



EPC TENDER

FOR

**DESIGN, CONSTRUCTION, TESTING, COMMISSIONING
AND VALIDATION OF BSL-3 LABORATORY, BSL-2
LABORATORY & ANIMAL FACILITY (EPC MODE)
INCLUDING OPERATION & MAINTENANCE**

AT

**INSTITUTE OF ADVANCED VIROLOGY, THONNAKKAL,
THIRUVANANTHAPURAM**

**Tender No. HITES/IDS/IAV-BSL/23/28
[e-tender ID: 2024_HITE_189396_1]**

VOLUME -3 SCC

SPECIAL CONDITIONS OF CONTRACT

HITES
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(e-Tender)

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1. SPECIAL CONDITIONS OF CONTRACT - SCOPE OF WORK

These Specific Conditions of Contract shall be read in conjunction with General Conditions of Contract and NIT. If there are any provisions in these Specific Conditions of Contract which are at variance with the provisions in the above-mentioned documents, the provisions in these Specific Conditions of Contract shall take precedence.

1. SCOPE OF WORK:

1.1 About the Institute :

The Institute of Advanced Virology (IAV) is an autonomous institution under Department of Science and Technology; Government of Kerala functioning at Bio 360 Life Sciences Park, Thonnakkal, Thiruvananthapuram. The Institute undertakes high-end research in the area of basic as well as translational virology to study the viruses and viral infections in a multifarious approach. The Institute plans to establish a BSL III facility towards handling and conducting research on highly infectious pathogens.

1.2 Land:

The proposed site is about 3acres (approx.). The site is situated on the National Highway 47, near Attingal in Thiruvananthapuram District. It lies about 24 km north of Thiruvananthapuram and 46 km south of Kollam. The main attraction of the place is Mahakavi Kumaran AsanSmarakam. Trivandrum International Airport is the nearest airport and the railhead is Chirayinkil Railway Station.

The bidder shall be provided with a Site Plan of the campus, Concept Plans of the proposed buildings in the campus, Technical specifications and other details forming the part of bid documents. The Bidders shall prepare their detailed designs based on these drawings and documents and in conformity with the local Bye-laws. Any modification in the Site Plan and concept plan, required to meet the conformance to the local bye laws, shall be done with the approval of HITES.

1.3 SCOPE OF WORK:

The scope of work includes Design, Construction, Testing, Commissioning and Validation of BSL-3 Laboratory, BSL-2 Laboratory and Animal Facility (EPC Mode) including Operation and Maintenance at Institute of Advance Virology, Thonnakkal, Thiruvananthapuram

The scope of the work shall be as detailed in Vol-1, Section- III (Scope of Work) of the tender document.

1.4 PROPOSED BUILDING:

- a) The proposed building is a G+1 storeyed building. The proposed floor layout plan of the building are provided in the tender drawings, for reference of bidders.
- b) If any additional space is required to be constructed to accommodate the services and utilities, the same shall be planned, designed and executed by the contractor without any additional cost. It may be noted that no additional payment shall be given or request entertained on this account.

1.5 LABORATORY EQUIPMENT/ITEMS INCLUDED IN SCOPE OF WORK:

- (a) Double Door Autoclave
- (b) Dynamic Pass Box (PB)
- (c) Dunk Tank (DT)
- (d) Effluent Decontamination System (BLED PLANT)
- (e) Ventilated garment cabinets (VGC)
- (f) Lockers for change rooms
- (g) Walk-thru-shower
- (h) Hank and emergency eye wash
- (i) Work stations in BSL-3 and BSL-2 Laboratories
- (j) Non fabric chairs in BSL-3 and BSL-2 Laboratories

The tentative quantity of the above equipment/item are shown in the tender drawings. The client shall reserve the rights to make changes in the size, dimensions, location and quantity of the above equipment/item during finalization of designs based on scientific requirements and all such changes and instruction same shall be implemented and provided by the contractor. The supply of the above equipment/items shall be made only after approval of HITES / IAV.

Other Laboratory Equipment/items shown in the tender drawings like IVC's, Biosafety Cabinets, Procedure tables, centrifuge, incubator, sequencer, down draft table etc. shall be supplied by the Client/Employer. The Contractor shall plan, design and provide all services and utilities like power, drain, water, compressed air, CO2, vacuum required for these equipment/items. The cost of providing the services and utilities shall be deemed to be included in the offer and nothing extra shall be payable on this account.

WARRANTY:

Complete system should be having 3 years warranty (on site) from the date of completion of the installation, testing, commissioning and validation. The warranty will commence from the date of handing over the facility after validation of BSL-3 Laboratory, BSL-2 Laboratory and Animal Facility.

1.6 Reference to the Standard Codes of Practice

- All Standards, Technical Specifications and Codes of practice referred to shall be latest editions including all applicable official amendments and revisions. The EPC Contractor shall make available at site all relevant Indian Standard Codes of practice as applicable.
- Wherever Indian Standards do not cover some particular aspects of design/ construction, relevant International Standards shall be referred to. The EPC contractor shall make available at site such standard codes of practice.
- In case of discrepancy among Standard codes of practice, Technical Specifications and provisions in Employer's Requirements, the order of precedence shall be as below:

- i) Concept designs & Tender Drawings along with Design Basis Report (DBR).
- ii) Special Conditions of Contract.
- iii) General Conditions of Contract, NIT, ITB.
- iv) Technical Specifications.
- v) CPWD Specifications.
- vi) Indian Standard Specifications of BIS
- vii) National Building Code, 2016 & ECBC.
- viii) Sound engineering practices and as per directions of the Engineer-in-Charge.

In case of discrepancy in reference to Standard Codes of Practice, the order of precedence shall be BIS, IRC, BS, ASTM, DIN

The tenderer shall submit with the tender “Time Schedule” for completion of various portions of works. This schedule is to be within the overall completion period of **18 months, including the time period for design, construction, testing, commissioning and validation including getting approvals/permissions/permits from the statutory authorities including Occupancy / Completion Certificate**. The detailed programme in the form of a Critical Path Method (CPM) network shall include all activities starting from design to completion. The manpower planning during the project period shall be presented in the form of a histogram along with the time schedule. The planned schedule of procurement of equipments and major materials shall be submitted in the form of a procurement schedule.

1.7 Statutory Approvals:

- i. The Contractor shall obtain all necessary approvals from Municipal and other local bodies, Municipal bodies, Water supply agencies concerned, Electric Supply and inspectorate. Agencies concerned, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation, Air Force Department, in accordance to prevailing rules, Building Bye-Laws, tree replantation etc., as the case may be with National Power Grid corporation , NHAI but not limited to, related to/ required for Construction/ Completion. The contractor shall also coordinate and assist for obtaining EIA approval. All expenditure on this account will be borne by the contractor. Statutory payment on this account will be reimbursed by the client at actuals on production of payments. These approvals shall include obtaining approval of all the competent authorities and other statutory bodies like Ministry of Environment and forests, State Pollution Control Board, civil aviation, railways and local development bodies etc. as applicable and necessary according to the local Acts, Laws, Regulations, etc. and make any changes desired by such authorities at no extra cost.
- ii. Obtaining approval of the Architectural drawings from relevant local statutory body & obtain Commencement Certificate from local bodies leading to commencement of construction of the project if required.
- iii. Obtaining proof checking of structural designs from an IIT/ NIT or any reputed / equivalent institutions.
- iv. Obtaining NOCs (No Objection Certificates) from Fire Department, Electrical Inspectorate, Storm water drainage & sewerage department, Municipal Corporation/ Local Bodies, Civil Aviation, Railways, completion and/ or occupancy certificates etc. as required.
- v. Obtaining approval of electrical drawings from Central/ State Electrical Inspectorate, as applicable, if required.

- vi. Any other approval required from the appropriate Statutory Authorities/ Local Bodies.
- vii. AERB approval, if required, for the building to be constructed
- viii. Satisfactory Validation of the BSL-3 Lab, BSL-2 Lab and Animal Facility
- ix. Rules & Regulation of Department of Biotechnology for certification of facility
- x. Any other statutory, local bye laws as applicable for the functioning of facility

CLIENT/ HITES may, at the written request of the Contractor, assist him in obtaining the approvals from relevant authorities. However any such request by the Contractor shall not bind the CLIENT/ HITES in any manner. The original documents of approval shall be submitted to HITES/Client.

1.8 Operation:

The contractor shall carryout the day to day operation of BSL-3 Laboratory, BSL-2 Laboratory & Animal Facility for 3 years after successful completion of the work and handing over of facility. During this period the Contractor is liable to provide the required services/preventive maintenance as per the scope, inclusion and exclusion given in the tender documents.

For this the successful bidder shall enter into agreement with Client and the payments for which will be made on prorated basis at the agreed rates.

1.9 Operation & Maintenance:

The contractor shall carryout the comprehensive operation and maintenance services (CMC) of the BSL-3 Laboratory, BSL-2 laboratory & Animal Facility as per the direction of Client for a period of seven years after the prescribed DLP period i.e from forth year onwards after handing over the facility .

For this, the successful contractor shall enter into agreement with Client directly and the payments for which will be made on prorated basis at the agreed rates.

1.10 Special care for existing services:

The scope of work includes dismantling, if any existing Structure, Shed, well etc, services and utilities falling in the project area and supporting/shifting & making functional existing services/sewerage and water supply lines etc. The contractor shall properly take care & safe guard all the existing services in the area affected by the construction of proposed Site.

1.11 Tender Drawings:

The tender drawings are for e-Tender Purpose only and are intended as a guide to the Bidder / Contractor and give general layout of buildings and general information of the structures and general positions of utilities, services and equipment. The Drawings and Specifications provide an indicative requirement of the works and general design principles and shall be developed, tested and warranted to comply with the design & drawings, specified performance criteria and requirements, and relevant statutory and project requirements.

The bidder/contractor shall prepare their designs & drawings based on the tender drawings, Design Basis Report and technical specifications provided in the tender document. The master plan / concept plan shall not be varied without approval of the Engineer-In-Charge. The drawings of the respective buildings/ blocks, as provided in the tender documents, shall also be followed

unless there is a requirement for their modification/correction as per requirement of the statutory bye laws, and, changes, if any required, due to structural designs consideration shall also be incorporated with the approval of the Engineer-In-Charge. This shall also hold good in respect of drawings/ SLD/ schematic/ P&I diagrams/ drawings for Services Component, process flow chart etc. All relevant modifications/revisions as required are to be done by the contractor at his own cost and any claim raised by the contractor in this regard shall not be valid in this contract and shall not be accepted by the HITES.

1.12 Designs

The Design Basis Report, tender drawings and technical specifications are provided to the bidders to ensure a clear understanding of the design standards and other associated parameters that the Client/ HITES wishes to achieve for different components of the project. While the Client/ HITES is keen to see innovation, but the required standards of design must be achieved. Contractors shall outline the means by which they will ensure design quality and the design objectives, which have influenced their scheme. This shall include details of how the Client/ HITES's objectives are to be achieved.

Laboratory Design Guidelines/Standards:

In general, the following reference guidelines shall be used and followed for planning and design of laboratories:

- a) BSL-3 & BSL-2 Laboratories:
 - DBT Guidelines (Guidelines for the establishment of containment facilities: BSL-2 & BSL-3 and certification of BSL-3 Facility- issued vide No. PID-15011(11)/5/2020-PPB-DBT dated 18.12.2020),
 - ICMR guidelines for establishment of BSL-3 laboratory
 - Laboratory Biosafety Manual of WHO (4th edition)
 - BMBL guidelines issued by CDC/NIH (6th edition)
- b) Animal Facility:
 - CPCSEA Guidelines for laboratory animal facility
- c) CPWD specifications, relevant IS Codes, National Building Code-2016 facility, ASHRAE/ISHRAE& other relevant guidelines/standards and specifications as applicable.

The building and laboratory facilities shall be completed to high standards of design, construction and specifications. The facilities shall be technically sound and functionally suitable in line with the provisions given in the above guidelines/standards, DBR and to meet the Client/HITES's objectives.

1.13 Scale

All drawings shall be prepared to the scale as required for proper explanation and shall indicate the size and location of all equipments and accessories therein. The Contractor shall follow all dimensions of approved architectural drawings for the work or part concerned and check proposed drawings for any interference with the building structure or other equipment or services.

1.14 Shop drawings/ Design

The Contractor shall furnish for approval of the Engineer-in-charge requisite sets of detailed Shop drawings as stipulated/requirements of the contract and specially for Facade work, Aluminum works, Door/Windows, Structural Glazing Work, Structural Steel work, Sanitary, Plumbing, Firefighting (external & internal), Pump room, Electrical works, LV works, HVAC, Effluent Decontamination, External MEP services integration and all other works within scope of this contract.

These drawings /documents shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also the details of all related items of work of other trades. The work will be executed by the contractor based on the approved shop drawings from the Engineer-in-charge/ concerned authority and accordingly contractor will be responsible for obtaining all required final NOC / clearance from concerned authorities. All shop drawings are to be made in accordance with latest fire safety norms and building codes.

