

HSCC (INDIA) LTD.

(Consultants & Engineers for Mega Hospitals & Laboratories)

Plot No.6(A), Block-E, Sector-1,NOIDA - 201301 (U.P.)

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NO. : HSCC/NRCE/BSL-3/PG-III/2007

Dated : 12.02.2007

NOTICE INVITING TENDER (NIT)

1. HSCC (India) Ltd. provides Comprehensive services from concept to commissioning in the Health care sector ranging from feasibility studies, planning, design and detailed engineering, project management, procurement and commissioning of medical equipments and procurement of drugs.
2. On behalf of "National Research Centre on Equines(NRCE), Hisar-Haryana, HSCC (I) Ltd. invites sealed tenders from the contractors/firms for the following works :

Name of Work	Bid Security (Rs.)	Cost of Document (Rs.)	Period of Completion
Construction, Testing, Commissioning and Validation of Bio-Safety Level-3 (BSL-3) Laboratory on 'Turnkey Basis' at National Research Centre on Equines (NRCE), Hisar-Haryana, and its maintenance during the Defect Liability period.	5.00 Lakhs	2500.00	12 Months

3. Minimum Essential Mandatory Qualification Criteria :
 - (a) Minimum average Annual Turnover during last three financial years i.e. 2003-2004, 2004-2005 & 2005-2006 should be at least Rs. 75.00 Lakhs.
 - (b) Successful and timely completion of at least one work of similar nature on a single contract value not less than Rs. 200.00 Lakhs or two similar nature works of value not less than Rs.125.00 Lakhs each or three similar nature works of value not less than Rs.100.00 Lakhs each during the last 7 years ending last day of month previous to the one in which bids are invited.
 - (c) Similar works means construction, testing, commissioning and validation of BSL-3 Laboratory including civil works, electrical works, HVAC works and other associated systems and services. The Laboratory must have been duly and successfully validated to operate as a BSL-3 Lab.
4. Applicants may obtain the Tender documents on any working day between **10.00 AM** and **4.00 PM** from **15.02.2007** to **07.03.2007** on written request from HSCC (I) Ltd. at the above address against a non-refundable fee of **Rs. 2500/-** in cash or in the form of Demand Draft/ Banker's cheque in favour of **HSCC (I) Limited** from any nationalized bank/ scheduled bank payable at **NOIDA/DELHI**. The applicant may collect the documents in person with authorization letter or on request, HSCC will promptly dispatch the documents by courier on payment of an extra amount of Rs. 500/- over and above the said document fee of Rs. 2500/-, but under no circumstances will it be held responsible for postal delay and late delivery or loss of the documents so mailed. The applicants may see the Tender Documents during the sale period as referred above at HSCC corporate office, Noida prior to purchasing. A copy of this "Notice Inviting Tender" is also available at www.hsccltd.co.in/tender.html
5. To clarify the queries of bidders, Pre-Bid meeting shall be held in HSCC office, Noida at 11.00 Hrs. on 28.02.2007.
6. Tender complete in all respect must be submitted in sealed envelopes, which must be either delivered by hand or by registered mail to **HSCC (I) Ltd., Plot 6(A), Block-E, Sector-I, Noida-201301**, so as to reach not later than **15.00 hours** on **08.03.2007**.
7. HSCC reserves the right to Accept or Reject any/all tenders without assigning any reason thereof.

CHIEF GENERAL MANAGER (PG-III)

SECTION – I

DESCRIPTION AND SCOPE OF WORK :

1.0 PREAMBLE

Indigenous equines including donkeys, mules and ponies constitute 98% of the entire equines population of approximately 1.77 million in India. These animals provide livelihood to the landless, small and marginal farmers of our rural and semi-urban society. NRCE is committed to improve the performance of these equines by ensuring freedom from various ailments and by exploiting their production potential. The efforts of NRCE have been focused towards development of improved diagnostics bio-logicals for major equine ailments, nation wide monitoring of equine diseases, improving equine production by timely pregnancy diagnosis & adapting artificial insemination using cryo-preserved semen and providing advisory & consultancy services to the equine farmers and breeders.

The main campus of NRCE is located at Hisar (Haryana) and has state of the art laboratories for undertaking research in areas of equine virology, bacteriology, parasitology, immunology, pathology, medicine, biochemistry, and bio-technology. To strengthen its existing infrastructure, NRCE plans to set up a High Containment Bio-Safety Level-3 Laboratory in its campus at Hisar.

Considering the current and future need and to add to its existing infrastructure, NRCE desires to set up a High Containment Laboratory of Bio-safety level-3 (BSL-3) in the NRCE campus.

2.0 OBJECTIVES

Some of the major projects undertaken by NRCE are :

- Development and evaluation of improved diagnostics for EHV-1 infection
- Development of drug for treatment of Trypanosoma evansi infection of equines
- Standardization of ELISA for rapid diagnosis of rotavirus associated diarrhea
- Improved diagnostics of equine piroplasmiasis caused by Babesia equi.
- Development of Molecular diagnostics for differentiation of different equine pathogens/strains (EHV-1 and EHV-2)
- Development of Monoclonal antibodies for improvement of various diagnostics
- Seromonitoring of important equine diseases

To enhance the scientific process of the Institute it is proposed to set up a BSL-3 Laboratory Facility in the Institute campus.

2.0 SCOPE OF WORK :

The Scope of work involves ***'Construction, Testing, Commissioning and Validation of Bio-safety level 3 (BSL-3) Laboratory & associated works on "Turnkey Basis" in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period'***.

The scope of work shall include complete construction and establishment of BSL-3 laboratory facility including civil works, electrical works, Public health engineering works etc. complete in all respect. All the fixed equipment and system like Autoclave, Bio-Safety Cabinets, Pass Box, dunk tanks, HVAC system and its components (including A/C plant, air handlers, exhaust systems, filters, controls etc.), Hot water generator (for hot water shower during winters), Air compressor, Computers, Laboratory workstations, Un-interrupted power supply system, door interlocks, Access Control System, building management system, Fire Detection & Alarm System, fire extinguishers and any other equipments/systems essentially required to meet the intent and purpose of setting up of BSL-3 laboratory shall be provided and included in the scope of works.

Items/equipments like Biological Effluent Treatment Plant, Incinerator, scientific laboratory instruments and equipments used for research purpose like freezers, refrigerator, incubators, centrifuge, PCR Thermal Cyclers, Gel Documentation System, Electrophoresis etc. shall not be provided and included in the scope of works as the same shall be provided by the Employer i.e. NRCE. However, the contractor shall carry out planning for all such scientific laboratory instruments and equipments and providing the services and utilities like power, water, compressed air, drain etc. required for such items/equipments shall be provided and included in the scope of works of the contractor. The site landscaping works and providing internal roads shall also be excluded from the scope of works of the contractor.

The scope of works shall also include :

- Supply and laying of the required power supply cables from the existing electrical room (LT Panel room) upto the proposed BSL-3 Lab for its power supply.
- Extension of existing LT panel by providing feeder panel with switchgears of required capacities to meet the power requirements of BSL-3 Lab.
- Construction of boundary wall and extension of existing water supply lines upto the BSL-3 Lab to meet its water supply requirements.

The Layout Plan of NRCE Campus indicating the proposed site of construction of BSL-3 Laboratory is enclosed with the tender documents for reference purpose.

3.0 AREAS PROPOSED IN THE BSL-3 LABORATORY FACILITY

The proposed BSL-3 Laboratory facility shall be constructed in accordance with Centre for Disease Control & Prevention (CDC), Atlanta, USA Guidelines

as minimum and shall be complete with all the required civil, electrical, Public Health Engineering, HVAC and other associated works including fixed equipments and accessories on 'Turnkey Basis'. The minimum requirements, parameters and features of the proposed BSL-3 Laboratory Facility are broadly described as under.

- 3.1 The proposed BSL-3 Laboratory shall be constructed with an estimated total plinth area of approximately 210 SqM. The total estimated constructed floor area of the building shall be approximately 420 SqM. The proposed BSL-3 Laboratory shall have the following facilities/areas "

Ground Floor :

Animal Hold Room
Laboratory
Space for ETP
Space for Utilities & Services
Control Office
Store
Toilet

First Floor :

Set of Entry/Exit Change-Shower rooms
BSL-3 Laboratories 1 & 2
ABSL-3 Room for Animal Holding and experimentation
Air Locks
Wash & Sterilization Rooms (For Laboratory and animal waste)
Chemical/reagent store

The concept layout plan of Ground Floor (Drawing No. HSCC/NRCE/A&P/101) and First Floor (Drawing No. HSCC/NRCE/A&P/102) are enclosed in the tender documents. The works shall be executed as per the finally approved drawings/designs, specifications, samples, prototypes etc. which shall be submitted by the contractor and approved by the owner/consultant.

4.0 CRITICAL CONSIDERATIONS TO BE FOLLOWED IN DESIGNS

- 4.1 The proposed BSL-3 Laboratory shall be constructed in accordance with CDC Guidelines as minimum. Some of the minimum essential critical considerations for construction of the proposed BSL-3 Laboratory Facility shall be as under :

- Restricted and controlled access shall be provided for entry into the laboratory
- Access Control System for tracking & recording of entry / exits shall be provided
- Shower facility (Mandatory shower during exit) from BSL-3 areas shall be provided with hot water supply during winters.
- Appropriate negative differential pressures in laboratory rooms/zones shall be maintained

- Air from the laboratories, animal areas and other areas shall be exhausted only after appropriate filtration & treatment as per guidelines/standards.
- Leak proof dampers with provision to prevent backflow of air shall be provided in supply and exhaust air systems of laboratories and other critical rooms for isolation of rooms/zones
- Pressure balancing system to maintain room/zone pressures within specified set limits shall be provided which should be done automatically and shall be controlled through Building Management System.
- Standby exhaust systems shall be provided for BSL-3 laboratories and animal rooms
- The door interlocks, BMS and exhaust blowers of BSL-3 laboratories and animal room shall be provided with un-interrupted power supply system.
- The internal building finishes shall be monolithic, impervious, non-particle shredding, chemical resistant and suitable to withstand chemical use during decontamination/fumigation
- The doors shall be with gaskets and shall be with/without view panels as required. Door finishes shall be with chemical resistant, anti fungal and anti bacterial properties. Windows shall be non-openable type with toughened glass and shall be installed flushed with the walls
- All Bio-safety doors shall be leak proof and DOP tested
- Wall to wall, wall to ceiling and wall to floor corners shall be provided with approx. 3" coving to prevent accumulation of dust and to enable easy cleaning
- Suitable Building Management System (BMS) shall be provide for operation, control and monitoring of various systems and critical laboratory operating parameters like room/zone pressure, temperature, humidity etc.
- Ventilation Ducting shall be leak tested and shall be in chemical resistant material
- Emergency Hand / Eye wash station shall be provided at strategic locations
- Emergency exit facility from the BSL-3 Laboratory shall be provided for personnel exit in case of an emergency
- Laboratory work stations shall be of non particle shredding material and shall be chemical resistant to allow chemical disinfection/CIP.
- All electrical light fixtures, switch/sockets, controls, sensors etc. provided in the BSL-3 laboratories and animal room shall be of sealed type, chemical resistant construction and shall be able to withstand fumigation with disinfectant chemicals.
- Fire detection and alarm system (FDA System) and fire fighting systems shall be provided as per the guidelines/standards.

