pulley	Fenner/ Dunlop
Heaters	Daspas/Escorts
Ammeter/Voltmeter	Rishabh/L&T/Schneider
PVC Conduits and accessories	Precision/Polycab/Supreme
Prefabricated wall and ceiling panels	Nicomac/I-Clean/GMP
Laboratory Doors	Nicomac/I-Clean/GMP
Epoxy Coating	Dr. Beck / Apurva / Fosrok

Any item not included above shall conform to the relevant BIS specifications, wherever applicable.

9.0

CHECKLIST FOR SUBMISSION OF TECHNICAL PROPOSAL & COMPLIANCE

The Bidder shall submit the technical proposal and details for the offered item / equipment along with supporting details like drawings, catalogues and brochures in support of compliance.

S.No	Item of Work	Proposed Make/model	Offered Specification w.r.t. Tender	Supporting Documents Submitted (Catalogue/drawing/brochure)	Reference BSL-3 Lab where similar item/equipment is supplied and installed by the Contractor
1	Chiller Pack				
2	Air Handling System for BSL-3 Lab area				
3	Hot water generator				
4	Exhaust Blower				
5	Chilled and Hot water pump				
6	Supply and exhaust/return air ducting				
7	Insulation				
8	HEPA Filters				
9	HEPA Plenums				
10	AHU Controls				
11	VAV Devices				
12	VFD's				
13	Isolation dampers				
14	Dampers & Actuators				
15	BMS System				
16	Double Door Autoclave				
17	Biosafety Cabinet				
18	Garment Cabinet				
19	Dynamic Pass Box				
20	Dunk Tank				
21	Main Electrical Panel (LT panel)				
22	Electrical SLD				

23	Electrical Light Fittings & Fixtures				
24	Electrical Switches & Sockets				
25	Data and Voice Outlet Sockets				
26	Fire Detection & Alarm system				
27	Door Interlock and Access Control system				
28	CCTV system				
29	UPS & batteries				
30	Inverter & batteries				
31	Shower System				
32	Air Compressor				
33	Effluent Decontamination system				
34	Service Pendant				
35	Hand and eye wash station				
36	Exhaust Canopy/Hood				
37	Prefabricated wall and ceiling panels				
38	Doors				
39	View panels / windows				
40	Epoxy Flooring				
41	Plumbing system				
42	Water Softening System				
43	Individually Ventilated Cage System				
44	Effluent Decontamination System				

PROFORMA OF PRICE BID**PART A**

The rates to be quoted for each item of the Price Bid/BOQ in Indian Rupees, both in figures and words for the execution of work on 'Turnkey Basis' including all the required material, labour, accessories, tools & tackles etc., taxes, duties & levies for the complete work, as per Scope of Work, Specifications and approved design & drawings. All the pages shall be stamped and signed by the authorized representative of the Bidder. The Price Schedule with rates and amount duly filled in and signed shall be submitted in a separate sealed envelope, as given in Instructions to Bidder.

S.No.	Item of Work/Description	Unit	Quantity	Rate (In Figures)	Rate (In Words)	Amount
A	Detailed Design and preparation of working drawings, Construction and Establishment of Biosafety Level-3 (BSL-3) Laboratory Facility and associated works at RCB on 'Turnkey Basis' in accordance with the Fifth edition of BMBL Guidelines issued by the U.S. Department of Health and Human Services, CDC, USA' including Testing, Commissioning and Validation of the facility. The scope of work shall include Detailed Design & preparation of working drawings, Internal construction and finishes, plumbing System and associated works, Electrical System and associated works, HVAC System and associated works, Building Management System, shower system, Door Interlock & access control system, FDA system, CCTV System, UPS & Inverter, Intercom and LAN (Data & Voice) system, Autoclave, Biosafety Cabinets, Pass Box, dunk tank, garment cabinets, hand & eye wash stations, work stations, air compressor, and water softening plant and					

	associated works as given in the Scope of Work and Technical Specifications, as per approved designs and drawings on 'Turnkey Basis' including 24x7 operations and comprehensive maintenance for 1 st Year after completion and handing over.					
	TOTAL (A) in Figures Rupees					
	TOTAL (A) in Words Rupees					