- a. All drawings necessary for assembly, erection, maintenance, repair and operation of the equipment shall be furnished and different parts shall be suitably numbered for identification and ordering of spare parts.
- b. For any amendments proposed by Engineer-in-charge/ concerned authority in the above drawings, the Contractor shall supply fresh sets of drawings with the amendments duly incorporated, along with the drawings on which corrections were indicated.
- c. No material or equipment may be brought at Site until the Contractor has the approved Shop drawings for that particular material or equipment.
- d. After approval of the drawings by the Engineer-in-charge, the Contractor shall further furnish six sets of Shop drawings for the exclusive use of and retention by the Engineer-in-charge.
- e. Approval of drawings by the Engineer-in-charge shall not relieve the Contractor of any obligation to meet all the requirements of the Contract or of the correctness of his drawings. The Engineer-in-charge's approval of specific item shall not mean the approval of the assembly of which it is a component. The Contractor shall be responsible for and is to bear the cost for all alternations of the works due to discrepancies or omission in the drawings or other particulars supplied by him, whether such drawings have been approved by the Engineer-in-charge or not.
- f. Where the work of the Contractor has to be installed in close proximity to, or will interfere with the work of other trades, the Contractor shall assist in working out the space conditions to make a satisfactory adjustment. If so directed by the Engineer-in-charge, the Contractor shall prepare composite working drawings and sections to a suitable scale not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, and it is cause for any interference with the work of other trades, he shall make all the necessary changes without extra cost.
- g. All shop drawings and detail drawings will be made as per requirements of local authorities and tender drawings incorporating all latest regulations and requirements. No separate drawings will be, issued for making shop drawings.
- h. Unless otherwise prescribed, the contractor shall submit two sets of shop drawings/technical submittals/data sheets/any other details required for approval of the Engineer-In-Charge. The contractor, after incorporating modifications /

deletions/observations/ amendments suggested by the Engineer-In-Charge, shall submit six corrected sets of such documents for final approval and issuance.

1.15 Approved Makes:

- a. Specification/brands names of materials/equipment to be used or supplied as per the scope of work are listed in the Vol-5 Technical Specifications. For all other materials /equipment the same shall conform to the relevant Indian Standards or in their absence conform to any International Standards and as approved by the Engineer-in-Charge.
- b. All material and equipment shall conform to the relevant Indian Standards/ IEC codes and bear IS marking where ever applicable. Where interfacing is involved, such equipments shall be mutually compatible in all respects.
- c. Where an item of equipment, other than as specified or detailed on the drawings, is approved by Engineer-in-charge, requires any re-design of the structure, partitions, foundation, piping, etc. or any other part of the mechanical, electrical or architectural layout, all such re-design, and all new drawings and detailing required therefore, shall be prepared by the Contractor at his own expense and approval obtained from the Engineer-in-charge.
- d. All similar equipment, materials, removable parts of similar equipment etc. shall be inter-changeable with one another.
- e. The contractor shall submit to the Engineer-in-charge for approval details of all proposed materials, equipment, accessories, equipment characteristics and capacity details of all equipment, accessories and devices etc. as per the specifications and obtain approval of the Engineer-in-charge.

1.16 Project/ Work Execution/Construction:

1.16.1 Commencement of work.

The commencement of work is to be reckoned as per Clause 5 of the General Conditions of Contract (GCC). The work shall be executed as per EPC mode. It is anticipated that the Contractor shall be taking up planning and design activities, and mobilization for initial two months, before any construction can commence at the site. No extension of time whatsoever shall be granted on account of planning and design & mobilization activities or delay if any, accruing on account of these activities.

1.16.2 Handing Over and Clearing of Site:

- a. The site of work is available.
- b. The contractor is required to arrange the resources to complete the entire project within the total stipulated time. Traffic diversion, if required, is to be done and maintained as per requirement of the traffic police and / or as per specifications, by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.
- c. There may be some services crossing the earmarked area of the project premises. The scope of work includes dismantling of services, if any, falling in the construction area and supporting/shifting & making functional existing services/sewerage and water supply lines etc. The contractor shall properly take care & safe guard all the existing services in the area affected by the

construction.

- d. Necessary arrangement including its maintenance is to be made by the contractor for temporary diversion of flow of existing services, drain(s) and road(s) etc., as the case may be. The existing services, drain(s) and road(s) etc., would be demolished, wherever required with the progress of work under the scope of proposed project. The existing services, drain(s) and road(s) etc., which are not in the alignment of the said project but are affected and / or need to be demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in this regards shall be deemed to be included in the quoted rates and contractor shall not be entitled for any extra payment whatsoever in this regard.
- e. The information about the public utilities (whether over ground or underground) like electrical/telephone/water supply/sewerage lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain the utilities that are to be affected by the works through the site investigation.
- f. The contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/re-alignment of existing public utilities if any. HITES/Client shall only assist the contractor for liaisoning in obtaining the approval from the concerned authorities.
- g. Any services affected by the works must be temporarily supported by the contractor who must also take all measures reasonably required by the various bodies to protect their service and property during the progress of works. It shall be deemed to be the part of the contract and not extra payment shall be made to the contractor for the same.
- h. If the work is carried out in more than one shift or during night, no claim on this account shall be entertained. The Contractor must take permission from the different statutory/ Govt. authorities etc. if required for work during night hours. No claim / hindrance on this account shall be considered if work is not allowed during night time.
- i. The Contractor shall be responsible for the watch and ward / guard of the buildings safety, equipment, fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.

1.16.3 Construction of Building & Infrastructure:

Based on the Concept Designs, Design Basis Report and other drawings, Technical Specifications and other documents given in the tender, approved Good for Construction Drawings/ Shop Drawings, Finishing /Flooring Schedule, approved makes of materials/equipment, Schedule of Doors / Windows fittings & fixtures, Schedule of Plumbing/Sanitary Fittings /Fixtures, Scale of amenities, the Construction of buildings, associated infrastructure & external development work & services, including, parking area, connecting bridge shall be carried out and completed by the Contractor in a phased schedule as specified in the tender document. Scope of the Construction work shall also include but not limited to the following:

- a. As per approved Architectural, Structural Drawings & Designs, Construction of foundation/sub structure & entire structure work shall be executed including carrying out complete internal & external finishing work, flooring work, doors

& windows, external façade work, water proofing treatment of terrace & toilets /kitchen/ pantry etc. of the proposed building.

- b. Complete levelling/dressing including filling of earth, its supply, disposal of surplus earth / debris / malba etc. if any is to be completed as directed by the Engineer-in-charge.
- c. Besides the scope of work as referred above, the construction of Building & Services with associated infrastructure shall include the following along with other utilities required for smooth functioning of the facility taking into consideration all statutory regulations:
 - i. All aspects of quality assurance, including testing services components of the work
 - ii. Training and orientation of Client's personnel on various systems installed as part of this contract
 - iii. Project Management to ensure completion of Project as per specified timelines.
 - iv. Validation of the BSL-3 Laboratory, BSL-2 Laboratory and Animal Facility including external validation and all the required support to the Client for BSL-3 Laboratory certification by DBT.
 - v. Submission of the completion (i.e. as built) drawings and other related documents.
 - vi. Clearance of site before handing over of the facilities after full filling all the obligations.
 - vii. Handing over of the facilities in phases and overall after completion of project after fulfilling all obligations and responsibilities as per Contract.
 - viii. Making Good any defect (if any) within Defect Liability Period.
 - ix. Perform Operation & Maintenance of the facility after handing over.

1.17 The Contractor shall take all precautionary measures to safeguard safety measures against any accidents for the Contractor's employees, labour, public, and staff of HITES/Client by providing all necessary safety equipment, helmets etc. at work site.

1.18 The scope of work and contract price includes cost of all materials, manpower, equipment, T&P fixtures, accessories, royalties, taxes, watch & ward, and all other essential elements for completion Any change, modification, revision etc. required to be done by HITES/Client, local bodies, proof consultants and validation of the facility etc. in accordance with applicable standards and bid document will have to be done at Contractor's cost and nothing extra shall be payable.

1.19 The scope of work is only indicative and not exhaustive. In additions to the above the Contractor shall be responsible for executing all the works/ items required for completing all the building and other services in all respect to make the facility habitable and ready for occupation as per direction of Engineer- in-charge.

1.20 Approval of Engineer of Client/HITES at any stage of planning, design and construction of the project will not absolve the ingrained responsibility of the Contractor to execute the construction flawless and at par excellence and, if any aspect contrary to this owning up of responsibility is glaring, the Contractor will be held liable for such gross deviation.

1.21 The work shall be executed in accordance with the drawings /design approved by HITES which are prepared by the Contractor in conformity with the scope of the project & specifications, standards and statutory requirements. The Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Engineer-in-charge.

1.22 The Engineer-in-charge may in his absolute discretion and from time to time review the drawings/ designs & approve drawings/ designs and/or written instructions, details, directions and explanations, in regard to:

- a. The variation or modification of the drawings, design, quality or requirement of works or the addition or omissions or substitution of any item.
- b. Any discrepancy in the drawings or between the requirement of works and /or drawings and/or specifications.
- c. The removal from the site of any material brought thereon by the contractor and the substitution of any other material thereof.
- d. The removal and/or re-execution of any works executed by the contractor.
- e. The removal of any persons employed by the contractor on the site.
- f. The opening up for inspection of any work covered up.
- g. The amending and making good of any defects noticed during or after execution of the work.

1.22.1 The contractor shall be solely responsible for the means, methods, techniques sequence and procedure of construction. The Contractor shall be responsible to see the completed work complies accurately with the Contract requirements. The Contractor shall provide all necessary superintendence during the execution of the Works as per contractual provisions.

- a. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. Contractor agrees and undertakes that the construction shall be completed within the Project Completion Schedule and any extension of time granted according to the provisions of this Agreement.
- b. The Contractor shall, subject to the provisions of the Contract, and with due care and diligence, execute and complete the Works & remedy any defects therein in accordance with the Contract. The Contractor shall provide all labour, including the supervision thereof, materials, Constructional Plant and Machineries and all other things, whether of a temporary or permanent nature, required in and for such execution, completion, maintenance and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.
- c. The Contractor must bear in mind that all the work shall be carried out strictly in accordance with the specifications as given in these documents and also in compliance of the requirements of the local public authorities

and to the requirements/ satisfaction/ direction of the Engineer-in-charge and no deviation of any account will be permitted.

- d. The Contractor shall have to use materials from the makes / manufacturers specified in the list of materials of approved brand and/or manufacture contained in the contract documents and as approved by the Engineer - in-Charge. Wherever different pattern/ Design/ Quality of materials with same specification/ make as specified in the contract, is available in the market, Engineer-in-Charge will approve the pattern/ Design/ Quality of the material/ item which shall be final and binding on the contractor. The contractor shall supply samples of all the materials / fittings / fixtures proposed to be used in the work and obtain approval of the Engineer - in-Charge. These samples shall be retained at site till completion of the work. If subsequently it is found that approved material upon testing does not meet the requirement as specified in the contract the contractor shall get approval of alternate material.
- e. The work shall be carried out in conformity with the relevant drawings and the requirement of architectural, electrical, Low voltage system structural, and other specialized service drawings approved by HITES.
- f. The Contractor shall make provision of hangers, sleeves, structural openings and other requirements during construction to avoid holding up progress of the construction schedule. The Contractor should ensure that the structure is designed for additional loads or cut outs. Subsequent Cutting of holes in the RCC structural members /slab shall not be allowed.
- g. The contract items comprise of furnishing of all materials, equipment, labour& transportation etc. necessary to render the installation / item fully operational as per the intent of specifications and drawings, including any necessary adjustment or corrections. Further the installation / item shall be in conformity with local laws and manufacturer's instructions applicable.

1.23 Operation& Maintenance:

The contractor shall carry out operation& preventive maintenance of the entire facility for a period of 3 years after successful completion of the work including validation &handover during which the Contractor is liable to provide the required services (including manpower).

The contractor shall also carry out the comprehensive operation & maintenance (CMC) of the entire facility for a period of 7 years after completion of the DLP ,i.e the CMC will commence from the 4th year from handing over (including manpower).

The manpower to be provided as follows:

- Shift-1 (Morning 9.00 am to 5.00 pm) –Minimum Two technicians and One helper
- Shift -2 & 3 (5.00 pm to 9.00 am) – Minimum One Technician in each shift.

The manpower deployed shall be well trained, technically sound and capable to provide day-to-day operation and maintenance of the installations in the facility. If

the Client finds the manpower deployed by the Contractor are not able to perform the Operation & Maintenance services efficiently, the Client shall reserve the right to request and ask the contractor for replacement of manpower.

1.24 Training & orientation of Client's Personnel

The contractor shall provide necessary training and orientation to the technical personnel deployed by client. The contractor shall arrange visits of the technical personnel / technicians of respective OEM /vendors involved in installation of various electrical and mechanical works under this contract. The duration of training period shall be 15 days or as directed by Engineer-In-Charge with respect to the operation and maintenance troubleshooting of all the equipment and systems installed in the building including in BSL-3Laboratory, BSL-2 Laboratory & Animal Facility.

1.25 Descoping

HITES/Client is authorized to descope any item at any stage of the work. The amount for descoping shall be worked out based on the breakup of the financial bid. No extra claim will be entertained in this regard.

1.26 Execution

All the work must be executed as per CPWD specifications /IS codes, other relevant standards and the method statement shall be got approved by EIC before execution.

2 SPECIAL CONDITIONS OF CONTRACT- GENERAL

1. General:

1.1. Force Majeure:

Any failure or delay in the performance by either party hereto of its obligations under his Contract shall not constitute a breach thereof or give rise to any claims for damages if, and to the extent that it is caused by occurrences beyond the control of the party affected, namely, acts of God, floods, explosions, wars, riots, storms, earthquakes, insurrection, epidemic or other natural disasters. The party so affected shall continue to take all actions reasonably within its power to comply as far as possible with its obligations under this Contract. The affected party shall promptly notify the other party after the occurrence of the relevant event and shall use every reasonable effort to minimize the effects of such event and act in all good faith with due care and diligence.