5.0 GENERAL CONSTRUCTION

The shop drawings shall be submitted by the contractor for review and approval by the client/ Consultant. However some of the critical elements of the building and features are highlighted here under :

5.1 Building Planning Concept :

The proposed BSL-3 Laboratory Building shall be constructed on primary and secondary containment barrier system concept:

5.2 The Primary Barriers:

Bio-Safety Cabinets (CII B2 or as required), Autoclaves, Pass Box, Dunk Tanks etc. shall constitute the primary containment barrier and shall be provided suitably to contain the contamination.

5.3 The Secondary Barriers :

The laboratory building, Air Management and Control System shall provide the secondary barrier system. Differential of pressure shall be maintained in areas/zones to assure flow of air towards the potentially higher risk elements of the laboratory.

5.4 Building Construction and Finishing :

The building Structure shall be including factors like earth quake, high negative working pressures inside the BSL-3 Laboratories and other associated wear and tear. The building shall be provided with suitable means of rodent proofing.

The internal building finishing shall provide impervious and monolithic construction and all materials used for internal construction and finishings shall be non particle shredding type and chemical resistant. Joints like wall to wall, wall to floor and ceiling to wall shall be provided with covings for easy cleaning. The services like water, steam, compressed air etc. in laboratory and animal areas shall enter through ceiling mounted service pendants. All the joints and penetrations in the building shall be sealed.

The drainage and effluent piping system from the BSL-3 areas shall be of chemical resistant materials. The floor traps shall provide air breaks suitable for high negative operating pressures of laboratory rooms.

6.0 HEATING VENTILATION & AIR-CONDITIONING (HVAC) SYSTEM

The entire building shall be air-conditioned. The toilet shall be suitably ventilated. The HVAC systems shall be provided to maintain the desired inside conditions in terms of temperatures, humidity conditions, air filtration requirements, room/zone pressure requirements and air change rate.

6.1 Air Conditioning Plant :

The Air-Conditioning plant shall be with DX system or other appropriate system for ease in operation and maintenance with sufficient backup provisions. The air-conditioning plant shall provide enough flexibility in operation such that selective areas can be operated, if required, to economise on the operating costs. The Air-conditioning plant shall be complete in all respect with all the equipments and accessories as required.

6.2 Air Handling System :

The conditioned air shall be supplied to the BSL-3 laboratory and other areas by the Air Handlers which shall contain cooling/heating components, filter sections, High static blowers with motors etc. The air after filter plenums shall be supplied through ducting to various rooms / zones. Each room/zone shall be provided with dedicated Air Handlers for flexibility in operation. The BSL-3 Laboratory facilities and animal rooms shall be provided with once through system. The other areas may have re-circulatory systems as per the guidelines/standards. The air change rates inside the laboratory rooms shall be maintained as per the guidelines/ standards.

6.3 Air Filtration :

The supply air to the laboratory and exhaust air from the laboratory areas shall be filtered through appropriate sets of filters and treated as per the guidelines/standards.

The filter handling systems shall be provided such that it protects the maintenance staff from acquiring any infections while handling/replacing the filters. The filter plenums of BSL-3 laboratories and Animal areas shall have provision and allow in-situ decontamination of filters.

6.4 Pressure Control :

Automatic pressure control system shall be provided for the laboratory rooms/zones. On-line monitoring system of room pressures shall be provided. The following dampers shall be provided in supply and exhaust ducts/systems of the BSL-3 areas as minimum.

- a) Modulating Dampers – For controlling air quantity and pressure inside the rooms/labs
- b) Isolation Dampers – To Isolate the various Areas/Zones of the Laboratory. The Isolation dampers shall be with ‘Fail Safe” feature such that in case of power failure or any other abnormality these isolation dampers shall turn to fully closed mode as a safety measure.

Alarm system shall be provided for warning in case any abnormality in maintenance of room pressure occurs during the operation of the laboratory.

6.5 Standby Exhaust System :

The exhaust systems of the BSL-3 Laboratory and animal areas shall be provided with redundant backup exhaust blowers so that in case of failure of one blower the standby blower shall take over automatically to maintain the required pressure inside the laboratory/zone.

6.6 Fire Dampers :

As a safety feature, fire Dampers shall be provided in each of the supply and exhaust air systems. The fire dampers shall prevent spread of fire and smoke to other areas of the lab/building. The fire dampers shall be interlocked with the AHU blower motors such that in case of fire, the AHU blower motor should get switched off automatically.

7.0 ELECTRICALS

The electrical power requirement for the proposed BSL-3 laboratory facility shall be calculated and submitted with details by the contractor. All the required panels, cabling, switchgears and arrangements etc. for the purpose of energizing the BSL-3 Laboratory facility shall be carried out by the contractor.

All the Electrical fittings and fixtures in the Laboratories and Animal Areas shall be suitable for clean room application and shall be sealed type, leak proof and capable to withstand chemical exposures during fumigation. Electrical fittings and fixture in office and administration areas shall be decorative type.

The electrical power distribution scheme shall be provided to provide main power supply from the state electricity authorities, Un-interrupted Power supply to the critical components and equipments through UPS and Standby power supply through existing Diesel Power Generator Set.

8.0 BUILDING MANAGEMENT SYSTEM (BMS)

A customized BMS shall be provided to enable operation, monitoring and control the critical laboratory HVAC system and equipments. The BMS shall allow to monitor and control the following minimum parameters :

- Individual Room/Zone Pressures
- Air Handlers ON/OFF and RUN status
- Exhaust Blowers ON/OFF and Run status
- ON/OFF and RUN status for each of the exhaust blowers
- Individual Room/Zone temperature and relative humidity
- Isolation Damper OPEN/CLOSE status
- Pressure drop across each HEPA filter
- VFD status for each Air Handler and exhaust blower
- Biological Safety cabinets ON/OFF and RUN status

The BMS shall have sensors and DDC controllers, fully wired to a central computer with display and printout facility, zone monitoring & control functions and related software/s. Parallel display of pressures and other critical lab operating parameters shall be provided in the individual labs. The BMS shall have the facility to give alarm in case of deviations during the operation from the set operating ranges. The BMS sensors for indoor installations inside the

laboratory rooms shall be chemical resistant and suitable to withstand fumigation.

The Building Management System shall have 'Manual' mode to allow operation and monitoring in case of failure or disruptions in the system.

9.0 FIRE DETECTION & ALARM SYSTEM

- Fire Detection and Alarm System shall be provided for the entire BSL-3 Laboratory Facility to detect any eventual case of fire in the building.
- The Fire Detection and Alarm system shall give an audible alarm in case of fire in any of the room/zones,
- The Fire Detection & Alarm System shall meet the statutory requirements

10.0 FIRE FIGHTING SYSTEM

The contractor shall comply with the statutory requirements of the fire authority. Portable fire extinguishers shall be provided inside the BSL-3 Laboratory. The fire extinguishers shall be Chemical Extinguisher (CO₂) type / Gas expelled (ABC) Type / Dry powder type, depending upon the application.

11.0 UNINTERRUPTED POWER SUPPLY SYSTEM

A central UPS console shall be provided to cater to the extreme essential power requirement of the laboratory. All critical components like Door Interlocks, BMS, Operation of Isolation Valves, exhaust blowers of BSL-3 Laboratory and Animal Rooms and critical equipments shall be provided with Uninterrupted Power Supply.

12.0 ENTRY / EXIT PROTOCOLS

Access control systems shall be provided for restricted and controlled access/entry to the Laboratory. Appropriate sets of change-shower-change rooms shall be planned and provided. The change-shower-change door opening/closing logic shall be evolved by the contractor and approved as per users requirement.

All the entries/exits into the Lab shall be monitored and shall be logged on to the BMS computer which can be accessed at any time by an authorized persons.

13.0 SERVICE & UTILITIES

13.1 Power :

Power required for the BSL-3 Laboratory shall be tapped from the existing feeder lines (through its expansion and laying of required power cabling) in NRCE Campus. All necessary arrangements like extension of existing feeder/busbars, laying of power cables etc. for tapping of required power shall be made by the contractor.

13.2 Water :

Water supply to the BSL-3 Laboratory shall be provided through the existing water distribution network in NRCE Campus. All the necessary and required arrangements for tapping and extension of existing water line from the adjacent building shall be made by the contractor. All the water distribution pipings in the BSL-3 areas shall be exposed type and with chemical friendly materials suitable to withstand chemical fumigation of rooms.

13.3 Internal / External Communication Facility

The BSL-3 Laboratory facility shall be provided with all the provisions for Intercom, Telephone and internet facility. External communication lines from the state telecom department shall be obtained by the client, if required.

14.0 SPECIALIZED LABORATORY SUPPORT EQUIPMENTS AND SYSTEMS

14.1 Autoclaves :

The autoclaves shall be provided for decontamination purpose and shall be of double door type of suitable capacities as required. The autoclave for sterilization purpose shall be single door type of required capacities depending upon the requirement. The autoclave control system shall be PLC controlled, programmable and shall allow pre-programmed cycles. The logic of pre-programmed cycles shall be developed as per the protocols. The autoclaves shall be with in-built steam generators of required capacities such that the required steam pressure inside the chamber during sterilization/decontamination cycle is attained in not more than 30 minutes time.