Signature & Seal of Bidder

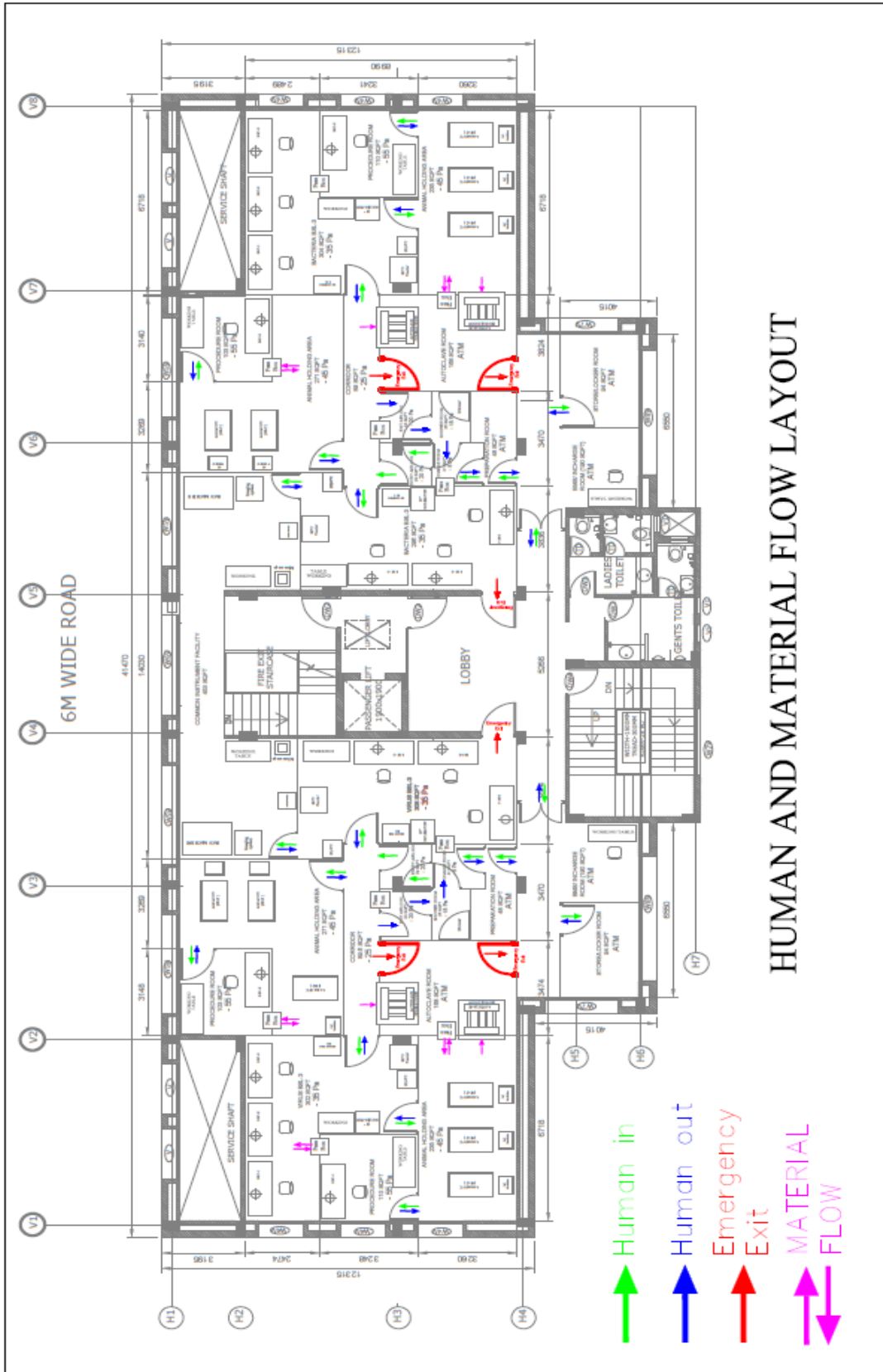
PART B

Comprehensive Operation & Maintenance Services of the BSL-3 Laboratory including spares and consumables as given in the Scope of Work. The comprehensive operation & maintenance services shall be at the discretion of the Employer and may be availed for a period of 3 years, as required and decided by the Employer. The rates quoted by the Bidder shall be inclusive of required material, labour, accessories, tools & tackles etc., taxes, duties & levies for the complete work and shall remain firm, fixed and valid for acceptance for the entire duration and shall remain binding on the Bidder. The quoted rates for comprehensive operation & maintenance services shall be considered for evaluation of Price/Financial Bids.