1.2. Compliance with Statutes, Regulations, etc.

The contractor shall conform to the provisions of all statutes, ordinance, laws, acts of the legislature relating to the works, and to the regulations and by-laws of any local or other duly constituted authority and of any water, electric supply and other companies and/or authorities with whose systems the structure is proposed to be connected. The Contractor shall keep the HITES indemnified against all fines or penalties or liability of every kind for breach of any such statutory ordinance, law act of the legislation, regulations, and byelaws as aforesaid.

The contractor shall before making any variations from the drawings or specifications that may be necessitated by such regulations, give to the Engineer- in- charge written notice, specifying the variation proposed to be made and the reasons for making it and apply for instructions thereon. The contractor will not execute any work without written permission from the Engineer-in- charge

The contractor shall bring to the attention of the Engineer-in-charge any specific requirement of the local authorities or any notice required for execution by virtue of such acts, regulations or bye-laws of such authority, or public office. All fees that may be chargeable in respect of these works shall be reimbursed by the HITES on production of authorized receipts.

1.3. Boreholes & Exploratory Excavation

If, at any time during the execution of the Works, the Engineer-in-charge shall require the Contractor to make boreholes or to carry out exploratory excavation, such requirement shall be ordered in writing and shall be deemed to be an additional ordered under the provisions unless a provisional sum in respect of such anticipated work shall have been included in the schedule of items.

1.4. Fossils, Etc.

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site of the works shall be the property of the HITES/ CLIENT/ Government.

1.5. Absence of Specifications

If the user requirements, specifications etc., do not contain particulars of materials and works which are necessary for its proper execution, all such materials shall be supplied and item shall be executed by the Contractor without extra charge and if the Contractor requires any information, he shall request in writing well in advance to commencement of the particular work to the Engineer-in-charge who will clarify the issue within a reasonable time.

1.6. Works by Other Agencies

The Engineer-in-charge reserves the right to use premises and any portion of the site for the execution of any work not included in this contract which it may desire to have carried out by other persons simultaneously, and the contractor shall allow the reasonable facilities for the execution of such work, but shall not be required to provide any plant or material for the execution of such work except by special arrangement with the other agency. Such work shall be carried out in a manner so as not to impede the progress of the works included in the contract, the contractor shall not be responsible for any damage or delay which may happen to or occasioned by such work.

The contractor shall co-operate with other agencies working in the same project, and coordinate his plans and time schedules so that there will be no interference. The Contractor shall forward to the Engineer-in-charge all correspondences and drawings exchanged. Failure to check plans for conditions will render the Contractor responsible for bearing the cost of any subsequent changes found necessary or damages done.

The Engineer-in-charge shall not entertain any claim on account of the Contractor affording necessary facilities to execute the work simultaneously with other agencies executing the works for the same project.

1.7. Quality Assurance

1.7.1. Quality Assurance Programme

The Contractor shall ensure that the Construction, Plants, Goods & Materials and workmanship are in accordance with the requirements specified in this Agreement, Specifications and Standards and Good Industry Practice.

Sources of Materials being supplied shall be intimated to the Engineer and are subject to his approval. Materials that are not specified in the Contract

document shall conform to the relevant Indian Standards or in their absence conform to any International Standard approved by the Engineer.

To ensure that the equipment and services under the scope of this Contract whether manufactured or performed within the Contractor's works or at his sub-contractor's premises or at the HITES's site or at any other place of work are in accordance with the specifications, the Contractor shall adopt suitable quality assurance programme to control such activities at all points necessary. Such programme shall be outlined by the Contractor and shall be finally accepted by the HITES after discussions before the award of Contract. A quality assurance programme of the contractor shall generally cover the following:

- His organization structure for the management and implementation of the proposed quality assurance programme
- Documentation control system.
- Qualification data for bidder's key personnel.
- The procedure for purchases of materials, parts components and selection of sub-contractor's services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases etc.
- System for shop manufacturing and site erection controls including process controls and fabrication and assembly control.
- Control of non-conforming items and system for corrective actions.
- Inspection and test procedure both for manufacture and field activities.
- Control of calibration and testing of measuring instruments and field activities.
- System for indication and appraisal of inspection status.
- System for quality audits.
- System for authorizing release of manufactured product to the HITES.
- System for maintenance of records.
- System for handling storage and delivery.
- A quality plan-detailing out the specific quality control measures and procedures adopted for controlling the quality characteristics relevant to each item of equipment furnished and/or services rendered.

The CLIENT/HITES or his duly authorized representative reserves the right to carry out quality audit and quality surveillance of the system and procedure of the Contractor/his Vendor's quality management and control activities.

1.7.2. Quality Assurance Documents

The Contractor shall be required to submit the following Quality Assurance Documents within three weeks after dispatch of the equipment.

- All Non-Destructive Examination procedures, stress relief and weld repair procedure actually used during fabrication and reports including radiography interpretation reports.
 - Welder and welding operator qualification certificates.
 - Welder's identification list, listing welders and welding operator's qualification procedure and welding identification symbols.
 - Raw material test reports on components as specified by the specification and/or agreed to in the quality plan.
 - Stress relief time temperature charts/oil impregnation time temperature charts.
 - Factory test results for testing required as per applicable codes/ mutually agreed quality plan/standards referred in the technical specification.
 - The quality plan with verification of various customer inspection points (CIP) as mutually and methods used to verify the inspection and testing points in the quality plan were performed satisfactorily.
- i. and/or storage of material or construction activity.
 - ii. The paving of the path for plying of vehicles carrying construction material is more permanent solution to dust control and suitable for longer duration projects. Based on the benefit ratio analysis, the HITES shall include the item of paving of path in schedule of item which can be utilized as a permanent path for client after construction of project.
 - iii. It shall be ensured that C& D waste is transported from the site in after keeping due record on behalf of Engineer-in-charge. The C& D waste shall only be dumped at sites declared as Dumping ground and having arrangements for recycling of C& D waste in the region.
 - iv. Any violation of orders of MoEF including guidelines of State Government, SPCB or any officer of any department shall lead to stoppage of work for which Contractor shall be responsible and no hindrance shall be accounted in this regard.

1.8. **Intellectual Property Rights and Royalties**

- i. Insofar as the patent, copyright or other intellectual property rights in any Plant, Design Data, plans, calculations, drawings, documents, Materials, know-how and information relating to the Works shall be vested in the Contractor, the Contractor shall grant to the HITES, his successors and assignees a royalty-free, non-exclusive and irrevocable licence (carrying the right to grant sub-licenses) to use and reproduce any of the works, designs or inventions incorporated and referred to in such Plant, documents or Materials and any such know-how and information for all

purposes relating to the Works (including without limitation the design, manufacture, installation, reconstruction, Testing, commissioning, completion, reinstatement, extension, repair and operation of the Works).

- ii. If any patent, registered design or software is developed by the Contractor specifically for the Works, the title thereto shall vest in the HITES and the Contractor shall grant to the HITES a non-exclusive irrevocable and royalty-free license (carrying the right to grant sub-license) to use, repair, copy, modify, enhance, adapt and translate in any form such Software for his own use.
- iii. If the Contractor uses proprietary software for the purpose of storing or utilising records the Contractor shall obtain at his own expense the grant of a license or sub-license to use such software in favour of the HITES and shall pay such license fee or other payment as the grantor of such license may require provided that the use of such software under the license may be restricted to use relating to the design, construction, reconstruction, manufacture, completion, reinstatement, extension, repair and operation of the Works or any part thereof.
- iv. The Contractor's permission referred to above shall be given, inter alia, to enable the HITES to disclose (under conditions of confidentiality satisfactory to the Contractor) programmes and documentation for a third party to undertake the performance of services for the HITES in respect of such programmes and documentation.
- v. Any software is developed under the Contract or used by the Contractor for the purposes of storing or utilizing records over which the Contractor or a third party holds title or other rights, the Contractor shall permit or obtain for the HITES (as the case may require) the right to use and apply that Software free of additional charge (together with any modifications, improvements and developments thereof) for the purpose of the design, manufacture, installation, reconstruction, testing, commissioning, completion, reinstatement, extension, repair, modification or operation of the Works, or any part thereof, or for the purpose of any Dispute.
- vi. The HITES reserves the right to use other Software on or in connection with the Works.

1.9. Obtaining Information's related to Execution of work:

No claim by the Contractor for additional payment will be entertained which in consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the works, nor will any mis-understandings or the obtaining of incorrect information or the failure to obtain information relieve him from any risks or from the entire responsibility for the fulfillment of the contract.

- (a) No part of the works shall be covered up or put out of view without the written approval of the Engineer-in-charge and the contractor shall give due notice to the Engineer-in-charge whenever any such work or foundation is or ready or about to be ready for examination and the Engineer-in-charge shall, examine and measure any work before it is covered up or put out of view

and to examine foundations before further work is placed thereon.

(b) Uncovering and making openings

The contractor shall uncover any part or parts of the works or make openings in or through the same as the Engineer-in-charge may direct from time to time and shall reinstate and make good such part or parts to the satisfaction of the Engineer-in-charge at his own cost.

1.10. Examination of work before covering up:

(a) No part of the works shall be covered up or put out of view without the written approval of the Engineer-in-charge and the contractor shall give due notice to the Engineer-in-charge whenever any such work or foundation is or ready or about to be ready for examination and the Engineer-in-charge shall, examine and measure any work before it is covered up or put out of view and to examine foundations before further work is placed thereon.

(b) Uncovering and making openings:

The contractor shall uncover any part or parts of the works or make openings in or through the same as the Engineer-in-charge may direct from time to time and shall reinstate and make good such part or parts to the satisfaction of the Engineer-in-charge at his own cost.

1.11. Miscellaneous:

(a.) Tax Deduction at Source

All Taxes and surcharge as applicable on date shall be deducted from the amount due to the Contractor towards the value of the work done. TDS certificate thereof shall be issued to the Contractor.

(b.) By-Laws of Statutory Authorities

The Contractor and his labour shall not violate municipal /sanitation /health or any other byelaws.

(c.) Delay in starting the work

No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land, encroachment or in the case of clearance of works, on account of any delay in according sanction to estimates in issue of drawings, decisions etc. However, the extension of time shall be granted as per relevant conditions of Contract.

(d.) Site instruction book

For the purpose of quick communication between Engineer-in- charge and the Contractor or his representative, site instruction book shall be maintained at site as described below:

Any communication, relating the works may be conveyed through instructions in the site instruction book. Such a communication from Engineer-in-charge to the Contractor shall be deemed to have been adequately served in terms of the contract once the entries are made and signed by the authorized representative of the contractor. For this purpose the contractor should authorize one of his employees on the site itself. Site instruction book shall have machine numbered pages and shall be carefully maintained and remain under custody of Engineer-in-charge. The contractor can also avail of the site instructions book for urgent communication with Engineer-in-charge. Any instruction which Engineer-in-charge may like to issue to the Contractor may be recorded by the Engineer-in-charge in site instruction book.

(e.) Signages

The Contractor shall provide at his own cost, sign board(s) at directed location(s) having overall size preferably 2 metres by 4 metres, or any other size, indicating name of the project, and a three-D view of the project as well as the name of the Contractor and the CLIENT and HITES with addresses, cost of the Project, date of start & completion, as approved by Engineer-In-Charge. The signboard should be illuminated during night.

- (f.) No idling charges or compensation shall be paid for idling of the contractor's labour, staff or P&M etc. on any ground or due to any reason whatsoever.
- (g.) The Contractor shall mobilize and employ sufficient resources for completion of all the works within the stipulated time period as per agreement and as indicated in the approved Bar Chart/ Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by Engineer-in-charge.

2. Contract Price and Payments

- 2.1. The bidder shall quote their rates in the prescribed format as per "Vol. 7-FINANCIAL BID" of the tender documents. The quoted rates shall be inclusive of all costs towards site visits, survey, geo-technical investigations, planning, designing, site surveys, soil investigations all material, labour, plant and machinery, tools and tackles, batching plant etc. including water & electricity, overhead charges, all taxes (excluding GST), duties, levies statutory charges / levies applicable from time to time and others as specified etc., incidental works and all other charges for items contingent to the work, such as inspection, packing, forwarding, insurance, freight and delivery at Site, watch and ward of all materials & successful installation, testing & commissioning at site etc, including handing over of the works to the Client/HITES and services during DLP.

The fee paid by the contractor for obtaining various statutory approvals shall be reimbursed to him after submission of payment receipts and other relevant documents by the contractor.

The successful bidder shall submit the detailed item wise breakup of their quoted amount in Financial Bid as per the requirement of Engineer In Charge.

- i. Rates quoted shall be firm and shall not be subjected to any price variations except as specifically provided in the contract.
- ii. The price quoted and quantities/works given in the FINANCIAL BID (Vol-7) are liable to variations. Such variations in quantities/works shall not, however, vitiate the contract in any way whatsoever. Contractor shall be paid for the actual additional measured quantities of work executed by the contractor.
- iii. Unless otherwise specified the rates tendered by the contractor shall be all inclusive and shall apply to all shapes, heights, lifts, leads and depth of the building and nothing extra shall be payable to him on any account.
- iv. Royalty, whenever payable, shall be borne by the contractor on the boulders, metal, shingle, sand and bajri etc., or any other materials collected by him for the work direct to the revenue authority of the District / State Government concerned and nothing extra shall be payable on this account.
- v. The words “as specified”, “as described”, “as shown”, “as directed”, or “as approved”, shall mean as described in the specifications, Schedule of Quantities and other Contract documents as shown on the drawings or as directed by Engineer-in-Charge.