14.2 Dunk Tank :

Dunk tank/s shall be provided at strategic / required locations for transfer of samples, chemicals and materials to and from the laboratories. The dunk tanks shall be filled with approved chemicals like NaOH, Sodium Hypo-Chloride Solution etc. during active use.

14.3 Pass Box :

Pass Box (Dynamic / Static type) shall be provided at strategic / required locations for transfer of samples, chemicals and materials to and from the

laboratories. The dynamic pass box shall provide clean environs of desired level as required.

14.4 Hot Water Calorifier System

A Suitable capacity hot water calorifier shall be provided for supply of heated water to the change room showers in winters. The hot water distribution system shall be complete with water recirculation pumps, batch controllers, flow meters, valves, electrical connections, controls and wiring, piping etc. complete in all respect.

14.5 Biological Safety Cabinet

Biological Safety Cabinets (BSC) shall be provided inside the BSL-3 Laboratories at the required locations. The Biological Safety Cabinets shall be CII B2 type or other type depending upon the requirements. The exhaust from the Biological Safety cabinets shall be ducted out from the laboratory. The BSC shall be NSF compliant and with safety indications and alarms. The bio-safety cabinet shall in SS construction and complete with supply/exhaust blowers. Blower motor, HEPA filters, pre-filters etc. complete in all respect and shall be NSF 49 compliant.

14.6 Air Compressor

Air compressors system shall be complete with compressor motor, reservoir, air filters, controls, distribution piping, pressure regulating valves etc. complete in all respect. The air compressors shall be non-lubricating type.

14.7 LAN System

Provision for LAN system shall be provided in each room of the laboratory. The contractor shall provide all the required hardware, software, servers, computers, licences etc. for the complete LAN system. All the rooms of the laboratory shall be provided with LAN connections and one desktop PC.

14.8 Ventilated Type Garment Storage Cabinet

Ventilated type garment storage cabinet shall be provided in the Change Rooms-II. The ventilated garment storage cabinets shall be in SS construction and shall be with blower, motor, HEPA filter, activated carbon filter for odour neutralization, UV lamp etc. complete in respect as required.

14.9 EPABX System

A suitable EPABX System shall be provided for the laboratory. All the rooms of the laboratory shall be provided with intercom connections and telephone instrument.

14.10 Laboratory Workstations

Laboratory workstations shall be planned and provided. The work stations shall be constructed in SS and shall be chemical friendly. The workstations shall be with suitable under table lockable storage space. Sinks shall be provided integrated with the work station or standalone type as required.

14.11 Individually ventilated cages (IVC's)

Individually ventilated cages shall be provided in the BSL-3 animal room for handling mice, rats, rabbits and guinea pigs. One set of 12 cage system shall be provided for handling mice/rats and one set of 12 cage system shall be provided for handling rabbits/guinea pigs.

15.0 STATUTORY APPROVALS

The contractor shall be responsible for obtaining all the required approvals from statutory regulatory authorities like local municipal Corporation, Fire Authorities, Pollution Control Board, Electrical Inspectors etc.

At the request of the contractor, only the required documents for submitting the applications for approval shall be signed by the client/employer as Owner. All the necessary follow-ups etc. for obtaining such clearance shall be carried out by the contractor.

16.0 VALIDATION

16.1 After completion of the construction and installations, the entire laboratory facility, all the equipments, systems and services shall be validated by the contractor under supervision of a committee of the consultant / client.

16.2 Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.

16.3 The validation results shall be recorded and documented

16.4 The contractor shall provide all the instruments, tools, tackles, manpower etc. required for the validation.

17.0 THIRD PARTY VALIDATION

19.1 If the client/employer desires to get the laboratory validated by a third party, the contractor shall provide all the required assistance for carrying out the validation.

19.2 All the required validation instruments, tool, tackles, manpower etc. shall be provided by the contractor, if asked by the client/employer.

SECTION - II

QUALIFICATION CRITERIA

- 1.0** Qualification of the bidders for eligibility of opening their price bids will be based on meeting the following criteria regarding the BIDDER's work experience, personnel and equipment capabilities, and financial position, as demonstrated by the BIDDER's responses in the forms attached and other information furnished by the bidders in support of their Qualification as given below:

MINIMUM ESSENTIAL MANDATORY QUALIFICATION CRITERIA

- 2.0 The BIDDER should meet the following essential minimum criteria for Qualification :**
- 2.1 Minimum Average Annual turnover during last three financial years (As per audited balance sheets) i.e financial years 2003-2004, 2004-2005 & 2005-2006 should be at least Rs. 75.00 Lakhs. (Fill enclosed ANNEXURE-I).
- 2.2 Successful and timely completion of at least one work of similar nature on a single contract value not less than 200.00 Lakhs or two similar nature of works of value not less than 125.00 Lakhs each or three similar nature of works of value not less than 100.00 Lakhs each during the last 7 years ending last day of month previous to the one in which bids are invited. (Fill enclosed ANNEXURE-IV)
- 2.3 Similar works means construction, testing, commissioning and validation of BSL-3 Laboratory including civil works, electrical works, HVAC works and other associated systems and services. The Laboratory must have been duly and successfully validated to operate as a BSL-3.
- 3.0 Only those bidders / firms shall be considered for further evaluation (i.e Technical Evaluation), who meet the above Minimum Essential Mandatory Qualification Criteria**

4.0 TECHNICAL QUALIFICATION CRITERIA

The Technical Evaluation of the bidders shall be based on Planning & Design Capability, Personnel, Equipment, Financial and other capabilities of the Bidders.

The bidders shall submit the following information, drawings and details as mentioned at 4.1, 4.2, 4.3, 4.4 & 4.5 below as part of their “Technical Bid”. The Bidders qualified for Technical Evaluation shall be required to give a presentation covering the requirements specified below at 4.1 & 4.2 to prove the Planning & Design Capabilities and Personnel, Equipment and Financial Capabilities of the Bidder :

4.1 PLANNING & DESIGN CAPABILITY

i. **Architectural layout plans**

Concept layout plans of the proposed BSL-3 laboratory in compliance with CDC guidelines clearly indicating sizes of various rooms areas, corridors and other associated services & movement areas etc. as per the requirements stated under Section –I (DESCRIPTION & SCOPE OF WORK).

ii. **Men & Materials movement layout plans**

Conceptual layout plans showing movement of men & materials into and within the Laboratory areas clearly highlighting the measures / preventions for control of spread of infection/contamination into and within the Laboratory.

iii. **Zoning plans :**

Plans indicating details of zoning and separation/isolation of different classified, non-classified and contaminated areas/zones, relative pressurization, Air change rates, air re-circulation rates and sterility requirements, decontamination control, services etc. for different areas/zones.

iv. **Specialized Systems and Services Layout schemes**

Conceptual layout plans and schematic drawings of various specialized services and utilities showing tentative locations of equipments and furniture such as :

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- a. HVAC system
- b. Air filtration system
- c. Pressure control system
- d. Fire Detection and Alarm system
- e. Air distribution System
- f. Building Management System
- g. Fire Fighting system
- h. Un-interrupted Power Supply system
- i. Specialized laboratory support equipments/ primary containment barriers such as :

Autoclaves
Dunk tanks
Dynamic pass boxes
Entry exit protocols

- v. Services & Utilities schemes
 - Power supply and distribution system
 - Water supply and distribution system
 - Internal/external communication system
 - Disinfection/decontamination system
 - Effluent treatment and disposal system
 - Solid waste treatment and disposal system.
- vi. Laboratory Validation Procedures and Details
- vii. Laboratory Security protocols
- viii. Project Implementation Methodology
- ix. Construction materials details and equipments details along with the makes/manufacturers proposed for construction of the laboratory

4.2 PERSONNEL, EQUIPMENT AND FINANCIAL CAPABILITIES

- i. Personnel Capabilities : The firm must have suitable qualified and experienced personnel for the successful completion of the works. List of employees and bio-data of key officials shall be submitted stating clearly how these would be involved in this work.(Fill enclosed ANNEXURE – II).
- ii. Equipment Capabilities : The BIDDER should own, or have assured access to (through hire, lease, purchase agreement or other means) equipment to successfully execute the contract. List of equipments should be submitted (Fill enclosed

ANNEXURE -III). The bidder shall also provide details of manufacturing setups, if owned by the firm.

- iii. Financial Capabilities : Audited balance sheets for the last three financial years i.e. 2003-2004, 2004-2005 & 2005-2006, should be submitted and must demonstrate the soundness of the BIDDER's financial position, showing positive networth and profitability in last three financial years. The Bidder should have solvency of Rs. 100.00 certified by the bidders bankers.
Where necessary, the Consultant (HSCC) on behalf of Employer will make inquiries with the BIDDER's bankers.

4.3. EXPERIENCE OF CONSTRUCTION OF PROJECTS OF SIMILAR NATURE & COMPLEXITY

The bidder shall submit information about their the past experience in construction of projects of similar nature with information about magnitude of the Projects, Type of Projects ,Client Satisfaction, Time Overun if any, Cost over run if any , (Fill enclosed ANNEXURE IV).

4.4. CONSTRUCTION MATERIALS AND EQUIPMENT PROPOSED FOR CONSTRUCTION OF THE LABORATORY :

The bidders shall submit information about the construction materials and equipment with specifications and makes/manufactures proposed for construction of the laboratory. (Fill ANNEXURE V)

4.5 OTHER EVALUATION INFORMATION

- i. Registration/Licence : The firm must have works contract/VAT registration and sales tax certificates from the appropriate authorities (Photocopies of registration certificates to be submitted.)
- ii The firm should not have abandoned any work of Govt. Of India / Govt. department during the last 5 years.
- iii Information regarding litigation, expulsions and blacklisting , if any, should be submitted with details.
- iv. In case the firm has not abandoned any work of Govt. of India / Govt. department during the last 5 years and also does not have any history of litigation, expulsion and blacklisting, a self declaration to this should be submitted by the firm on a non-judicial stamp paper of appropriate value.
- v The bidder shall submit the supporting documents regarding the information given in the ANNEXURE - I to ANNEXURE - V.

5.0 Even though the BIDDERS meet the above criteria, they are subject to be disqualified if they have:

- made misleading or false representation in the form, statement and attachments submitted; and/or
- record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures, etc.
- ever been black listed.