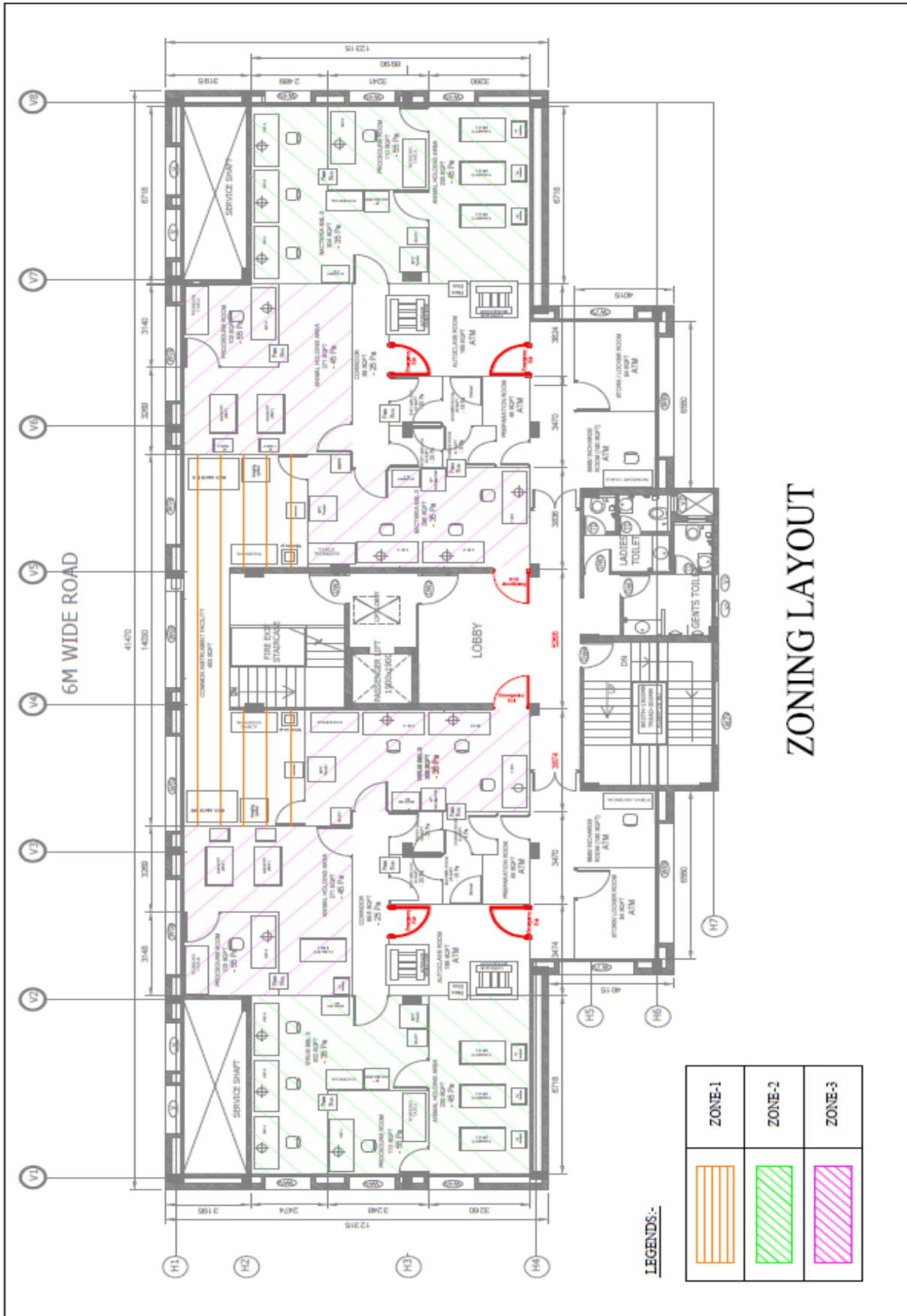
S.No.	Item of Work/Description	Unit	Quantity	Rate (In Figures)	Rate (In Words)	Amount
B	Comprehensive Operation and Maintenance Services Providing Comprehensive Operation and Maintenance Services for Three Years after Handing Over including providing required manpower, tools and tackles, spares, consumables, taxes, duties & levies etc., Annual Validation of the Laboratory, complete as given in the Scope of Work, Technical Specifications Conditions of Contract.					
B1	During 2 nd Year, after Handing Over					
B2	During 3 rd Year, after Handing Over					
B3	During 4 th Year, after Handing Over					
	TOTAL (B) in Figures Rupees					
	TOTAL (B) in Words Rupees					