2.2. Submission of bill Statement for Works

- a. The Contractor shall submit a detailed project schedule in MS Project within 15 days of award of work, for approval by the Engineer - in- Charge. All the payment shall be made based on the Approved WBS in MS project
- b. The Client shall make interim payments to the contractor as certified by the HITES's Engineer/EIC on completion of a stage, as specified and valued in accordance with the proportion of the Contract Price assigned to each item and its stage in the Contract Document.
- c. The interim payment shall be made on “Pro rata basis” and shall be worked out on the percentage of work done out of total scope of work under their activity/item.
- d. The Contractor shall base its claim for interim payment for completed till the end of the month for which the payment is claimed, valued in accordance with the above sub-Clause, supported with necessary particulars and documents in accordance with this Agreement.
- e. The proportion assigned to an item will apply only to the Contract Price stated in this Agreement. It shall not apply to any additions or reductions to the Contract Price arising from the issue of any Order for Change of Scope.
- f. The Contractor shall submit interim RA bill, within the time stipulated as per General Conditions of Contract to the Engineer-In-Charge in the form as directed, showing the amount calculated to which the Contractor considers

himself entitled for completed Works. The interim RA bill shall be accompanied with the required supporting documents.

- g. The Contractor should submit a compliance certificate, as per Appendix A attached to GCC, in every bill as per provisions of the EPF and ESI Act as amended from time to time.
- h. All running / intermediate & final payments shall be made to the contractor in accordance with the following schedule: The detailed scheduling of the below given schedule shall be done by the contractor and should be submitted to HITES. After receiving approval from HITES, the same has to be scheduled in M S project and payment will be made based on the same.

2.3. Payment Terms

S. No	Description of Item	Break up of total % payable cost		% of Total payable cost
		Item	Sub-group	
1.	All Civil works including connecting corridor and Retaining Wall.			
A.	Planning, Design & Engineering Works- Investigation, planning, Designing and obtaining approvals for works			1.00%
	a. On approval of Engineer-in-charge, the inception report & detailed survey and architectural drawings ready for submission for approval of local bodies and statutory authorities		0.10%	
	b. On approval of structure design by the proof consultant and Engineer-in-charge		0.15%	
	c. On obtaining all required approvals from statutory authorities and local bodies for commencement of Construction as per requirements and directions of Engineer-in-charge.		0.15%	
	d. On submission of all Good for Construction (GFC) drawings as per requirements and directions of Engineer-in-charge:		0.20%	
	i. Architectural drawings	0.10%		
	ii. Structural design & Drawings	0.10%		
	e. On completion of construction		0.40%	
	i. On Completion of Foundation work	0.05%		
	ii. On Completion of 100% Super structure	0.05%		
	iii. On Completion of work	0.10%		
	iv. On obtaining required statutory approvals after completion of works	0.10%		
	vi. On handing over to Client	0.10%		

B	CONSTRUCTION			
	Civil Works			
	i. Foundation Work upto plinth level	15.00%		
	ii. Structure Work RCC frame of the entire building	20.00%		
	iii. Brickwork /Block work & partitioning work	15.00%		
	iv. Flooring, skirting, dado, wall lining work	20.00%		
	v. Doors & Windows	10.00%		
	vi. External Glazing	2.00%	91%	91.00%
	vii. False ceiling Work	4.00%		
	vii. Finishing Work i/c painting (inside & outside)	4.00 %		
	viii. Other Works, viz.Steel work, railing etc.	1.00%		
C	Completion and Handing Over			
	i. On obtaining required statutory approvals after completion of works	4.00%	8.00%	8.00%
	ii. Handing over along with as built drawings	4.00%		
	Total =			100.00%
	Plumbing works			
	All Plumbing works internal and external, sewer line , rain water disposal etc. including Underground sump (Domestic & flushing, ,fire and rain water harvesting) and solar water heater.			
A.	Planning, Design & Engineering Works- Investigation, planning, Designing and obtaining approvals for works			
	a. On obtaining all required approvals from statutory authorities and local bodies for commencement of Construction as per requirements and directions of Engineer-in-charge.		0.10%	
	b. On submission of all Good for Construction (GFC) drawings as per requirements and directions of Engineer-in-charge:		0.30%	1.00%
	i. Design & Drawings for Services	0.30%		
	c. On completion of work			
	i. On Completion of work	0.20%		
	ii. On obtaining required statutory approvals after completion of works	0.20%	0.60%	
	iii. On handing over to Client	0.20%		
B	EXECUTION			
	a. Water Supply & Sewerage System		91.00%	91.00%
	i. Water Supply System	26.00%		

	ii. Sanitary & Sewerage System	26.00%		
	iii. Rain water harvesting System	10.00%		
	iv. Fitting & Fixtures	28.00%		
	v. Solar water heater	1.00%		
C	Completion and Handing Over			
	i. Testing & Commissioning	4.00%	8.00%	8.00%
	ii. Handing over along with as built drawings	4.00%		
	Total =			100.00%

PAYMENT TERMS - ELECTRICAL & ELV WORKS

Sl No	Nature of work	Payment terms
1	Electrification works	
	Approval of :- Design, Drawings (of all services) & Materials - by EIC	1%
	First fix items - piping, boxes etc	14%
	Wiring - Wiring from DBs for various services	25%
	Fixtures - Wiring devices & lights fixtures	20%
	DG set & Synchronizing panel, Panel boards, Cables, Cable support system (trays and similar items) etc.	30%
	Earthing & lightning protection	5%
	Testing and Commissioning on availing permanent power supply	5%
	Addressable fire alarm/public address/talk back system	
	Approval of :- Design, Drawing approval by Statutory bodies & EIC and Materials	1%
	Supply	70%
	Installation	20%
	Testing & commissioning	9%
	IP based CCTV system	
	Approval of :- Design, Drawing approval by EIC and Materials	1%
	Supply	70%
	Installation	20%
	Testing & commissioning	9%
	Access control system	
	Approval of :- Design, Drawing approval by EIC and Materials	1%
	Supply	70%
	Installation	20%

	Testing & commissioning	9%
	Telephone system	
	Approval of :- Design, Drawing approval by & EIC and Materials	1%
	Supply	70%
	Installation	20%
	Testing & commissioning	9%
	Data network system	
	Approval of :- Design, Drawing approval by & EIC and Materials	1%
	Supply	70%
	Installation	20%
	Testing & commissioning	9%
	Building management system	
	Approval of :- Design, Drawing approval by & EIC and Materials	1%
	Supply	70%
	Installation	20%
	Testing & commissioning	1%

Payment Terms (HVAC, LIFT , FIRE &ETP)		
Sl. No	Description of Item	Percentage of payment
1	FIRE FIGHTING WORKS	
i	Fire fighting works at Pump room including supply, installation, testing and commissioning of fire pumps, laying of pipes, valves, sprinklers, extinguishers & other accessories and allied works as per DBR & Technical Specification.	
	Design	10%
	Supply	70%
	Installation	10%
	Testing & Commissioning	5%
	Handing Over including statutory approvals	5%
2	HVAC WORKS	
i	High Side	

	Supply, Installation, testing & Commissioning of Plant Room works including chillers, pumps, piping with insulation upto raisers, valves, pipe fittings, ventilation works, Insulation works, pressurization unit, Electrical works including cabling, earthing& control panels etc for the complete functioning of HVAC System as per DBR & Technical Specification.	
	Designing	10%
	Supply	70%
	Installation	10%
	Testing & Commissioning	5%
	Handing Over	5%
ii	Low Side	
	Supply, Installation, testing & Commissioning of AHUs/FCUs, ducting ,insulation,Riser& floor wise piping works including insulation, valves & fittings, supports, drain piping etc as per requirement for the complete functioning of HVAC System as per DBR & Technical Specification.	
	Designing	10%
	Supply	70%
	Installation	10%
	Testing & Commissioning	5%
	Handing Over	5%
3	LIFT	
i	Supply, installation, testing and commissioning of Lifts	
	Designing	10%
	Supply	70%
	Installation	10%
	Testing & Commissioning	5%
	Handing Over including statutory approvals	5%
4	Supplying testing and commissioning of ETP &including plant room as per Tender documents and direction/approval of Engineer - In - Charge.	
A.	Planning, Design & Engineering Works- Investigation, planning, Designing and obtaining approvals for works	

	a. On obtaining all required approvals from statutory authorities and local bodies for commencement of Construction as per requirements and directions of Engineer-in-charge.	0.10%
	b. On submission of all Good for Construction (GFC) drawings as per requirements and directions of Engineer-in-charge:	0.30%
	i. Design & Drawings for Services	0.30%
	c. On completion of work	0.60%
	i. On Completion of work	0.20%
	ii. On obtaining required statutory approvals after completion of works	0.20%
	iii. On handing over to Client	0.20%
B	EXECUTION	
	a.ETP	
	i. Foundation	30.00%
	ii. Superstructure	50.00%
	iii. Finishing	11.00%
C	Completion and Handing Over	
	i. Testing & Commissioning	4.00%
	ii. Handing over along with as built drawings	4.00%
	Total	100.00%

PAYMENT TERMS - EQUIPMENT

SI No	Nature of work	Payment terms
1	Supply, Installation, Testing and Commissioning of Equipment	
a	On approval of Equipment as per technical specification	10%

b	Delivery of Equipment as per technical specification	60%
c	Installation Completion of supplied Materials / Partial Installation of Supplied Materials along with Measurements	20%
d	Testing and Commissioning on availing permanent power supply in all aspects and final acceptance by Client	10%

2.4. Production of Records

- a. The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying or ascertaining the cost of execution of this Contract or ascertaining the Materials supplied by the Contractor are in accordance with the Specifications laid down in the Contract. The Engineer's decision on the question of relevancy of any documents, information or returns shall be final and binding on the parties.
- b. If any part or item of the work is allowed to be carried out by a subcontractor, assignee or any subsidiary or allied firm, the Engineer shall have power to secure the books of such sub-Contractor, assignee or any subsidiary or allied firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or order.

2.5. Bill Discounting System (BDS)

The payments to the Contractor shall be made by the Client from the plan funds allocated by the Government of Kerala and therefore funds will be released through the Treasury and the Contractor may opt for the bill discounting system as per the norms adopted by Govt. of Kerala from time to time for receiving the payment of bills. No dispute shall be raised by the contractor for the delay in payment. HITES will not be responsible for delay in the release of payment by the Client.

3. Site Management

- 3.1. The contractor shall make own arrangement for temporary office, storage, accommodation and labour huts at his own cost and is responsible for taking the clearance of local authorities, if required, for setting up / construction for

labour camp and same is deemed to be included in the rates quoted by the contractor for the works. The contractor shall check the availability of land before bidding and no claim whatsoever in this regard shall be entertained. The contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The land for the above purposes shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by contractor after completion of the work.

3.2. Contractor's Working Area

Suitable working space will be provided by the Engineer-in-charge to the Contractor as per site conditions and availability. The Contractor may have to carry out some cutting / filling work for making this area workable. The cost of all such Works shall be deemed to have been included in the contract price quoted for the Works and no payment shall be made on this account.

Before commencement of the work, the Contractor shall obtain approval of the Engineer-in charge for the location of cement godown, steel stacking and fabrication yard, site office and shall from time to time take instructions from the Engineer – in- charge regarding collection and stacking of materials at the site.

No excavated earth or building material shall be stacked on areas where other buildings, roads, services or compound wall or any other structure are to be constructed.

All type of demolishing work and rerouting of existing services if any shall be in the scope of EPC contractor, without additional cost.

4. Site Office :-

The contractor shall, within 30 days of issue of letter of acceptance, at his own cost, provide a reasonably furnished air conditioned site office of area 80 Sqm (min) having, a sample room, A.C meeting room, staff rooms along with toilets & pantry with file storage facility, brand new computer (1 No.) with Auto Cad, Broad band (1 No.), Video Conferencing facility and printer (A3-1 No.) with their consumables, a telephone, licensed version MS Project software. Electricity & drinking water shall also be provided by the contractor free of cost for such period.

4.1. Contractor's Temporary Structures

- i. The Contractor may, at his own expense and subject to the approval of the Engineer-in-charge and statutory authorities, as required, construct temporary structures for its site office, stores; Workshop etc. in the working area allocated to him as above and remove the same on completion of Works. The Contractor shall furnish such details of his Temporary Works as may be called for by the Engineer-in-charge and the Contractor shall satisfy the Engineer-in-charge as to their structural safety. The Contractor

shall be solely responsible for the stability and structural safety of all temporary works including obtaining statutory approvals and payment of statutory fees, if any. Should it be necessary to shift the temporary works to some other place during the execution of the works, the Contractor shall do so, at his own cost.

ii. Initial and Final Clearance of site for temporary works:

The Contractor shall be responsible for the clearance of the site of all scrub, debris, rubbish, etc. to be removed off site to a location to be provided by the contractor and approved by the Engineer- in-charge. However, no trees shall be removed without the prior permission of the Engineer-in-charge. The structures, services and works required to be demolished and removed shall also be removed off site to a location as mentioned above. The Contractor shall obtain necessary permissions and approvals from the local authorities for such disposals. The demolition shall include digging, excavating and removal of substructures, foundations and buried works. The cost of all this shall be borne by the Contractor.