The BIDDERS may visit the site to get first hand impression as regards its approach, accessibility etc.

6.0 Updating Qualification Information :

- i BIDDERS shall be required to update the financial information used for Qualification, as and when asked for, to confirm their continued compliance with the qualification criteria and verification of the information provided. An application shall be rejected if the BIDDER's qualification thresholds are no longer valid at the time of application.

7.0 GENERAL INFORMATION

All individual firms applying for Qualification are requested to complete the information in this form. Information to be provided for all owners or BIDDERS who are partnerships or individually-owned firms.

1.	Name of firm
2	Head office address
3	Telephone Contact
4	Fax Telex
5	Place of incorporation/ Registration Year of incorporation/ registration

STRUCTURE AND ORGANIZATION

1. Name & address of the applicant
2. Telephone No. / Telex No. / Fax No.
3. Legal status of the applicant (attach copies of original document defining the legal status)
 - (a) An individual
 - (b) A proprietor firm
 - (c) A firm in partnership
 - (d) A Limited Company or Corporation.
4. Particulars of registration with various Government bodies (attach attested photocopy)

Organisation /Place of registration	Registration No.
-------------------------------------	------------------
5. Name and Titles of Directors & Officers with designation to be concerned with this work.
6. Designation of individuals authorised to act for the organisation
7. Was the applicant ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so, give the name of the project and reasons of suspension of work.
8. Has the applicant ever abandoned the awarded work before its completion ? If so, give name of the project and reasons for abandonment.
9. Has the applicant ever been debarred / black listed for tendering in any organisation at any time ? If so, give details.
10. Has the applicant ever been convicted by a court of law? If so, give details.
11. Any other information considered necessary but not included above.

ANNEXURE - I

FINANCIAL CAPABILITIES

Year	Annual Turn Over in Indian Rupees (or equivalent to Indian Rupees) as per Audited Balance Sheet
2003-2004	Rs.
2004-2005	Rs.
2005-2006	Rs.
Average Annual Turnover over the past three years	Rs.

Financial Information in Rs. Equivalent	For year 2003-2004	For year 2004-2005	For year 2005-2006
1. Total Assets			
2. Current Assets			
3. Total Liabilities			
4. Current Liabilities			
5. Profit before Tax			
6. Profit after Tax			

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

1. Attach copies of audited balance sheets for all three years (2003-2004, 2004-2005 & 2005-2006).
2. Indicate Financial arrangements for carrying out the proposed work.
3. Attach recent solvency certificate from bankers

ANNEXURE - III

EQUIPMENT CAPABILITIES

Sl. No.	Name of Equipment	Nos.	Capacity or Type	Age	Condition	Ownership Status			Current Location	Remarks
						Presently owned	Leased	To be purchased		

- **Provide details of Manufacturing Facilities, if owned by the firm, with complete details.**

ANNEXURE - IV

EXPERIENCE OF CONSTRUCTION OF PROJECTS OF SIMILAR NATURE & COMPLEXITY

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

Sl. No.	Name of work / project and location	Owner or sponsoring organization	Cost of work in Lakhs	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ arbitration pending/in progress with details*	Name and address/ telephone number of officer to whom reference may be made	Remarks

* Indicate gross amount claimed and amount awarded by the Arbitrator

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

ANNEXURE - V

CONSTRUCTION MATERIALS AND EQUIPMENT PROPOSED FOR
CONSTRUCTION OF THE LABORATORY SUCH AS :

S.NO.	CONSTRUCTION MATERIALS /EQUIPMENT	SPECIFICATIONS	PROPOSED MAKES/MANUFACTURERS
A	CONSTRUCTION MATERIALS		
	- Building Foundations & structures		
	- External and internal walls		
	- Roof		
	- Flooring		
	- Internal wall and ceiling panels		
	- Doors		
	- Glazing/fixd windows		
	- Fire-check doors		
	- Water proofing		
	- Jointless flooring and coving		
	- Plumbing & sanitary installations		
	- Floor traps inlets		
	- Pipes supporting system		
	- Valves		
B	ELECTRICAL FITTINGS &FIXTURES		
	- switches & sockets		
	- Light fixtures		
	- Internal conduits		
	- Internal wiring		
	- Smoke /fire detectors		
C	HVAC SYSTEM		
	- Refrigeration machines		
	-Air handling units		
	-Pumps		
	- Filters : Pre filters, Micro-vee filters, HEPA filters, ULPA filters		
	- AHU's controls		
	- Ventilation fans		
	- Electrical panels &		

	switchgear		
	- Air circulation ducting		
	- Volume control dampers & grilles		
	- Leak proof dampers		
	- Negative pressurization fans/blowers		
	- Piping work		
	- Electrical cables & wires		
D	BUILDING MANAGEMENT SYSTEM		
E	BIOSAFETY FIXTURES		
	- Bio-safety doors		
	- Double door pass box		
	- Dunk tanks		
	- Garment storage cabinet		
	- Steam autoclaves		
	- Bio-safety cabinets		
	- Emergency exit door		

1. Attach separate sheets for specifications of construction materials and equipment.
2. Attach manufacturers catalogues/brochures for construction materials and equipment proposed.

SECTION - III

INSTRUCTIONS TO BIDDERS AND EVALUATION OF BIDS

1.0 General

1.1 Scope of Work

The Scope of work involves Construction, testing, commissioning and, validation of Bio-safety level 3 (BSL-3)Laboratory & associated works on “Turnkey Basis” at National Research Centre on Equines (NRCE), Hisar-Haryana in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period

1.2 The Employer

The National Research Centre on Equines (NRCE), Hisar-Haryana under Indian Council of Agricultural Research,(ICAR), New Delhi shall be the employer / owner for the subject work.

In these documents wherever the word tender/ tenderer/ tendering has been used the same may be considered synonymous with bid/ bidder/ bidding.

1.3 Time for Completion

The successful bidder shall complete the works within **12 (Twelve) Calendar months** from Engineer's order to commence the work.

2.0 Deleted

3.0 Information to be Submitted :

3.1 Bids submitted shall include the following information :

- (a) Copies of original documents defining the constitution, legal status, place of registration and principal place of business of the company or firm.
- (b) A work plan clearly bringing out how the bidder proposes to carry out the work to achieve the quality and the time schedule.

The work plan shall clearly spell out with specific details the following :

- i. List of equipment along with details proposed to be used on the works.
- ii. List and bio data of Engineers and other important staff members proposed to be employed on the works.

4.0 Cost of Bidding

4.1 The bidder shall bear all costs associated with the preparation and submission of his bids and "The Employer" will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

5.0 Site Visit

5.1 The bidder is advised to acquaint himself with the job involved, visit the Site and examine site conditions, climatic conditions, labour, power, water, material availability, transport and communication facilities, environmental regulations, laws and bye-laws of statutory bodies, and collect all information that will be necessary for preparing the bid and entering into a contract.

The cost of visiting the Site and collecting information for the purpose of submission of the bid shall be to the bidder's account.

5.2 The bidder and any of his personnel or agents will be granted permission by the Employer to enter upon the site for the purpose of such inspection, but only upon the express condition that the bidder, his personnel or agents will release and indemnify the Employer and Employer's Personnel and agents from and against all liability in respect thereof and will be responsible for personnel injury (Whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expense however caused, which, but for the exercise of such permission would not have arisen.

BID DOCUMENTS

6.0 Content of Bid Documents

6.1 The Bid Documents comprise the following :-

Volume – I	:	Technical bid
Section - I	:	Description and Scope of work
Section - II	:	Qualification Criteria
Section - III	:	Instructions to Bidders and Evaluation of Bids
Section - IV	:	General Conditions of Contract
Section - V	:	Specific Conditions of contract
Volume - II	:	Financial Bid
		Bill of Quantities

6.2 The bidder is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the Bid documents. Failure to comply with the requirements of the Bid Documents will be at the bidder's own risk. Bids which are not substantially responsive to the requirements of the Bid Documents will be rejected.

7.0 Clarification on Bid Documents

7.1 A prospective bidder requiring any clarifications on the Bid Documents may notify the Engineer in writing or by telex or cable at the Engineer's mailing address indicated in the Bid Documents. A meeting of the prospective bidders may be held, if required, at which the Engineer will respond to any request for clarification which he receives within two weeks of the first date of the issue of the tenders. Written copies of the Engineer's response (including an explanation of the query but without identifying the source of the inquiry) will be sent to all prospective bidders who have received the Bid Documents if felt necessary.

8.0 Amendment of Bid Documents

8.1 At any time prior to the dead line for submission of bids, the Engineer may for any reason, whether at his own initiative or in response to a clarification requested by the prospective bidder, modify the Bid Documents by amendment.

8.2 The amendment will be sent to all prospective bidders who have received the Bid documents, to arrive not later than 7 days prior to the original or extended deadline for submission of bids, in writing or by telex or cable and will be binding upon them. Prospective bidders should promptly acknowledge receipt thereof by telex or cable to the Engineer.

8.3 In order to afford prospective bidders reasonable time in which to take an amendment into account in preparing their bids, the Engineer may, at his discretion, extend the deadline for the submission of bids.

PREPARATION OF BIDS

9.0 Language of Bid

9.1 The bid prepared by the bidders and all correspondence and documents relating to the bid exchanged by the bidder and the Engineer shall be written in the English Language.

10.0 Documents comprising the Bid

10.1 The bid to be prepared by the bidder shall comprise the following :- the Bid and Appendix thereto, the Bid Security, the Bill of Quantities; the Schedules of Supplementary information, and any other materials required to be completed and submitted in accordance with the instructions to Bidders embodied in these Bid Documents. The forms, bill of quantities and schedules provided in these Bid Documents shall be used without exception.

10.2 All documents issued for the purpose of bidding as described in Clause 6.1 and amendments issued in accordance with Clause 8, shall be deemed to be incorporated in the Bid. Bid Documents prepared and submitted in accordance with Clause 14 and 15 shall be returned by Bidders to the Employer along with the submission of the Bid.

11.0 Bid Prices

11.1 The quoted rates in Bill of Quantities shall be in Indian Rupees and shall include cost of the material, equipment/item, stores, freight, insurance, transit insurance, packing & forwarding, sales tax, excise duty, , VAT, customs clearance charges, basic customs duty on production of CDEC, inspection/inspective certificate charges etc. and including all other charges whichever applicable for equipment/item supply, installation, testing and commissioning with all men and material required for the same.