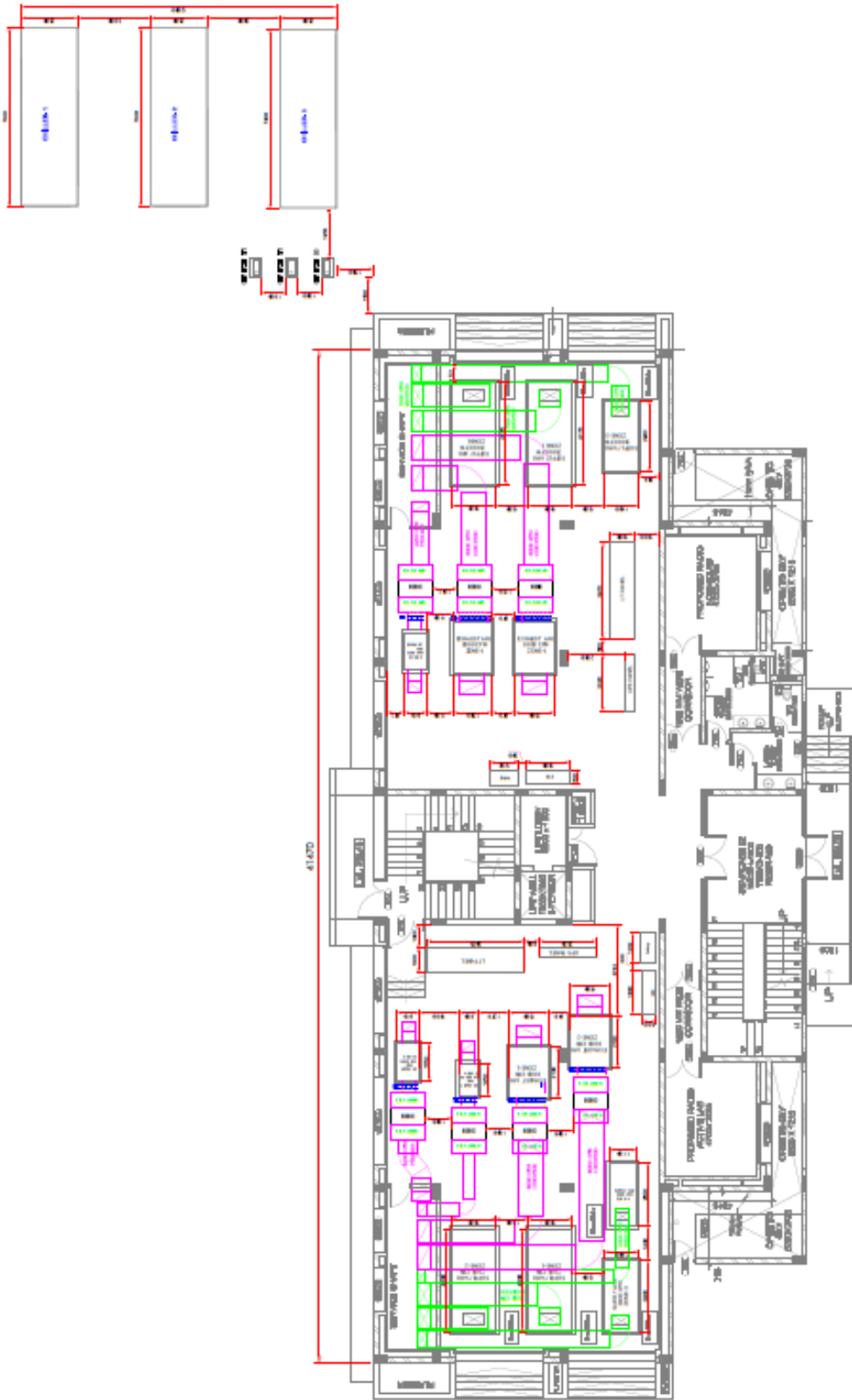
Signature & Seal of Bidder

TENDER DRAWINGS



HUMAN AND MATERIAL FLOW LAYOUT





PLANT ROOM (GROUND FLOOR)