The above is applicable for all site offices, labour camps, and godowns etc., which are not required after the work is completed.

iii. Storage, Cleaning and Dewatering

The Contractor shall at all the times during construction keep the Site clean and free from all debris and unwanted materials on a daily basis as per instructions of the Engineer-in-charge.

Storage of materials shall be in an organized manner and in proper compartments as directed by the Engineer - in- Charge. Storage on suspended floors shall not be permitted unless specifically approved in writing by the Engineer-in-charge for specific materials in specific locations and in approved manner. The Engineer-in-charge shall be furnished with load details, if requested, before seeking approval for storage.

Regular cleaning operations shall be undertaken to remove all dust, debris, waste materials etc. A cleaning schedule shall be maintained.

The Contractor shall make his own arrangement for storage of those materials, which can be accommodated at site. Contractor shall be fully responsible for safe custody of the same. Materials shall be considered as “Delivered at Site” only after the physical presence of materials at site are verified by the Engineer-in- charge. Storage of materials / equipment elsewhere shall not be considered as “Delivered at Site.”

The Contractor shall be responsible to keep entire site free from water due to water coming from any source at any level and shall protect all materials and works from being damaged by the water from any source. Contractor

shall make proper arrangements for drainage prior to use of water for curing, testing, cleaning etc.

Any expenditure incurred by the Contractor in fulfilment of his obligations under this sub-clause shall be deemed to include in the financial bid.

The security deposit of the contractor shall be released only after contractor demolishes all structures including foundations and gives back clear vacant possession of this land.

4.2. Care of Works

From the commencement to the certified completion of the whole of works, the contractor shall be responsible for the care, safety and maintenance of the works executed under the contract thereof and of all temporary works. In case of any damage/ loss or injury shall happen to the works or to any part thereof or to any temporary works from any cause whatsoever save and except the expected risks, the contractor shall at his own cost repair and make good the same, so that on completion the works shall be in good order and condition in conformity to every respect with the requirements of the contract. The contractor shall also be liable for any damage to the works occasioned by him including his subcontractors in the course of any operations carried out by him for the purpose of completing any outstanding work and complying with his obligations under the Contract. In case of failure on the part of the contractor the damage/ loss/ injury shall be made good by the HITES at the risk and cost of the contractor.

4.3. Safety in Construction

The contractor shall adhere to the safety, health & environmental guidelines as prescribed in the tender document. Covid-19, Pandemic guidelines shall be followed by Contractor & his workers. The contractor shall employ only such methods of construction, tools and plant as are appropriate for the type of work or as approved by Engineer-in-Charge in writing.

The contractor shall take all precautions and measures to ensure safety of works and workmen and shall be fully responsible for the same. Safety pertaining to construction works such as excavation, centering and shuttering, trenching, blasting, demolition, electric connections, scaffolds, ladders, working platforms, gangway, mixing of bituminous materials, electric and gas welding, use of hoisting and construction machinery shall be governed by the Safety code, relevant safety codes and the direction of Engineer-in-Charge

The Contractor shall be fully responsible for the adequacy, stability and safety of all site operations and methods of construction, the contractor shall ensure that all safety norms are followed as per contractual and other statutory requirements.

4.4. Contractor's Labour Camp

The Contractor shall make arrangements at his own expense for labour camp / accommodation for labour and staff to be employed for execution of the work and their conveyance to Site. Proper ID Cards shall be got approved /authorized by the contractor from the Engineer-in-charge to authorize the Contractor's staff and workers to enter the Site. Setting up of labour camp inside the campus is not permitted.

The contractor shall comply with covid-19 protocol as applicable at the time of execution of work.

4.5. Mobilization of Resources:

Contractor shall not mobilize his resources in terms of materials, machinery, tools & plants, facilities required to implement the project and shall not pay any advances to any party unless he receives letter of Award from HITES. Contractor shall himself be responsible for such cost incurred without receipt of notice to proceed and no such claim of contractor shall be entertained by the HITES.

4.6. Water Supply & Power Supply

The Contractor shall make his own arrangement for water supply at Site for drinking as well as construction purposes & Power Supply at his own cost. Non-availability of power supply and /or water from whatever source shall not entail any additional claims or extension of Contract period in this account.

4.7. Watch & Ward and Lighting

The Contractor shall throughout the execution and completion of the Works and the remedying of the site and the Works and the remedying of any defects therein have full regard for the safety of all persons entitled to be on the site and keep the site and the Works in an orderly state to avoid any accident or danger and provide safety measures, lights, guards, fencing and barricades where ever necessary or required by the Engineer-in-charge, or by any duly constituted authority, for the execution and for the protection of the Work, and/or for the safety and convenience of the public or others and take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to person or property of the public or others resulting from pollution, noise and other causes etc. at his own cost.

4.8. Temporary Barricading

The Contractor shall at his own expense, erect and maintain in good condition temporary barricades all around the working area as per directions of the Engineer- in-charge. The barricading shall be as required or at least 3 meter high approx., whichever is higher. The specifications of barricading shall be got

approved from Engineer-in-charge and external face of barricading to display name of CLIENT & HITES.

- a. The contractor shall make, till completion of the project arrangements for/of:
 - i. Proper pumping for removing water from the basement or elsewhere at site.
 - ii. Proper security, safety, transportation, manpower, lighting arrangement for execution of works at night.
 - iii. Tower crane, batching plant and other plants & machinery, tools and tackles required for timely execution of work.
 - iv. Proper barricading around site so that surrounding area is made free from disturbances.
 - v. Diversion of underground services with the approval of Engineer-in-charge.
- b. Restriction in work areas.
 - (a). The contractor must see the site of the work, its approaches carefully before tendering, No claim of any sort shall be entertained on account of any site conditions. If any approach from main road is required or existing approach is to be improved and maintained, for cartage and materials by the contractor, the same shall be done by the contractor his own cost.
 - (b). No Entry/exit/roads other than specified by the Engineer-in-charge for purpose of construction activities will be allowed to be used for construction activity purposes or movement of trucks/lorries/load-carriers and nothing extra/ delay whatsoever will be accounted for on this part.
 - (c). The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupiers of adjacent properties and to the public in general and to prevent any damage to such properties and any pollution of smoke, streams and water-ways. He shall make good at his cost and to the satisfaction of the Engineer-in-Charge, any damage to roads, paths, cross drainage works or public or private property whatsoever caused thereon by the Contractor. All waste or superfluous materials shall be removed by the Contractor without any reservation entirely to the satisfaction of the Engineer-in-Charge.
 - (d). In the event of any restrictions being imposed by the Security agency, HITES/Client, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the Contractor shall strictly follow such restrictions and nothing extra shall be payable to the Contractor on this account.
 - (e). The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards such as day and night boards, speed limit boards, red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. No

hindrance shall be caused to traffic during the execution of the work.

c. Site Data

- (a). The Contractor, with the Tender documents, has been made available such relevant data in HITES's possession on hydrological and sub-surface conditions. The accuracy or reliability of the data/studies/reports and of any other information supplied at any time by the HITES is not warranted with respect to the viability of his design and execution of Works and the Contractor shall be responsible for interpreting all such data. The Contractor shall conduct further investigations considered necessary by him at his own cost and any error, discrepancies if found in HITES's data at any stage will not constitute ground for any claim for extra time and costs.
- (b). The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works.
- (c). The Contractor shall also be deemed to have inspected and examined the Site, its surroundings, the above data and other available information with respect to the viability of his design and execution of Works and to have satisfied himself before submitting the Tender, as to all the relevant matters including without limitation:
 - i. the form and nature of the Site, type of soil including the sub-surface conditions;
 - ii. the hydrological and climatic conditions;
 - iii. the extent and nature of the work, Plant, and Materials necessary for the execution and completion of the Works and the remedying of any defects;
 - iv. the applicable laws, procedures and labour practices
 - v. The Contractor's requirement for access, accommodation, facilities, personnel, power, transport and other services.
 - vi. The risk of injury or damage to property adjacent to the Site and to the occupiers of such property or any other risk.

d. Access Route

The Contractor shall be deemed to have satisfied himself as to the suitability and availability of the access routes he chooses to use. The Contractor shall (as between the parties) be responsible for the maintenance of access routes. The Contractor shall provide at his cost signs or directions, which he may consider necessary or as instructed by Engineer for the guidance of his staff, labour and others. The Contractor shall obtain any permission concessions and related easement right that may be required from the relevant authorities for the use of such routes, signs and directions.

The HITES will not be responsible for any claims which may arise from the use or otherwise of any access route. The HITES does not guarantee the suitability or availability of any particular access route, and will not entertain any claim for any non-suitability or non-availability for continuous use during construction of any such route.

The Contractor shall pay all traffic surcharges and other royalties, license fees, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials, machine, process, systems, work methods, or Contractor's Equipment required for the Works.

Existing roads and other public roads in the campus may be used by the Contractor at his own risk and cost to carry out construction activities, with prior approval of the competent authority.

The Contractor's heavy construction traffic or tracked equipment shall not travel on any public road or bridge, unless the Contractor has made arrangements with the authority concerned and has obtained the approval of the Engineer to such arrangements. The Contractor shall include in his price the cost of strengthening any such public road or bridge if he considers it would be necessary

The Contractor shall repair any damage to the road or bear the cost thereof due to movement of contractor's plants and equipment, vehicles etc. to the specifications and satisfaction of road authorities as well as of Engineer.

The Contractor shall plan transportation of construction materials to work site in accordance with traffic regulations enforced by local traffic authorities from time to time and in such a way that road accidents are avoided and minimum inconvenience is caused.

No claim whatsoever shall be entertained on this account. The transportation of certain equipment and materials and launching may not be possible during day and may have to be carried out within time schedule specified by traffic police.

e. Traffic regulation and safety measures by the Contractor

- i. The Contractor shall take all the required measures and make arrangements for the safety of other inhabitants during the construction of the Project or a Section thereof in accordance with the provisions of Specifications as applicable.

It shall provide, erect and maintain all such barricades, signs, markings, flags, and lights as may be required by Good Industry Practice for the safety of the traffic passing through the Section under construction or maintenance.

- ii. All works shall be carried out in a manner creating least interference to traffic passing through the Project Site or a Section thereof. In stretches where construction or maintenance works on the carriageway are taken up, the Contractor shall ensure that proper passage is provided for the traffic. Where it is not possible or safe to allow traffic on part width of the carriageway, a temporary diversion of proper specifications shall be

constructed by the Contractor at its own cost. The Contractor shall take prior approval of the Engineer for any proposed arrangement for traffic regulation during Construction and Maintenance, which approval shall be granted promptly and reasonably.

5. Safety, Health and Environment

Over and above the provisions made in Safety Code (part of General Conditions of Contract) the following will also be applicable:

- 5.1. In respect of all workmen directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractor shall at his expense arrange for the safety provisions as per Indian Standard Safety codes shown below and shall at his own expense provide for all facilities in connection there with. In case the contractor fails to make arrangement and provide necessary facilities, he shall be liable to pay compensations prescribed under Workmen Compensation Act 1923 as amended from time to time for each default and in addition the Engineer-in-charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the cost incurred on that behalf from the contractor, and no claims what so ever shall be entertained.
- 5.2. Details regarding some special provisions to be followed by contractor are as follows:
 - a. **Usage of quality Personal Protection Equipments (PPEs)** through approved vendors. PPEs would include amongst others the following items:
 - i. Safety Helmets.
 - ii. Hearing Protection.
 - iii. Respiratory Protection.
 - iv. Eye Protection.
 - v. Protective Gloves.
 - vi. Safety Footwear.
 - vii. High Visibility Clothing (Jacket) with approved Logo

All the items should be got approved before issued to the use in the work. Safety Jacket should have HITES Logo as per the size approved.

The contractor shall provide all the PPE (Personnel Protective Equipment) and safety appliances required to carry out the job to all the workmen deployed by the contractor and also ensure that his workmen use those PPE and safety appliances while on the job. The contractor shall not pay any cash amount in lieu of PPE to the workers/sub-contractors and expect them to buy and use during work. If the contractor fails to ensure provision of safety appliances and its workmen do not use the PPE and safety appliances as needed for safe working, the owner may ask the contractor to stop the work and comply with safety requirements first. The contractor shall at all time

maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the HITES during the inspections. Failing to do so shall invite appropriate compensations as per the provisions of under Workmens Compensation Act 1923 as amended from time to time.

It is always the duty of the contractor to provide required PPEs for all visitors. Towards this required quantity of PPEs shall be kept always at the security post.

b. Colour coding for helmets

Safety helmets with colour code for labourers, contractor's staff, HITES and Client Staff, Visitors etc to be provided at site by the contractor.

c. Working at Heights

Contractor shall ensure that work at height is properly planned for any emergencies and rescue appropriately supervised, and carried out in a manner, which is reasonably practicable safe. Contractor shall ensure that work at height is carried out only when the weather conditions do not jeopardize the health or safety of persons involved in the work. Guardrail, Toe-board, Barrier or similar collective means of protection shall be of sufficient dimensions, of sufficient strength and rigidity for the purposes for which they are being used, and otherwise suitable.

Working Platform shall be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area-having regard to the work being carried out there. Possess a suitable surface and, in particular, be so constructed that the surface of the working platform has no gap through which a person, material or object could fall and injure a person. A working platform and any supporting structure shall not be loaded so as to give rise to a risk of collapse or to any deformation, which could affect its safe use. Strength and stability calculations for scaffolding shall be carried out by the contractor. The dimensions form and layout of scaffolding decks shall be appropriate to the nature of the work to be performed and suitable for the loads to be carried and permit work and passage in safety.