No other charges in addition will be payable on any account over and above the all inclusive unit price quoted for the items. The price should be given both in figures and words. Offers with price variation clause will not be accepted. The rates quoted in ambiguous terms such as 'freight on actual basis' or 'taxes as applicable extra' or 'packing forwarding extra' will render the bid liable for rejection. Custom duty exemption certificate for imported goods in terms of Government Notification No. 51/96-Customs dated 23 July 1996 and central excise duty exemption in terms of Government Notification No. 10.97-Central Excise dated 1 March 1997 as amended from time to time, will be issued by employer on the requests of the contractor. However the suitability and exemptions available for various items/components of the works is to be ascertained by the bidders and rates of the item of BOQ to be quoted accordingly. Copy of customs duty exemption and central excise duty exemption certificate available with the Employer is attached with the Bid Document.

In the extreme event of employer not in a position to release certificates like CDEC, Octroi Exemption Certificate etc., the difference in customs duty, octroi etc. actually paid by the contractor shall be reimbursed on actuals on production of documentary evidence by the contractor.

The all inclusive unit price of items quoted shall take care of impact of foreign exchange rate fluctuations and customs & excise duties fluctuation etc. for imported items and this shall be the ceiling unit rate payable to the contractor for the item of the BOQ.

No Letter of Credit (LC) shall be opened either by HSCC or by the Employer. Any requirement of opening of LC for the imported items/ equipments shall be the responsibility of the contractor.

12.0 Bid Validity

12.1 The bid shall remain valid and open for acceptance for a period of **120 days** from the date fixed for receiving the same.

12.2 In exceptional circumstances prior to expiry of the original bid validity period, the Engineer may request the bidder for a specified extension in the period of validity. The request and the responses thereto shall be made in writing or by cable or telex. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will neither be required nor

permitted to modify his bid, but will be required to extend the validity of his bid security correspondingly.

13.0 Bid Security

13.1 The bidder shall furnish, as part of his bid, a bid security of the amount of Rs. 5.00 Lakh (Five Lakh only). No deviation shall be permitted from this.

13.2 The Bid security shall be in the form of a *demand draft/pay order in favour of M/s. HSCC(India) Ltd, Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301*, or in the form of *bank guarantee for an equal amount from any nationalised/scheduled bank valid for 30 (Thirty) days after bid validity i.e. for minimum 150 days.*

13.3 Any bid not accompanied by an acceptable bid security will be rejected by the Employer/Engineer as non-responsive.

13.4 The bid securities of unsuccessful bidders will be returned as promptly as possible but not later than *30 days* after the expiration of the period of bid validity prescribed by the Employer.

13.5 The bid security of the successful bidder will be returned upon the bidder executing the Contract and furnishing the required performance security.

13.6 The bid security may be forfeited :

- a) If a bidder withdraws his bid during the period of bid validity.
- b) In the case of successful bidder, if he fails to :-
 - i) enter into the contract, or
 - ii) furnish the necessary performance security
 - iii) does not agree to arithmetic corrections made as per terms of bid documents.

13.7 No interest will be payable by the Engineer on the bid security amount cited above.

14.0 Format and Signing of Bid

14.1 The tender shall be filled & signed only by the firm/ corporation in whose name the tenders have been issued. The bid shall be typed or written in indelible ink and duly signed by a person or persons duly authorised to being the bidder to the contract. Proof of authorization shall be furnished in the form of written Power of Attorney which shall accompany the bid.

14.2 All pages of bid shall be initialled and stamped by the person signing the bid where entries or amendments have been made.

- 14.3 The complete bid shall be without alterations interlining and erasures except those to accord with instruction issued by the Engineer or as necessary to correct errors made by the bidder in which case such correction shall be initialled by person signing the bid.

SUBMISSION OF BID

15.0 Sealing, Marking & Submission

- 15.1 The bid shall be submitted in accordance with the procedure detailed herein. Specified documents shall be enclosed in envelope of appropriate size each of which shall be sealed.

- (i) Envelope No. 1 : Shall contain the bid security as indicated in clause 13.0 of these instruction to bidders.
- (ii) Envelope No. 2 : Shall contain the “Technical Bid” , the covering letter and all the documents of Volume I of Bid documents duly signed and including the following :
 - (a) Power of attorney of person authorised to sign the bid.
 - (b) Original bid documents all pages of Volumes I duly signed and stamped.
 - (c) Documents regarding constitution of bidder as indicated in Clause 3.1 of these Instructions to Bidders and other documents required as per clause 2.0 .
 - (d) All documents, drawings, details, information asked for in SECTION-II (Qualification Criteria) of the Bid Document.
 - (e) Certificate of Registration.
 - (f) Equipments proposed to be deployed for the works.
 - (g) Installation Schedule and Employment Schedule.
- (iii) Envelope No. 3 : Shall contain only the Volume II : Financial Bid comprising of Bill of Quantities and rates/prices duly filled in and signed and stamped without any conditions whatsoever. Bids containing any conditions in Envelope No. 3 are liable to be summarily rejected.

The contractor must fill up price against each item of BOQ (Volume II) both in words and figures in the blank spaces provided in the respective columns.

Please note that the price should not be indicated in any of the documents enclosed in envelope 1 and 2. Non compliance shall entail rejection of the bid.

- 15.2 The bidder shall seal the bid.
- 15.3 All the above three envelopes shall be sealed in a fourth envelope and addressed to *the Chief General Manager (PG-III), HSCC(India) Ltd, Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301.*
- 15.4 All the above envelopes shall bear the Name of the Work as described in the Notice inviting tenders along with Tender Number, Due date and Time.
- 15.5 All the envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened if required.
- 15.6 All recipients for the purpose of submitting a bid shall treat the contents of the documents as private and confidential.

16.0 Deadline for submission of bids

- 16.1 **Bids must be received by the Engineer, HSCC (India) Ltd. not later than the prescribed date and time.**
- 16.2 The Engineer may, at his discretion, extend the deadline for submission of bids through the issuance of an amendment in accordance with Clause 7 in which case all rights and obligations of the Employer and the bidders previously subject to the deadlines shall thereafter be subject to the new deadline as extended.

17.0 Late Bids

- 17.1 Any bid received by the Engineer after the prescribed deadline for submission will be returned unopened to the bidder.

18.0 Modification and Withdrawal of Bid

- 18.1 The bidder may modify or withdraw his bid after bid submission, provided that modification or notice of withdrawal is received in writing by the Engineer prior to the prescribed deadline for submission of bids.
- 18.2 The bidder's modification or notice of withdrawal shall be prepared, sealed, marked and despatched in accordance with the provisions for the submission of bids. Notice of withdrawal may also be sent by telex or cable but shall be followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids.
- 18.3 No bid may be modified subsequent to the dead line for submission of bids.
- 18.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of validity of the bid specified. Withdrawal of a bid during this interval may result in the forfeiture of the bid security.

- 18.5 Subsequent to the expiration of the period of validity of bids prescribed in the bid documents, a successful bidder who has not been notified by the Engineer of the award of the contract may withdraw his bid without penalty.

BID OPENING AND EVALUATION

19.0 Bid Opening

- 19.1 ***Bids shall be opened in the office of HSCC at Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301, half an hour after the prescribed time for bid submission in the presence of the bidders representative who wish to be present.***

Envelop No. 1 : Shall be opened first. If the Bid Security is not found as prescribed the bid shall be summarily rejected.

Envelop No. 2 : Shall then be opened. Bids of parties who do not accept the conditions laid above in the bid documents are also liable to be rejected.

- 19.2. The Engineer will examine the bids to determine whether they are complete, whether the requisite bid securities have been furnished, whether the bids have been properly signed and stamped and whether the bids are generally in order.

- 19.3 Telegraphic/ Fax offer will be treated as defective, invalid and rejected. Only detailed complete bids received prior to the closing time and date of the bids will be taken as valid.

- 19.4 The bidder's names, general technical details, the presence of the requisite bid security and such other details as the Engineer, at his discretion may consider appropriate will be announced at the bid opening.

Envelop No. 3 : Contain the sealed price bid of parties whose bid is found to be technically qualified and responsive shall be opened at a subsequent date to be intimated in advance to such eligible bidders.

- 19.5 Only summary of prices quoted by the bidders will be read out.

- 19.6 The bid of any bidder who has not complied with any of the instructions contained herein may not be considered.

20.0 Process to be Confidential

- 20.1 After the public opening of bids, information relating to the examination, clarification, evaluation and comparisons of bids and recommendations concerning the award of contract shall not be disclosed to bidders or other persons not officially concerned with such process.

- 20.2 Any effort by the bidder to influence the Employer/ Engineer in the process of examination, clarification, evaluation and comparison of bids and decision concerning award of contract may result in the rejection of the bidder's bid.

21.0 Clarification of Bids

- 21.1 To assist in the examination, evaluation and comparison of bids, the Engineer may ask bidders individually for clarification of their bids, including breakdowns of unit prices. The request for clarification and the response shall be in writing or cable or telex, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction or arithmetical errors discovered by the Engineer during the evaluation of the bids in accordance with Clause 24 hereof.

22.0 EVALUATION OF BIDS

The bids will be evaluated by a evaluation team of NRCE/HSCC to assess their merits. The evaluation will be restricted to the information furnished by the bidders, contents of the bids, bidders profile, relevant experience, client list, concept layout plans of the proposed laboratory plan, schemes for specialized systems and services, methodology for execution of the project for achieving the purpose and intent of the scope of works and Technical Presentation given by the bidders.

23.0 EVALUATION OF TECHNICAL BIDS

- 23.1 A two stage procedure will be utilized for evaluating the technical bids. Technical bid will be evaluated for compliance with the essential Minimum Essential Mandatory Qualification criteria requirements of this tender. Mandatory requirements are minimum requirements to be met for the bids to be considered.

Technical Bids of only those firms shall be considered for further evaluation who meet the Minimum Essential Mandatory Qualification Criteria requirements. The Technical Evaluation will be on a simple pass/fail basis. Bids deemed not to meet the essential minimum mandatory qualification criteria will be considered non-responsive and summarily rejected at this stage without further consideration.

- 23.2 The bidders who qualify the essential minimum mandatory qualification criteria, shall be invited to give audio visual presentation before the committee of NRCE/HSCC/ICAR to explain the concept layout plans, schemes of various systems and services and utilities proposed for the laboratory, equipments and construction materials proposed, methodology of construction, technical, personnel & financial capabilities, relevant experience etc. in support of the qualification documents submitted by them.

- 23.3 The details given by the bidders in the "Technical Bid" documents and explained during the presentation, will be evaluated by scoring method. In case any information is not supported with documentary proof, it will be presumed that the bidder does not have that particular facility/performance. Marking shall be done for each component based on documentary evidence and presentation by the bidder wherever called for and the Technical Presentation to be given by the Bidder to the evaluation committee of HSCC/Employer.

The scores for the various criteria for the purpose of technical evaluation shall be as follows.

S.No	Category	Overall Marks	Sub Marks
1.0	TECHNICAL QUALIFICATION CRITERIA		
1.1	Design & Planning Capability Evaluation of : a. Architectural layout plans b. Men & materials movement plans c. Zoning plans d. Specialized Systems and Services Schemes e. Laboratory validation schemes f. Laboratory security schemes g. Services & utilities schemes h. Project implementation methodology	25	4 3 3 3 3 3 3 3
1.2	Personnel, Equipment and Financial capability – Evaluation of : a. Personnel Capabilities (Annexure I) b. Equipment Capabilities (Annexure II) c. Financial Capabilities (Annexure III) d. Manufacturing Capabilities	08	2 2 2 2
1.4	Experience of construction of projects of similar nature & complexity : Evaluation of (Annexure IV) a. Magnitude/Value of the project b. Completion within stipulated time c. Customer satisfaction d. Litigation	08	2 2 2 2
1.5	Construction materials & equipments proposed for construction of the laboratory : Evaluation of (Annexure V)	09	9
Total Marks		50	50

24.0 EVALUATION OF FINANCIAL BIDS

24.1 Determination of Eligibility & Responsiveness

24.1.1 The Engineer will determine whether the bid is substantially responsive to the requirements of the Bid Documents.

For the purpose of this clause, a substantially responsive bid is one which conforms to all the terms, conditions and specifications of the bid documents without any deviation or reservation.

Financial bids of only those bidders who have scored **35 marks or above** in the evaluation of Technical Bids, as per Clause 23.0 above, will be eligible for opening the price bids. Financial Bids of bidders scoring **less than 35 marks** in the evaluation of Technical Bids, as per Clause 23.0 above shall not be opened and their bids shall not be considered for further evaluation.

24.1.2 A bid which in relation to the cost estimate of the Engineer is unrealistically priced and which cannot be substantiated satisfactorily by the bidder may be rejected as non responsive.

25.0 Correction of Errors

25.1 Bids determined to be substantially responsive will be checked by the Engineer for any arithmetical errors in computation and summation. Errors will be dealt by the Engineer as follows :-

- a) Where there is discrepancy between amounts in figures and in words, amount in words will govern.
- b) Incorrectly added totals will be corrected.
- c) In case of any clerical error between the rates indicated in figures and words, the rate in words would prevail. In case there is any inconsistency between the rate and the value extended (after multiplication with the tender quantity), the rate quoted shall prevail.

25.2 If a bidder does not accept the correction of errors as outlined above, his bid will be rejected.

Even through the bidders may satisfy the above requirements, they are subject to be disqualified if they have :

- a. Made misleading or false representation in the statements and enclosures required in the "Technical Bid"
- b. Records of poor performance such as absconding work, not properly completing the contract , or financial failures/weaknesses.
- c. Any other reason as per the decision of the evaluation committee, which shall be final.

26.0 **Evaluation and Comparison of Price Bids**

- 26.1 Only such of the bids as have been determined to be substantially responsive to the requirements of the bid documents will be evaluated. Other non-responsive bids will be rejected.
- 26.2 Bidders shall note that no preference of any nature will be given to any Bidder notwithstanding any custom, usage or instructions to the contrary.
- 26.3 Evaluation of the bids will take into account, in addition to the bid amounts, the following factors.
- a) Arithmetical errors corrected as detailed above.
- b) Such other factors as the Engineer considers may have a potentially significant impact on contract execution price and payments.
- 26.4 Offers, deviations and other factors which are in excess of the requirements of the bid documents or otherwise result in the accrual of unsolicited benefits to the Employer shall not be taken into account in bid evaluation.
- 26.5 Price adjustment provisions applying to the period of execution of the contract shall not be taken into account in bid evaluation except to the extent specifically stated in the contract.
- 26.6** The overall price quoted by the bidders in the Bill of quantities will be evaluated & compared by scoring method as follows :

Description	Marks
Bidder quoting overall lowest evaluated bid of the Bill of quantities.	50
Other Bidders	Marks to be worked out on percentile basis in the proportion of their respective quoted overall price of the Bill of quantities in the financial bid as compared to the lowest price bid. [(Lowest Bidder Price/ Bidder Price) x 50]

AWARD OF CONTRACT

27.0 **Award Criteria**

After detailed technical and financial evaluation, overall marks of the bidders who have been qualified/shortlisted after technical evaluation and whose price bids have been opened will be worked out by adding the marks scored by them in the Technical Evaluation and Financial Evaluation. The bidder scoring maximum overall marks, after adding the marks of Technical Evaluation and Financial Evaluation will be considered for award of work and may be called for negotiations.

28.0 Engineer's Right to Accept any Bid, to Reject any or all Bids

28.1 Employer/Engineer reserves the right to accept or reject any bid including the highest scoring bid and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligations to inform the affected bidder or bidders of the grounds for the Employer's/Engineer's action.

29.0 Notification of Award

29.1 Prior to the expiration of the prescribed period of bid validity, the Engineer will notify the successful bidder by cable or telex or letter confirmed in writing by registered letter that his bid has been accepted.

29.2 The notification of award will constitute the formation of the Contract.

29.3 Upon the furnishing by the successful bidder of a performance security the Engineer will promptly notify the unsuccessful bidders that their bids have been unsuccessful.

30.0 Signing of Agreement

Upon the receipt of the notification of award by the successful bidder, the successful bidder shall fill the Agreement in accordance with form of Agreement included in the Bid Documents and submit the same to the Engineer within two weeks of the date of receipt of notification of award. The Engineer shall return the draft duly approved within ten days from the receipt of the draft and the successful bidder shall get the same engrossed, have the correct amount to stamp duly adjudicated by Superintendent of Stamps and thereafter return the same duly signed and executed on behalf of the successful bidder, all at his own cost within three weeks from the receipt of the approved draft.

31.0 Performance Security

31.1 Within 15 days of receipt of the notification of award from the Engineer, the successful bidder shall furnish to the Engineer a security in the form of a bank guarantee from Nationalized/Scheduled bank, for an amount of 5 percent of the contract value. The validity of the performance security shall be upto the end of the Defect liability Period. The Performance security Bank Guarantee shall be released upon successful completion of defect liability period by the contractor.

31.2 In cases, where the aggregate of expected contract payment would at any time exceed the Engineer's estimate of actual work performed by more than the amount of performance security specified such security shall be increased accordingly at the expense of the successful bidder.

31.3 Failure of the successful bidder to lodge the required bank guarantee shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Engineer may make the award to the next lowest evaluated bidder or, if there are no other bidders, call for new bids.

SECTION- IV

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VOLUME-I

GENERAL CONDITIONS OF CONTRACT Definitions and Interpretation

1.1 Definitions

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

- (a)
 - i. "Principal Employer/Employer" means the person named as such in Section - V of these Conditions and the legal successors in title to such person, but not (except with the consent of the Contractor) any assignee of such person.
 - ii. "Consultant" means the HSCC(I)Ltd. represented by its Chairman-Cum- Managing Director, and his successors in office and assignees acting for and on behalf of the employer.
 - iii. "Engineer" means the person appointed by HSCC to act as Engineer for the purposes of the contract and named as such in Part II of these Conditions.
 - iv. "Engineer's Representative" means a person appointed from time to time by the Engineer under Sub-Clause 2.2.
 - v. "Contractor" means an individual or firms (proprietary or partnership) whether incorporated or not, that has entered into contract (with the employer) and shall include his / its heirs, legal representatives, successors and assigns, successors in interest of individuals or persons. Composing such firms or successors of such firms or the permitted assigns of such individual or firms. Changes in the constitution of the firm, if any shall be immediately notified to the employer, in writing and approval obtained for continued performance of the contract.
 - vi. "Subcontractor" means any person named in the Contract as a Subcontractor for a part of the Works or any person to whom a part of the Works has been subcontracted by the contractor with the consent of the Engineer and the legal successors in title to such person, but not any assignee of any such person.
- (b)
 - i. "Contract" means these conditions (Volume I and II), the Specification, the Drawings (if any), the Bill of Quantities, the Letter of Acceptance, the Contract Agreement (if completed) and such further documents as may be expressly incorporated in the Letter of Acceptance or Contract Agreement (if completed).

- ii. "Specification" means the specification of the Works included in the Contract and any modification thereof or addition thereto made under Clause 51.1 & 51.2 or submitted by the Contractor and approved by the Engineer.
 - iii. "Drawings" means all drawings, calculations and technical information of a like nature provided by the Engineer to the Contractor under the Contract and all drawings, calculations, samples, patterns, models, operation and maintenance manuals and other technical information of a like nature submitted by the Contractor and approved by the Engineer.
 - iv. "Bill of Quantities" means the priced and completed bill of quantities forming part of the Tender.
 - v. "Tender" means the Contractor's priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance. The word Tender is synonymous with "Bid" and the words "Tender Documents" with "Bidding Documents".
 - vi. "Letter of Acceptance/Award" means the formal acceptance by the HSCC of the Tender.
 - vii. "Contract Agreement" means the contract agreement (if any) referred to in Sub-Clause 9.1.
 - viii. "Appendix to Tender" means the appendix comprised in the form of Tender annexed to these Conditions.
- (c)
- i. "Commencement Date" means the date upon which the Contractor receives the notice to commence the works as issued by the Engineer pursuant to Clause 41.1.
 - ii. "Time for Completion" means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract (or as extended under Clause 44.1, 44.2 & 44.3) calculated from the Commencement Date.
- (d)
- i. "Tests on Completion" means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor which are to be made by the Contractor before the Works or any Section or part thereof are taken over by the employer.
 - ii. "Taking-Over Certificate" means a certificate issued pursuant to Clause 48.1 to 48.4.