A personal fall protection system designed for use with an anchor shall be securely attached to at least one anchor, and each anchor and the means of attachment thereto shall be suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading. Suitable and sufficient steps shall be taken to prevent any person falling or slipping from

a personal fall protection system. Any other steps in the opinion of engineer-in-charge suggested will also be taken in Protection system

Only metal ladders shall be allowed. Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it. A ladder shall be so positioned as to ensure its stability during use. A suspended ladder shall be attached in a secure manner and so that, with the exception of a flexible ladder, it cannot be displaced and swinging is prevented. No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.

d. Lifting appliances and gears.

The contractor shall maintain a register for record of examinations and test details of all lifting appliances. This register should also contain a system of identification of all tools and tackles, its date of purchase, safe working load etc. Contractors can utilize the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories with the permission of the HITES.

e. Automatic safe load indicators

Every lifting appliances and gears like cranes, hydras etc, if so constructed that the safe working load may be varied by raising or lowering of the jib or otherwise shall be attached with an automatic indicator of safe working loads approved by Bureau of Indian standards/ International certifying bodies which gives a warning to the operator and arrests further movements of the lifting parts.

f. Qualification of operator of lifting appliances and of signaller etc.

The contractor shall not employ any person to drive or operate a lifting machine like crane, hydra etc whether driven by mechanical power or otherwise or to give signals to work as a operator of a rigger or derricks unless he is above twenty- one years of age and possesses a valid heavy transport vehicle driving license as per Motor Vehicle Act and Rules, is absolutely competent and reliable, possesses the knowledge of the inherent risks involved in the operation of lifting appliances by undergoing a formal training at any institution of national importance, is medically examined periodically

6. Requirements for Planning & Design Capabilities

- 6.1. Site Analysis, Topographic survey and Soil Investigation is included in the scope of the contractor. The levels in the concept drawings are indicative

only and the designs shall be done based on the actual levels taken at site.

- 6.2. For planning and design, the bidder should have in-house design capacity to carryout comprehensive planning and design of this project as per requirements and the bidder with his in-house design capacity. In case, the bidder does not have in house capacity to carryout comprehensive planning and design of this project, then the bidder shall engage Firm/ Consultant with the approval of HITES EIC, which shall provide the required comprehensive consultancy services for planning and design from commencement to completion of the project based on the Master plan & Concept designs and DBR provided to the bidder as a part of bidding documents. In such a case the bidder shall depute Project Design Coordinator of requisite qualification and experience who shall coordinate all the required planning & design activities.
- a. The approved Firm/Consultant shall be associated with the project from commencement till completion.
 - b. Irrespective of the approval of Firm/Consultant as proposed by the bidder and approved by Engineer-In-Charge, the entire responsibility for all coordination and providing the required design services is sole responsibility of the Contractor.
 - c. The Contractor's in house design personnel or approved Firm/Consultant design personnel (in case of outside agency) inclusive of Architects, Structural, MEP, Landscaping etc. shall regularly visit the project site and other locations during execution of work for discussions, clarifications and attending various meetings with Client/HITES etc. wr.t the project and as per directions of Engineer-In-Charge.
 - d. The contractor has to submit physical 3D model of the project in any suitable scale as per requirement of Client / HITES.

6.3. **Design and Construction**

6.3.1. Obligations prior to commencement of Works

Within 7 (seven) days of the Commencement Date, the Contractor shall:

- (a) appoint its representative (the "Contractor's Representative") duly authorised to deal with the HITES in respect of all matters under or arising out of or relating to this Agreement;
- (b) undertake and perform all such acts, deeds and things as may be necessary or required before commencement of Works under and in accordance with this Agreement including approval from Statutory Authorities, Applicable Laws and Applicable Permits; and
- (c) Make its own arrangements for procurement of materials needed for the Project under and in accordance with the Applicable Laws and Applicable Permits.

- 6.3.2. Project completion Schedule is set out in the contract document. Design shall be developed in conformity with the specifications and standards set forth in the contract document.

6.3.3. Engagement of Proof Checking Consultant

The Proof checking consultant for vetting/proof checking of structural designs shall be engaged by the Contractor and the same shall be from any Indian Institute of Technology/National Institute of Technology/ Govt. Institute as approved by HITES for which the requisite request shall be submitted by the Contractor. The Contractor shall get the structural details / design & drawings proof checked from the approved proof checking consultant as per requirements and at his own cost. Nothing extra shall be payable to the contractor by HITES on this account.

6.3.4. The Contractor shall submit the designs and drawings, duly certified by the Proof Consultant, to the Engineer for review. Provided, however, that the contractor shall ensure and provide the Engineer-In-Charge additional drawings that may be required for its review in accordance with Good Industry Practice.

The programme for submission of the design shall be finalised in consultation with the Engineer-In-Charge.

6.3.5. Contractors r's Warranty of Design

- (a) The Contractor shall be fully responsible, for the suitability, adequacy, integrity, durability and practicality of the Contractor's proposal.
- (b) The Contractor warrants that the Works have been or will be designed, manufactured, installed and otherwise constructed and to the highest standards available using proven up-to-date good practice. By submitting the Drawings for review to the Engineer-in-charge, the Contractor shall be deemed to have represented that it has determined and verified that the design and engineering, including field construction criteria related thereto, are in conformity with the Scope of the Project, the Specifications and Standards and the Applicable Laws.
- (c) The Contractor warrants that the Contractor's Proposals meet the requirements and is fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Requirements or any part thereof, the Contractor's Proposal shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at Contractor's own cost.
- (d) The Contractor warrants that the Works will, when completed, comply with enactments and regulations relevant to the Works.
- (e) The Contractor warrants that the design of the Works and the manufacture of plant have taken or will have taken full account of the effects of the intended manufacturing and installation methods, Temporary Works and Contractor's Equipment.
- (f) The Contractor shall also provide a guarantee from the Designer

for the design for suitability, adequacy, and practicality of design for HITES's Requirements.

- (g) The Contractor shall indemnify the HITES against any damage, expense, liability, loss or claim, which the HITES might incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.
- (h) The Contractor further specifies and is deemed to have checked and accepted full responsibility „for the Contractor“ s Proposal and warrants absolutely that the same meets the HITES's Requirements:

The Contractor shall be fully responsible for the Plants, Materials, goods, workmanship, preparing, developing and coordinating all design Works to enable that part of the Works to be constructed and/or to be fully operational in accordance with the Contract's requirements.

Apart from the Contractor, the above warranty shall also be applicable for his designer. This warranty shall be a part of his subcontract with the designer and should be made available at the time of signing of the Agreement.

No claim for additional payment or extension of time shall be entertained and/or no review and/or observation of the Engineer-In-Charge and/or its failure to review and/or convey its observations on any Drawings shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Engineer or the HITES be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in the Drawings, they and the construction works shall be corrected at the Contractor's cost, notwithstanding any review under this section.

6.3.6. In respect of the Contractor's obligations with respect to the design and Drawings of the Project as set forth in tender document, the following shall apply:

- (a) The contractor shall furnish design and drawings to HITES and in such sequence as is consistent with the Project Completion Schedule, required number of copies of all Drawings, to the HITES for review;
- (b) The HITES shall review the drawings and convey its observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards.
- (c) If the aforesaid observations of the HITES indicate that the Drawings are not in conformity with the Scope of the Project or the Specifications and Standards, such Drawings shall be revised by the Contractor and resubmitted to the HITES for review within 7 days of receipt of communication from Engineer. The HITES shall give its observations, if any, within 7 (seven) days of receipt of the revised Drawings; and

- (d) the Contractor shall be responsible for delays in submitting the Drawing as set forth in Schedule-F caused by reason of delays in surveys and field investigations, and shall not be entitled to seek any relief in that regard from the HITES.

6.3.7. The Contractor's time and cost impacts of revisions arising from review by the HITES of designs caused by the Contractor's non-compliance with the requirements of this Agreement shall be borne by the Contractor, unless there is a change in the Scope of the Works.

6.3.8. The Works shall be executed in accordance with the design reviewed by the HITES, and shall not thereafter be amended or altered without the prior written approval of the HITES. If HITES/ Contractor becomes aware of an error or defect of a technical nature in the design that HITES/ Contractor shall promptly give notice to the other Party of such error or defect. Such error or defect shall be rectified by the Contractor, without any cost to the HITES.

7. Setting out of the Works

The contractor shall be responsible for the true and proper setting-out of the Works in relation to original points, lines and levels or reference issued by Engineer-in-charge in drawing or in writing and for the correctness, subject as above mentioned, of the position, levels, dimensions and alignment of all parts of works and for the provision of all necessary instruments, appliances and labour in connection therewith. If, at any time during the progress of the works, and during defects liability period, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do by the Engineer-in-charge and/ or his authorized representative shall at his own cost, rectify such error to the satisfaction of the Engineer-in-charge. The checking of any setting out or of any line or level by the Engineer-in-charge not in any way relieve the Contractor of his responsibility for the correctness thereof. The Contractor shall carefully protect and preserve the benchmarks; sight-rails, pegs and other things used in setting-out the Works. Any rectification works required should be done by the Contractor at his own cost.

8. Quality of Materials & Equipment's, Workmanship and Test

8.1. All the materials used in the work shall be subjected to the mandatory tests as prescribed in the specifications detailed in Schedule F of the General Conditions of Contract and other specifications referred to in the contract and workmanship shall be the best of the respective kinds described in the Contract and in accordance with the Engineer-in-charge's instructions and shall be subjected from time to time to such tests as the Engineer-in-charge may direct at the place of manufacture or fabrication or on the Site or at an approved testing laboratory. The source of supply and / or manufacturing within/ outside India may be inspected by the Engineer-in-charge or any representative as nominated by the HITES. The expenditure on this account is deemed to be included in the rate quoted.

The contractor shall upon the instruction of the Engineer-in-charge's representative furnish him with documentation to prove that the materials & goods comply with the requirements of contract and for requirement stated above. The Engineer-in-charge may issue instruction in regard to removal of material from site or any work, if these are not in accordance with the contract. The contractor shall provide such assistance, instruments, machinery, labour and materials as are required for examining, measuring, sampling, testing of material or part of work.

8.2. Audit Inspection/ Technical Examination/Third Party Inspection

The HITES/ Engineer-In-Charge shall have the right to cause Audit Inspection by Audit team under Comptroller and Accountant General of India./ Technical Examination by Chief Technical Examiner under Central Vigilance Commission, Govt. of India /Third Party Inspection of the works and the final bills of the contractor including all supporting vouchers, abstracts, etc. to be made as per payments of the final bill. The Contractor shall provide all assistance and full access to site to carry out inspection and perform tests at site, to provide samples for testing in outside laboratories and to show site records and their records as asked for by the inspecting teams. Findings of such inspection shall be notified to contractor and contractor shall be bound to take remedial measures to the satisfaction of Engineer-in-charge. If as a result of such Audit Inspection/ Technical Examination/Third Party Inspection, the sum is found to have been overpaid in respect of any work done by the contractor under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over payment and it shall be lawful for the HITES/ Engineer-in-charge to recover the same from the Security Deposit or Performance Security of the contractor or from any dues payable to the contractor. If it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid. Since, the work comes under the purview of CVC, all such orders and instructions issued by CVC are applicable to this work.

In the case of any audit examination and recovery consequent on the same the contractor shall be given an opportunity to explain his case and the decision of the HITES/ Engineer-in-charge shall be final. Payment on this account will be recovered from the contractor.

In the case of Technical Audit /Third Party Quality Assurance /Audit by an independent agency/ individual/firm/institute at any time, consequent upon which there is a recovery from the contractor, recovery shall be made with orders of the HITES/ Engineer-in-charge whose decision shall be final.