- (e)
 - i. "Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract.
 - ii. "Retention Money" means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 60.1 (h) or 60.5.
- (f)
 - i. "Works" means the Permanent Works and the Temporary Works or either of them to be executed in accordance with the contract .
 - ii. "Permanent Works" means the permanent works to be executed (including Plant) in accordance with the Contract.
 - iii. "Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.
 - iv. "Plant" means machinery, apparatus and the like intended to form or forming part of the Permanent Works.
 - v. "Contractor's Equipment" means all appliances and things of whatsoever nature (other than Temporary Works) required for the execution and completion of the Works and the remedying of any defects therein, but does not include Plant, materials or other things intended to form or forming part of the Permanent Works.
 - vi. "Section" means a part of the Works specifically identified in the Contract as a Section.
 - vii. "Site" means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.
- (g)
 - i. "Cost" means all expenditure properly incurred or to be incurred, whether on or off the Site, including over head and other charges properly allowable there but does not include any allowance for profit.
 - ii. "Day" means calendar day.
 - iii. "Foreign Currency" means a currency of a country other than that in which the Works are to be located.
 - iv. "Writing" means any hand-written, type-written, or printed communication, including telex, cable and facsimile transmission.

1.2 Heading and Marginal Notes

The headings and marginal notes in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

1.3 Interpretation

Words importing persons or parties shall include firms and corporations and any organisation having legal capacity.

1.4 Singular and Plural

Words importing the singular only also include the plural and vice versa where the context requires.

1.5 Notices, Consents, Approvals, Certificates and Determinations.

Wherever in the Contract provision is made for the giving or issue of any notice, consent, approval, certificate or determination by any person, unless otherwise specified such notice, consent, approval, certificate or determination shall be in writing and the words "notify", "certify" or "determine" shall be construed accordingly.

ENGINEER AND ENGINEER'S REPRESENTATIVE

2.1 Engineer's Duties and Authority

- (a) The Engineer shall carry out the duties specified in the Contract.
- (b) The Engineer may exercise the authority specified in or necessarily to be implied from the Contract, provided, however, that if the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before exercising any such authority particulars of such requirement shall be set out in part II of these Conditions. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.

2.2 Engineer's Representative

- (a) The Engineer's Representative shall be appointed by and be responsible to the Engineer and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.2 (b).

Engineer's Authority to Delegate

- (b) The Engineer may from time to time delegate to the Engineer's Representative any of the duties and authorities vested in the Engineer and he may at any time revoke such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Contractor.

2.3 Communication Given by Engineer's Representative

Any communication given by the Engineer's Representative to the Contractor in accordance with such delegation shall have the same effect as though it had been given by the Engineer. Provided that :

- (a) any failure of the Engineer's Representative to disapprove any work, materials or Plant shall not prejudice the authority of the Engineer to disapprove such work, materials or Plant and to give instructions for the rectification thereof;
- (b) if the Contractor questions any communications of the Engineer's Representative he may refer the matter to the Engineer who shall confirm, reverse or vary the contents of such communication.

2.4 Appointment of Assistants

The Engineer or the Engineer's Representative may appoint any number of persons to assist the Engineer's Representative in the carrying out of his duties under Sub-Clause 2.2. He shall notify to the Contractor the names, duties and scope of authority of such persons. Such assistants shall have no authority to issue any instructions to the Contractor save in so far as such instructions may be necessary to enable them to carry out their duties and to secure their acceptance of materials, Plant or workmanship as being in accordance with the Contract, and any instructions given by any of them for those purposes shall be deemed to have been by the Engineer's Representative.

2.5 Instructions in Writing

Instructions given by the Engineer shall be in writing, provided that if for any reason the Engineer considers it necessary to give any such instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Engineer, whether before or after carrying out of the instruction shall be deemed to be an instruction, within the meaning of this Sub-Clause. Provided further that if the Contractor, within 7 days, confirms in writing to the Engineer any oral instruction of the Engineer and such confirmation is not contradicted in writing within 7 days by the Engineer, it shall be deemed to be an instruction of the Engineer.

The provisions of this Sub-Clause shall equally apply to instructions given by the Engineer's Representative and any assistants of the Engineer or the Engineer's Representative appointed pursuant to Sub-Clause 2.4.

2.6 Engineer to Act Impartially

Wherever, under the Contract, the Engineer is required to exercise his discretion by :

- (a) giving his decision, opinion or consent, or
- (b) expressing his satisfaction or approval, or
- (c) determining value, or
- (d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor he shall exercise such discretion impartially within the terms of the Contract and having regard to all the circumstances. Any such decision, opinion, consent, expression of satisfaction, or approval, determination of value or action may be opened up, reviewed or revised as provided in Clause 67.1 to 67.4.

ASSIGNMENT AND SUBCONTRACTING

3.1 Assignment of Contract

The Contractor shall not, without the prior consent of the Consultant (which consent, shall be at the sole discretion of the Consultant), assign the Contract or any part thereof, or any benefit or interest therein or thereunder, otherwise than by:

- (a) a charge in favour of the Contractor's bankers of any monies due or to become due under the Contract, or
- (b) assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable. The provision of labour as piece work basis shall not deemed to be subcontracting under this clause.

4.1 Sub-Contracting

The Contractor shall not subcontract the whole or part of the works of the Works. Except where otherwise provided by the Contract, the Contractor shall not subcontract any other part of the works without the prior consent of the Engineer (which consent shall be at the sole discretion of the Engineer). While subcontracting, the contractor will consider the parties / agencies depending upon their capabilities and get the works implemented under his own overall supervision. However this shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of a Subcontractor, his agents, servants or workmen as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen.

Provided that the Contractor shall not be required to obtain such consent for:

- (a) the provision of labour,
- (b) the purchase of materials which are in accordance with the standards specified in the Contract.

CONTRACT DOCUMENTS

5.1 Language/s and Law

- (a) The language in which the Contract documents shall be drawn up, is English.
- (b) The country the law of which shall apply to the Contract and according to which the Contract shall be construed is India.

5.2 Priority of Contract Documents

The several documents forming the Contract are to be taken as mutually explanatory to one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.

In case of discrepancy between the schedule of quantities, the specifications and or the drawings, the following order of preference shall be observed :

- (1) Description of Schedule of Quantities and scope of work
- (2) Particular specifications and special condition, if any
- (3) Drawings
- (4) C.P.W.D Specifications (Applicable to civil and electrical works)
- (5) Indian Standard specifications of B.I.S and other relevant reference standards

If there are varying or conflicting provisions made in any one document forming part of the Contract, the accepting authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.

Any error in description, quantity or rate in schedule of quantities or any omission there from shall not vitiate the Contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract.

6.1 Custody and Supply of Drawings and Documents

The Drawings shall remain in the sole custody of the Engineer, but two copies thereof shall be provided to the Contractor free of charge. The Contractor shall make at his own cost any further copies required by him. Unless it is strictly necessary for the purposes of the Contract, the Drawings, Specification and other documents provided by the Employer or the Engineer shall not, without the consent of the Engineer, be used or communicated to a third party by the Contractor. Upon issue of the Defects Liability Certificate (Clause 61.1), the Contractor shall return to the Engineer all Drawings, Specifications and other documents provided under the Contract.

The Contractor shall supply to the Engineer four copies of all Drawings, Specifications and other documents submitted by the Contractor and approved by the Engineer in accordance with Clause 7.1 to 7.3, together with a reproducible copy of any material which cannot be reproduced to an equal standard by photocopying. In addition the Contractor shall supply such further copies of such Drawings, Specification and other documents as the Engineer may request in writing for the use of the Employer.

6.2 One Copy of Drawings to be kept on Site

One copy of the Drawings, provided to or supplied by the Contractor as aforesaid, shall be kept by the Contractor on the Site and the same shall at all

reasonable times be available for inspection and use by the Engineer and by any other person authorised by the Engineer in writing.

6.3 Disruption of Progress

The Contractor shall give notice to the Engineer, whenever planning or execution of the Works is likely to be delayed or disrupted unless any further drawing or instruction is issued by the Engineer within 15 days or such other reasonable time as may be decided by the Engineer. The notice shall include details of the drawing or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

6.4 Delay and Cost of Delay of Drawings

If, by reason of any failure or inability of the Engineer to issue, within a time reasonable in all the circumstances, any drawing or instruction for which notice has been given by the Contractor in accordance with Sub-Clause 6.3, the Contractor suffers delay then the Engineer shall, after due consultation with the Employer and the Contractor, determine any extension of time to which the Contractor is entitled under Clause 44.1 to 44.3.

6.5 Failure by Contractor to Submit Drawings

If the failure or inability of the Engineer to issue any drawings or instructions is caused in whole or in part by the failure of the Contractor to submit Drawings, Specification or other documents which he is required to submit under the Contract, the Engineer shall take such failure by the Contractor into account when making his determination pursuant to Sub-Clause 6.4.

7.1 Supplementary Drawings and Instructions

The Engineer shall have authority to issue to the Contractor, from time to time, such supplementary Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and completion of the Works and the remedying of any defects therein. The Contractor shall carry out and be bound by the same.

7.2 Permanent Works Designed by Contractor

Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall submit to the Engineer, for approval:

- (a) such drawings, specifications, calculations and other information as shall be necessary to satisfy the Engineer as to the suitability and adequacy of that design, and
- (b) operation and maintenance manuals together with drawings of the relevant part of the Permanent Works as completed, in sufficient detail to enable the Employer to operate, maintain, dismantle, reassemble and adjust the Permanent Works incorporating that design. The Works shall not be considered to be completed for the purposes of taking over in accordance with Clause 48.1 to 48.4 until such operation and maintenance manuals, together with drawings on completion, have been submitted to and approved by the Engineer.

7.3 Responsibility Unaffected by Approval

Approval by the Engineer, in accordance with Sub-Clause 7.2, shall not relieve the Contractor of any of his responsibilities under the Contract.