8.3. Samples

- i. The HITES will not supply any materials required for execution of the Works under this Contract. The Contractor must, therefore, make his own arrangements for timely procurement of various materials including steel and cement etc.
- ii. Prior to ordering any equipment/ material/ system, the Contractor shall submit to the Engineer-in-charge the catalogues, along with samples from approved list of manufacturers. No material shall be procured without written approval of the Engineer-in-charge.
- iii. All samples of materials and /or items of works in adequate numbers, sizes, shades & pattern as per specifications shall be supplied free of charge by the contractor without any extra charge. All other expenditure required to be incurred like conveyance for taking the samples for testing at the laboratory, packing, etc., shall be borne by the contractor. If the test results do not conform to the specifications and standards laid down, the materials shall be rejected, the contractor shall remove such materials from site. The laboratory for testing of samples shall be decided by the Engineer – in charge, whose decision shall be final and binding.
- iv. Contractor shall submit Samples to the Engineer-in-charge for approval. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at the site, detailed literature / test certificate of the same shall be provided to the satisfaction of the Engineer-in-charge. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalogue numbers and the use for which intended and otherwise as the Engineer-in-charge may require to review the submittals for the limited purposes required by paragraph (d) below. The numbers of each sample to be submitted will be as specified in the Specifications, or as shall be specified by the Engineer-in-charge.
- v. Submittal Procedures
 - a. Before submitting each Sample, Contractor shall have determined and verified all materials with respect to intended use, fabrication, shipping, handling, storage, assembling and installation pertaining to the performance of the Work and All information relative to Contractor's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programmes incident thereto.
 - b. Each submittal will bear a specific written indication that Contractor has satisfied Contractor's obligation under the Contract Documents with respect to Contractor's review and approval of that submittal.
 - c. At the time of each submission, contractor shall give the Engineer-in-charge specific written notice of such variations, if any; that the sample submitted may have from the requirements of the contract document. Such notice shall be separate from the submittal and in addition shall cause a specific notation to be made on each sample submitted for review and approval of each such variation

vi. Review and Approval:

- a. Sample shall be reviewed and approved only to determine if the items covered by the submittals will, after installation or incorporation in the work, conform to the information given in the contract documents and be compatible with the design concept of the completed project functioning as a whole as indicated by the contract documents, drawings.
- b. Review and approval will not extend to means, methods, techniques, sequences or procedures of construction. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make corrections required by Engineer-in-charge and shall submit as required new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for and by the Engineer-in-charge on previous submittals.
- c. Above referred review and approval of Samples shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Document unless Contractor has in writing called the Engineer-in-charge attention to each such variation at the time of submission as specified above and received written approval of each such variation by specific written notation thereof incorporated in or accompanying the Sample approval; nor will any approval by Engineer-in-charge relieve Contractor from responsibility for complying with the requirements of contract.
- d. Only when the samples are approved in writing by the Engineer-in-charge, the contractor shall proceed with the procurement and installation of the particular material / equipment. The approved samples shall be signed by the Engineer-in-charge for identification and shall be kept on record at site office until the completion and acceptance of the work and shall be available at the site for inspection / comparison at any time. Samples approved shall be kept in the sample room till the completion of the work. The contractor shall keep with him a duplicate of such samples to enable him to process the matter.
- e. For items of works where the samples are to be made at the site, the same procedure shall be followed. All such samples shall be prepared at a place where it can be left undisturbed until the completion of the project.
- f. The Engineer-in-charge shall communicate his comments / approval to the Contractor to the samples at his earliest convenience. Any delay that might occur in approving of the samples for reasons of its not meeting with the specifications or other discrepancies, inadequacy in furnishing samples of appropriate quality from various manufacturers and such other aspects causing delay on the approval of the materials / equipment's etc., shall be ascribable to the account of the contractor. In this respect the decision of the Engineer-in-charge shall be the final.

vii. On delivery of the supplies of materials / equipments for permanent works at the site, the contractor shall specifically arrange to get the supply

inspected by the Engineer-in-charge and compared with the approved sample and his specific approval obtained before using the same in the work.

viii. Cost of Tests

The cost of making any test shall be borne by the Contractor as intended by or provided for the Contract or as found necessary by the Engineer-in-charge for ascertaining whether the quality of materials intended to be used by the Contractor in the Works is acceptable, whether any finished or partially finished work is appropriate for the purposes for which it was intended to fulfill.

ix. Testing facilities

The Contractor shall, at his own cost, provide testing facilities as per CPWD specifications and IS Codes at site as stipulated in the General Conditions of Contract (GCC) or as directed by the Engineer-in-charge including staff required for testing. The tests shall be carried out jointly in the presence of Engineer-in-charge or his representative and the contractor or his representative.

The contractor shall also provide suitable weighing and measuring arrangement and testing instruments and machines for testing of materials and cubes at site as per details given in GCC.

The contractor shall carryout all the mandatory tests and shall maintain records of testing & checks of material, in formats, checklists etc. to be given by Engineer-in-charge. All such records shall be maintained jointly by the contractor and Engineer-in-charge these shall remain under the custody of the Engineer-in-charge.

The laboratory shall be connected to the main potable water, electricity and other Services.

Some of the mandatory tests for each item of work and /or materials shall be carried out in approved outside laboratory as directed by the Engineer-in-charge. The Contractor shall bear the entire cost of testing charges for samples of items of work and /or materials and also the other expenditure towards making samples, packaging, and transport etc.

The materials brought at site of work shall not be used in the work before getting satisfactory test result as per relevant mandatory tests, detailed in the relevant CPWD specifications and BIS codes.

8.4. Manufacturer's Instructions

Where manufacturers have furnished specific instructions relating to the materials and equipment used, covering points not specifically mentioned in

these documents, manufacturer's instructions shall be followed with the approval of Engineer-in-charge.

8.5. Inspection & Testing during manufacturing of Equipment

The Engineer-in-charge shall be entitled to inspect, examine and test during manufacturing of the materials and workmanship and check the progress of manufacturing of all fabrication materials to be supplied under the contract on the contractor's premises during working hours, and if part of the said materials is being manufactured on other premises, the contractor shall obtain Engineer-in-charge permission to inspect the same at such premises. This inspection, examination or testing shall not relieve the contractor from any obligation under the contract. Inspection Call for any equipment shall be given 15 days in advance from the actual date of Inspection.

Following Equipment shall be invariably offered for Inspection:-

- 1) HT/LT Panels
- 2) DG Set
- 3) Bus Ducts & Rising Mains
- 4) HT & LT Cables
- 5) Lift
- 6) UPS
- 7) Chillers
- 8) Autoclave
- 9) Effluent decontamination plant
- 10) HEPA filter containment housing

In case of other equipment, the Contractor shall intimate HITES/Engineer-in-charge regarding their readiness so as to decide on their inspection, if any.

The Engineer-in-charge reserves the right to request inspection and testing at manufacturer's Works at all reasonable times during manufacture of items for this Contract.

The Engineer-in-charge or his authorised representative shall have full power to inspect the materials and workmanship at the Contractor's Works or at any place from which the materials or equipment is obtained. Approval by the Engineer-in-charge of any material or equipment shall in no way relieve the Contractor of his responsibility for meeting the requirements of the specifications. The cost incurred towards boarding, lodging etc. (inland/abroad) of inspection engineer/engineers deputed by HITES shall be fully borne by the contractor & all such costs shall be deemed to be included in the Bid. Nothing extra shall be paid on this account whatsoever. The inspection and testing shall cover, but not limited to, the following:-

- i. Routine and typical tests for the various items of equipment shall be performed at the Manufacturer's/ Contractor's Workshop in the presence of Engineer-in-charge or his authorised representative, results recorded and test certificates issued.
- ii. After installation has been virtually completed, the Contractor shall carry out under the direction and in the presence of the representative of the Engineer-in-charge such tests and inspections as have been specified, or as considered necessary to determine whether or not the requirements of the item, drawings and specifications have been fulfilled. In case the work does not meet the full intent of the drawings and specifications and further tests after making require changes and as considered necessary shall be done again, the Contractor shall carry them out and bear the expenses thereof. If tests fail to demonstrate the satisfactory nature of the installation or any part thereof, then no claims for the extra cost of modifications, replacement or retesting will be considered. The decision of the Engineer-in-charge shall be regarded as final as to what constitutes a satisfactory test.
- iii. The Contractor shall provide all necessary instruments such as Theodolite, Dumpy level, steel tapes, weighing machine, plumb bobs, spirit levels, hammers, micro-meters, thermometers, hydraulic cube testing machine, smoke test machine and labour, etc. for conducting tests. All such equipments shall be tested for calibration by an approved laboratory. The Contractor shall make adequate records of the test procedures, readings and results to be maintained by the Engineer-in-charge who shall issue test certificates signed by the person authorised by him.
- iv. The contractor shall arrange all necessary instruments, tools, tackles and testing facilities free of cost for such inspections. Contractor shall arrange for inspection visit(s) and bear all inspection costs including Inland/ abroad travel (Air/Rail/Road), lodging and boarding expenses etc. free of cost for the Inspection Engineer(s) deputed by HITES.
- v. The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere
- vi. Dates for Inspection & Testing
The dates of Inspection & Testing, after receipt of written request by the Contractor, shall be mutually agreed by the Engineer-in-charge and the contractor.
- vii. Facilities for Testing at Manufacturer's Works
Where the contract provides for tests on the premises of the contractor or of any sub-contractor the contractor shall provide such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as may be required and as may be reasonably demanded to carry out such tests.

viii. Rejection

If as a result of such inspection, examination or test of the works (other than a Test on Completion the Engineer-in-charge shall decide that such material is defective or not in accordance with the contract he shall notify the contractor accordingly stating in writing his observations and reasons thereof. The contractors shall with due diligence make good the defect and ensure that the material complies with the Contract. Thereafter, if required by the Engineer-in-charge, the tests shall be repeated under the same terms and conditions till satisfactory results are made available.

ix. Delivery of Materials and Equipment

The contractor shall be responsible for all materials and equipment brought at site for the purposes of the contract. Unless the Engineer-in-charge directs, no material shall be brought to the site which is not required for execution of the work.

x. Inspection & Testing and Re-inspection

All deficiencies revealed by testing and inspection shall be rectified by the contractor at his own expense and to the satisfaction and approval of the Engineer-in-charge. Rectified components shall be subject to re-testing till desired results are obtained.

xi. Delayed Tests

If the Engineer-in-charge opines that Tests on Completion are being delayed by the Contractor, the Engineer may by notice require the Contractor to carry out such Tests within 14 (fourteen) days after the receipt of the notice. The Contractor shall carry out such Tests on such day or days as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to carry out the Tests on Completion within 14 (fourteen) days, the Engineer may proceed with such Tests at the risk and cost of the Contractor. The Tests on Completion then shall be deemed to have been carried out in the presence of the Contractor and the results of such Tests shall be accepted as accurate.

xii. Inspection Reports

The contractor shall provide the Engineer - in- Charge with five copies of reports of all inspection and tests.

8.6. **Access for Inspection**

Persons nominated by Engineer-in-charge shall at all reasonable times have free access to work and/ or to the workshops, factories or other places where materials are lying or from which they are being obtained and the Contractor shall extend necessary service to Engineer-in-charge and their

representatives every facility necessary for checking measurements, inspection and examination and test of the materials and workmanship

9. Time Schedules

- 9.1. Time shall be the essence of the contract. Time allowed for carrying out the work as mentioned in the contract shall be strictly observed by the contractor and it shall be reckoned from the issue of the Letter of Award. It may be noted that the construction of involves construction of the building including development of the site as detailed in the detailed user requirement. The milestones shall be as detailed in schedule “F” of the General Condition of the Contract. The contractor shall before commencing the work prepare a detailed work schedule. This schedule shall be strictly followed by the contractor. For completing the work in time, the contractor may have to work round the clock without interruption and no claim whatsoever shall be entertained on this account.
- 9.2. Commencement of Works
 - i. The Contractor shall commence the Works on the date specified in the Letter of Award. Thereafter the Contractor shall proceed with due diligence, without delay, and in accordance with the programme or any revised or modified programme of the Works.
 - ii. The Contractor shall not commence the construction, manufacture or installation of the Works or of any part of the Works unless and until the Engineer has endorsed the relevant Drawings in accordance with the HITES's Requirements.
- 9.3. Time for Completion
 - i. Project completion Schedule including setting out date of completion in phases as defined under Schedule F of the GCC Vol-II.
 - ii. Time is the essence of Contract and will remain so at all times during the pendency of the Contract including the extended period of Contract. The Contractor shall complete works as per completion schedule and ensure defect free completion and have passed the tests on the completion, including integrated testing where ever in the scope of work and commissioning of the whole of the Works and/or parts thereof before the same is taken over by the Client/HITES.
- 9.4. Mile Stones
 - i. The time allowed for execution of the Works and Mile Stones shall be as specified in the Schedule F of GCC, Vol-II. In case, the contractor does not achieve a particular milestone mentioned in or the re-scheduled milestone(s) by the HITES, the amount shown against that milestone shall be retained and will be adjusted against the Liquidated Damages at the final grant of Extension of Time after completion of work.
 - ii. On failure to achieve a milestone, retaining of this amount from payments due to the contractor shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the entire retained amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s),

amount mentioned against each milestone missed subsequently also shall be retained. However, no interest, whatsoever, shall be payable on such amount retained by the HITES.

10. Completion Certificate

10.1. Provisional Completion Certificate

For the purpose of issuing Provisional Completion Certificate on substantial completion of the phase wise work as provided in Clause 1(v) of GCC (Volume-II), the work shall be deemed to have been substantially completed after fulfilment of all the following for respective phases of construction by the Contractor:-

- a. The phase(s) of the work as per milestone(s)/whole of the Work is substantially completed and has satisfactorily passed required tests that may be prescribed under the Contract and ready to use. The contractor shall handover such certificates to the Engineer-in-charge.
- b. Obtaining all required approvals from the statutory authorities as required for occupation and use of the works and handing over such certificates to the Engineer-in-charge.
- c. Submitting As-Built Drawings, Catalogues, Brochures, and Data Sheets, manuals etc. in the form as directed by Engineer in Charge.

On fulfilment of the above for respective phases of construction, the contractor shall give a written notice to this effect within 10 days of completion along with an undertaking to rectify any shortcoming/defects that may be found during inspection. The Engineer - in- Charge shall jointly inspect the work with the contractor within 15 days of receipt of such notice and see if they are in such a condition so as to be put to its proper or other intended final use and /or occupied without any short comings and no major or minor items of works are remaining which in the opinion of the Engineer-in-charge will cause undue difficulties in satisfactory use/ occupation of the works and issue Certificate of substantial Completion for the respective phases of construction.

10.2. Final Completion Certificate

The contract shall not be considered as completed until a certificate of Final Completion has been issued by the Engineer-In-Charge stating that the works are completed in all respect to his complete satisfaction as per contract and remedying/rectifying all the defects/snags along with the submission of relevant permits/clearance from statutory bodies.

The composite work shall be treated as complete when all the phases and components of the work are complete. The Certificate for Final Completion

of the total work shall be recorded by the Engineer-in-charge after obtaining / recording of final completion certificate of all the components/phases.

The Defect Liability Period (DLP)/Warranty for complete work shall start with effect from the date of final completion of the complete work.

- 10.3. The contractor shall give performance test of the entire work as per standards specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the tests.

11. Handing over & Taking Over Process

Handing over & taking over process shall be done as given in Schedule “F” of the tender document. For handing over & taking over process, in addition to clauses specified elsewhere, following services / works have to be complied with by the contractor:

- a. Submission of Guarantees in stamp paper, of appropriate value, (in prescribed format) for all water proofing treatment and Anti termite treatment etc. executed in the works for a period of ten years. If any defects noticed within 10 years from completion of defect liability period the contractor shall be sole responsible for the defects and same shall be rectified by the contractor as per information from CLIENT/HITES within a period of 10 days from the notice.
- b. Rectification of all defects shall be carried out by the contractor before Handing over/ Taking over process.
- c. As built drawings : - 6 (six) sets for Architectural, Structural, Plumbing, Electrical, HVAC system, Specialized services and other required drawings as approved by Engineer-in-charge along with their soft copies in the required software version shall be submitted by the contractor before handing over & taking over process.
- d. All services/equipment are to be run and checked before handing over & taking over process as per requirements of Engineer-in-charge.
- e. Contractor has to arrange water, electricity, fuel , consumables and manpower at their own cost for the purpose of testing of services and equipment's. No amount shall be payable on this account.
- f. The Contractor shall submit catalogues, brochures, operation manual, manufacturer test certificate, Guarantee/ Warranty papers, licence etc. for all equipment /materials before handing over & taking over process.

12. Guarantees

Notwithstanding provisions in the General Condition of the Contract and elsewhere in these Specific Conditions of Contract, the contractor shall furnish the **guarantees** in the prescribed form appended herewith. These guarantees shall be provided at the stage of virtual completion of work and shall be effective from the completion of work, to be reckoned from the date after the expiry of the defect liability period

prescribed in the contract. In case a specialized agency has been approved for execution of a work/system, the Contractor shall ensure that the Guarantees shall be through such agencies (Obligators/Guarantor). The guarantees shall be provided in respect of following works (as per formats appended to this document) and any additional works, as provided for in the contract.

- i. For removal of defects after completion in respect of Water Supply and Sanitary Installations.
- ii. For Water Proofing Treatment for Basements
- iii. For Water Proofing Treatment for Roof
- iv. For Water Proofing Treatment (Under floors)
- v. For Anti-Termite Works
- vi. For Aluminium Works
- vii. For Structural Glazing / Curtain Wall System /works
- viii. For Mechanical/ Seismic Expansion Joint/ Works
- ix. For any other work, as prescribed in the tender document.

13. Defect after completion

a) General

Any defect, shrinkage, settlement or other faults that may appear within the “Defects Liability Period” which in the opinion of the Engineer-in-charge are due to materials or workmanship not in accordance with the contract, shall be rectified as per the directions in writing of the Engineer-in-charge to the Authorized representative of the contractor within such reasonable time as shall be specified therein by the contractor, at his own cost. In case of default, the Engineer-in-charge may employ any persons to amend and make good such defects, shrinkage, settlements or other faults and all expenses consequent thereon or incidental thereto shall be borne by the contractor.

b) Execution of work of repair etc.

Any defects, shrinkage, settlement or other faults which may appear or be noticed within the defect liability period, and arising in the opinion of the Engineer-in-charge from materials or workmanship not having in accordance with the contract, shall upon the direction in writing of the Engineer-in-charge’s representative and within such reasonable time as shall be specified therein and without any delay, be amended and made good or replaced by the contractor at his own cost.

c) Cost of Execution of Work of Repair, Etc.

All such works shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer-in-charge, be due to the use of materials or workmanship not in accordance with the Contract, or due to neglect

or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract.

d) Contractor's personnel to be at site

During the defects liability period the contractor shall depute their representative on need basis to attend the defects to the satisfaction of Engineer-in-charge/CLIENT.

14. Dues not paid by the Contractor

The contractor shall pay all dues or fees to Statutory authorities and Electric and Water supply authorities & Lift licensing authority etc. within due period and indemnify the CLIENT/ HITES and the Engineer-in-charge from any claims or compensations or penalties or damages arising out of non-payment of any such dues or fees. However, in case some dues or fees are not paid by contractor and or claims for compensations or penalties etc. are raised by the Statutory authorities, the HITES may deposit the required amount or any or all of the above and recover or deduct the same from any money payable to the contractor by the HITES or any other means available to the HITES such as bank guarantee.

15. Urgent Repairs

If, by reason of any accident, or failure, or other event occurring to or in connection with the works, or any part thereof, either during the execution of the works, or during period of Defects Liability any remedial or other work or repair, shall, in the opinion of the Engineer-in-charge be urgently necessary for the safety of the Works and the Contractor is unable or unwilling to do such work or repair despite notice, the Engineer-in-charge may employ and pay other persons to carry out such work or repair as the case may be and may consider necessary. If the work or repair so done by the other agency is the work which, in the opinion of the Engineer-in-charge the Contractor was liable to do at his own expense under the Contract, all expenses incurred by Other agency in so doing shall be recoverable from the Contractor by the Engineer-in-charge, or shall be deducted by the Engineer-in-charge from any monies due or which may become due to Contractor

16. Plant Temporary Works & Materials

a) Plant, etc. Exclusive use for the Works

All Constructional Plant, Temporary Works and materials provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof except for the purpose of moving it from one part of the Site to another, without the consent, in writing of the Engineer-in-charge, which shall not be unreasonably withheld.

b) Removal of Plant etc.

Upon completion of the Works, the Contractor shall remove from the Site all the said Constructional Plant and Temporary Works remaining thereon and any unused materials provided by the Contractor, within 10 days of obtaining the completion certificate/ Virtual completion of the work

17. Reports by Contractor

- a) The Contractor shall submit project schedule and activity wise bar charts, indicating the duration of various subheads of the work, for the complete work within 15 days of award of work or as per Clause 5 of the GCC, whichever is earlier, for approval by the Engineer - in- Charge. On the basis of approved bar charts contractor shall submit Progress Charts on or before 5th day of every month. Soft copy of Schedule shall be supplied whenever demanded by the Engineer-in-charge.
- b) The Contractor shall submit Monthly Progress Report in triplicate in format approved by Engineer-in-charge. Failure to submit reports may result in holding up or delay in Payment of bills.
- c) Monthly Progress Photographs:-The Contractor shall arrange at his own cost to maintain a progress record of the works by taking postcard size colour photographs (preferably digitized photographs) 6 Nos. or more per month per block as directed by the Engineer-in-charge during the construction stages and after completion shall supply three sets at no extra cost. The Contractor will be required to submit monthly reports on the progress of his work as per the format approved by the Engineer-in- charge.
- d) The Contractor shall prepare Weekly Reports of planned and actual progress of work and subsequent week's scheduled work. These will also include material procurement status. These reports shall be submitted to the Engineer-in-charge & shall be reviewed in Weekly Co-ordination Meetings.
- e) The Contractor shall file daily category-wise labour report to the Engineer-in-charge. The report shall indicate scheduled requirement against actual strength.
- f) The contractor shall maintain daily weather record. Daily maximum and minimum temperature and corresponding, humidity shall be recorded and charted. Rainy days shall be recorded when the rain lasting more than one hour hampers the work. Any other inclemency in weather shall be recorded. The records shall be regularly shown to the

Engineer-in-charge and his signature obtained.

18. Operations and Maintenance Manual

The Contractor shall provide and submit to the Engineer-in-charge with six copies of the Operation and Maintenance Instruction Manuals. The arrangement of these manuals shall be as follows:

SECTION A: Index

SECTION B: Salient features of the Project.

SECTION C: Description and details of materials, items and fittings and fixtures used for the project along with Catalogues /Brochures Operation & Maintenance Manuals etc.

SECTION D: Operation & Maintenance instructions

SECTION E: List of recommended Spare parts /consumables.

Until above mentioned documents are received and approved by the Engineer-in-charge, Contract shall not be considered as complete and payment will be withheld until such documents etc. have been submitted to and approved by the Engineer-in- charge. The cost of providing such records including proper submission thereof is deemed to be included in the Bid.

19. Co-ordination Meetings

The Contractor shall be required to attend co-ordination meetings with the HITES/ CLIENT and the other Contractors during the period of Contract as intimated by the Engineer-in- charge. All costs incidental to such interaction shall be to the Contractor's account and no claim will be entertained by the HITES/ CLIENT on this account.

20. Compliance of Statutory Obligations and obtaining Approvals/ Completion Certificates:

The Contractor shall comply all the statutory obligations and obtain all required clearances to implement the project without any financial repercussions to Engineer-in-charge and ensure all follow up actions with the local authorities in this respect for smooth completion of the project. The Contractor shall obtain all necessary approvals from Municipal bodies and other local bodies including, Water/Sewer supply agencies, Electric Supply and inspectorate agencies, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation Department, Lift inspector, Pollution Control Board, , tree replantation, permission for bore well and for temporary structures etc. in accordance to prevailing rules, Building Bye-Laws etc., as the case may be with related to Construction/ Completion. The Client/ Engineer-in-charge shall assist the contractor to obtain all NOC, completion & Occupancy certificates from respective local bodies and other statutory authorities, such as:

- i) Construction Permit, if required
- ii) Pollution control Board,
- iii) Environment Clearances, EIA approval if required
- iv) Provisional & Final NOC from fire department,
- v) Lift license i/c NOC,
- vi) Chief Electrical Inspector CEA,
- vii) Local Municipal authority.

- viii) Airport Authority,
- ix) Forest Department for tree replantation etc.,
- x) Explosive Department,
- xi) Local Municipal authority for water and sewer connection,
- xii) Building Occupancy Certificate
- xiii) Any other statutory requirement for execution of work and to occupy the buildings and run the services in all respects.

Contractor shall organize all inspections of concerned authorities & obtain the NOC's within the time for completion. The Engineer-in-charge may, at the written request of the Contractor, assist him in obtaining the approvals from relevant authorities. However any such request by the Contractor shall not bind the Engineer-in-charge in any manner.

All expenditure on these accounts will be borne by the contractor. However the fees paid by the contractor to these statutory authorities only for obtaining the required statutory approvals shall be reimbursed by HITES on submission of valid payment receipts from these statutory authorities.

The contractor is required to submit the relevant drawings/filled application forms as per prescribed format & any other details like completion Drawings and any other statutory documentary requirements of local bodies in copies as per requirement to obtain the above etc. at their own cost.

21. Training and Operating Instructions

- a. If required by the Engineer-in-charge, the Contractor shall at his cost, train members of the maintenance staff of Client/HITES either at his or the subcontractor's workshop or at such other place or places as may be considered suitable by the Engineer-in-charge.
- b. Upon completion of all work and all tests, the Contractor shall furnish the necessary skilled/unskilled/semi-skilled personnel for operating the entire installation for a period of thirty (30) working days. During this period, the Contractor shall instruct and train the HITES/ CLIENT's representative(s) in operation, adjustments and maintenance of the equipment installed.
- c. The Contractor shall submit to the Engineer-in-charge draft comprehensive operating instructions and maintenance schedule for all systems and equipment included in this Contract. This shall be supplemented, not substituted, by manufacturer's operating and maintenance manuals. Upon approval of the draft, the Contractor shall submit to the Engineer-in-charge six (6) complete bound sets of operating and maintenance schedules along with manufacturers printed literature/catalogues.

22. Test Certificates

The contractor shall submit test certificates for all the materials / systems issued by the Engineer-in-Charge approved inspection / office / manufacturer certifying the

Equipment / Materials / installation and its function are in agreement with the requirements of relevant specifications and accepted standards.

23. Quiet Operation and Vibration

All equipments shall operate under all conditions of designed load without any sound or vibration, which is considered objectionable by the Engineer-in-charge. Such conditions shall be corrected by the Contractor at his own expense. Decision of the Engineer-in-charge shall be final in this regard.

24. Accessibility

The Contractor shall locate all equipments, which require servicing, operation or regular maintenance in fully accessible positions. The exact location and size of access panels, required for each valve or other devices requiring attendance, shall be finalised and communicated to Engineer - in- Charge well in time, to facilitate working by other agencies, failing this, the Contractor shall make all the necessary repairs and changes at his own expense.

25. Licenses and Permits

The Contractor or the approved specialized agency engaged by them shall hold a valid license for services like plumbing, electrical, Lifts etc. & wherever required in addition, issued by the Competent Authority under whose jurisdiction the work falls.

26. PENALTY CLAUSE:

1. The Penalties / fines imposed by statutory authorities such as ALC, RLC, EPF, ESI Authorities, etc. on HITES will be deducted at actuals.
2. The damages if any arises due to negligence of workmen provided by the Contractor, the cost of damages as decided by HITES will be deducted from the monthly claim bill.
3. HITES authorities shall not be responsible for any accidents, injuries, diseases occurred during carrying out the above work. To prevent such incidents the Contractor shall take the appropriate protective measures.
4. For misconduct or indiscipline of any employee including criminal activities, the Contractor shall be responsible to take action against him/her as per the laws/rules
5. Any penalty imposed by client against non-compliance/ non-performance of contract terms will be deducted from the subsequent running bill of the Contractor.

END OF VOLUME 3