GENERAL OBLIGATIONS

8.1 Contractor's General Responsibilities

The Contractor shall, with due care and diligence, design (to the extent provided for by the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract. The Contractor shall provide all superintendence, labour, materials, Plant, Contractor's Equipment and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion 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. The contractor shall promptly notify the Employer and the Engineer of any error, omission, fault or any other defect in the design of or specifications for the works which he discovers when reviewing the contract documents or in the process of execution of the works.

8.2 Site Operations and Methods of Construction

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction. Provided that the Contractor shall not be responsible (except as stated hereunder or as may be otherwise agreed) for the design or specification of Permanent Works, or for the design or specification of any Temporary Works not prepared by the Contractor. Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall be fully responsible for that part of such Works, notwithstanding any approval by the Engineer.

9.1 Contract Agreement

The Contractor shall, if called upon so to do, enter into and execute the Contract Agreement with HSCC (for and on behalf of NRCE/ICAR), to be prepared and completed at the cost of the Contractor, in the form annexed to these Conditions with such modification as may be necessary.

10.1 Performance Security

The Contractor shall provide security for his proper performance of the Contract to the Employer within 15 days after the receipt of the Letter of Acceptance. The performance security shall be in the form of bank guarantee. The amount of the bank guarantee shall be 5 percent of the Contract Price. It shall be issued by a Nationalised bank/scheduled bank. When providing such security to the Employer, the Contractor shall notify the Engineer of so doing.

Without limitation to the provisions of the preceding paragraph, whenever the Engineer determines an addition to the Contract Price as a result of a change in cost and/or legislation or as a result of a variation amounting to more than 25 percent of the Contract Price, the Contractor, at the Engineer's written request, shall promptly increase the value of the performance security by an equal percentage.

Failure of the successful bidder to lodge the required bank guarantee shall constitute sufficient grounds for the annulment of the award.

10.2 Period of Validity of Performance Security

The performance security shall be valid until the Contractor has executed and completed the Works and remedied any defects therein in accordance with the Contract. No claim shall be made against such security after the issue of the Defects Liability Certificate in accordance with Sub-Clause 62.1 and such security shall be returned to the Contractor within 14 days of the issue of the said Defects Liability Certificate.

10.3 Cost of Securities

The cost of complying with the requirements of this clause shall be borne by the Contractor.

11.1 Inspection of Site

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself (so far as is practicable, having regard to considerations of cost and time) before submitting his Tender, as to:

- (a) the form and nature thereof, including the sub-surface conditions,
- (b) the hydrological and climatic conditions,
- (c) the extent and nature of work and materials necessary for the execution and completion of the Works and the remedying of any defects therein, and
- (d) the means of access to the Site and the accommodation he may require.

And in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender.

12.1 Sufficiency of Tender

The Contractor shall be deemed to have based his offer on the data made available by the Employer and on his own inspection and examination, all as aforementioned.

The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the offer and of the rates and prices stated in the Bill of Quantities, all of which shall, except insofar as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, Plant or services or of contingencies) and all matters and things necessary for the proper execution and completion of the Works and the remedying of any defects therein.

12.2 Adverse Physical Obstructions or Conditions

If, however, during the execution of the Works the Contractor encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his reasonable opinion, not foreseeable by an experienced contractor, the Contractor shall forthwith give notice thereof to the Engineer. On receipt of such notice, the Engineer shall, if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced contractor, after due consultation with the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44.1 to 44.3 and
- (b) the amount of any costs which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price.

And shall notify the Contractor accordingly. Such determinations shall take account of any instruction which the Engineer may issue to the Contractor in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Contractor may take in the absence of specific instructions from the Engineer.

13.1 Work to be in Accordance with Contract

Unless it is legally or physically impossible, the Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract to the satisfaction of the Engineer. The Contractor shall comply with and adhere strictly to the Engineer's instructions on any matter, whether mentioned in the Contract or not, touching or concerning the Works. The Contractor shall take instructions only from the Engineer or subject to the provisions of Clause 2.1 to 2.6, from the Engineer's Representative.

14.1 Programme to be Submitted

The Contractor shall, within 20 days after the date of the Letter of Award, submit to the Engineer for his consent a programme in PERT & CPM method including labour & material resources, in such form and detail as the Engineer shall reasonably prescribe, for the execution of the Works. The Contractor shall, whenever required by the Engineer, also provide in writing for his information a general description of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.

14.2 Revised Programme

If at any time it should appear to the Engineer that the actual progress of the Works does not conform to the programme to which consent has been given under Sub-Clause 14.1 the Contractor shall produce, at the request of the Engineer, a revised programme showing the modifications to such programme necessary to ensure completion of the Works within the Time for Completion.

14.3 Cash Flow Estimate to be Submitted

The Contractor shall, within 20 days after the date of the Letter of Award, provide to the Engineer for his information a detailed funds requirement, in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised funds requirement at quarterly intervals, if required to do so by the Engineer.

14.4 Contractor not Relieved of Duties or Responsibilities

The submission to and consent by the Engineer to such programs or the provision of such general descriptions or cash flow estimates shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

15.1 Contractor's Superintendence

The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor, or a competent and authorised representative approved of by the Engineer, which approval may at any time be withdrawn, shall give his whole time to the superintendence of the Works. Such authorised representative shall receive, on behalf of the Contractor, instructions from the Engineer or, subject to the provisions of Clause 2.1 to 2.6, the Engineer's Representative.

If approval of the representative is withdrawn by the Engineer, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned, after receiving notice of such withdrawal, remove the representative from the Works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another representative approved by the Engineer.

If the Contractor's authorised representative is not in the opinion of the Engineer fluent in English, the contractor shall have available at site at all times an interpreter competent to ensure the proper transmission of instructions and information.

16.1 Contractor's Employees

The Contractor shall provide on the Site in connection with the execution and completion of the Works and the remedying of any defects therein :

- (a) only such technical assistants as are skilled and experienced in their respective callings and such foremen and leading hands as are competent to give proper superintendence of the Works, and
- (b) such skilled, semi-skilled and un-skilled labour as is necessary for the proper and timely fulfilling of the Contractor's obligations under the Contract.

16.2 Engineer at Liberty to Object

The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person provided by the Contractor who, in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence on Site is otherwise considered by the Engineer to be undesirable, and such person shall not be again allowed upon the Works without the consent of the Engineer. Any person so removed from the Works shall be replaced as soon as possible. A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of English or the contractor shall have available at site at all times a sufficient number of competent interpreters to ensure a proper transmission of instructions and information.

The contractor is encouraged to the extent practicable and reasonable to employ staff and labourers from sources within India.

17.1 Setting-out

The Contractor shall be responsible for :

- (a) the accurate setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing,
- (b) the correctness, subject as above mentioned, of the position, levels dimensions and alignment of all parts of the Works, and
- (c) the provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities.

If, at any time during the execution of the Works, any error appears in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer, in which case the Engineer shall determine an addition to the Contract Price in accordance with Clause 52.1 to 52.4 and shall notify the Contractor accordingly.

The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy thereof and the Contractor shall carefully protect and preserve all bench-marks, sight-rails, pegs and other things used in setting-out the Works.

The Contractor shall give to the Engineer not less than 72(seventy two) hours notice of his intention to set out or give levels for any part of the Works so that timely arrangement may be made for checking or issuing instructions. He shall indicate therein by which date the information, if any is required by him.

18.1 Boreholes and Exploratory Excavation

If, at any time during the execution of the works the Engineer requires the contractor to make bore-holes or to carry out exploratory excavations in excess of the requirements specified elsewhere in the contract, such

requirement shall be the subject of an instruction in accordance with clause 51.1 & 51.2, unless an item or a provisional sum in respect of such work is included in the Bill of Quantities.

19.1 Safety, Security and Protection of the Environment

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

- (a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site (so far as the same is under his control) and the Works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons, and
- (b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the Works or for the safety and convenience of the public or others. Storage space, if any, available at site may be provided to the contractor by the Engineer/Employer. However all necessary security, safety arrangements for the materials, equipments, goods so stored shall be provided by the contractor.
- (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods or operation.
- (d) Screen all lights provided by the Contractor so as not to interfere with any signal light on the railways or with any traffic or signal lights of any local authority.

19.2 Employer's Responsibilities

If under Clause 31.1 (b) the Employer shall carry out work on the Site with his own work-men he shall, in respect of such work:

- (a) have full regard to the safety of all persons entitled to be upon the Site, and
- (b) keep the Site in an orderly state appropriate to the avoidance of danger to such persons.

If under Clause 31.1(b) the Employer shall employ other contractors on the Site he shall require them to have the same regard for safety and avoidance of danger.

20.1 Care of Works

The Contractor shall take full responsibility for the care of the Works and materials and Plant for incorporation therein from the Commencement Date until the date of issue of the Taking-Over Certificate for the whole of the

Works, when the responsibility for the said care shall subject to clause 20.1(b) pass to the Employer, Provided that:

- (a) if the Engineer issues a Taking-Over Certificate for any Section or part of the Permanent Works the Contractor shall cease to be liable for the care of that Section or part from the date of issue of the Taking-Over Certificate, when the responsibility for the care of that Section or part shall pass to the Employer, and
- (b) the Contractor shall take full responsibility for the care of any outstanding Works and materials and Plant for incorporation therein which he undertakes to or is otherwise required to finish during the Defects Liability Period until such outstanding Works have been completed pursuant to Clause 49.1 to 49.4.

20.2 Responsibility to Rectify Loss or Damage

If any loss or damage happens to the Works, or any part thereof, or materials or Plant for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in Sub-Clause 20.4, the Contractor shall, at his own cost, rectify such loss or damage so that the Permanent Works conform in every respect with the provisions of the Contract to the satisfaction of the Engineer. The Contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 49.1 to 49.4 and 50.1.

20.3 Loss or Damage Due to Employer's Risk

In the event of any such loss or damage happening from any of the risks defined in Sub-Clause 20.4, or in combination with other risks, the Contractor shall, if and to the extent required by the Engineer, rectify the loss or damage and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52.1 to 52.4 and shall notify the Contractor accordingly. In the case of combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Employer.

20.4 Employer's Risks

The Employer's risks are :

- (a) (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (ii) rebellion, revolution, insurrection, or military or usurped power, or civil war,
- (iii) ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,

- (iv) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speed,
 - (b) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract,
 - (c) loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible,
- and
- (d) any operation of the forces of nature (insofar as it occurs on the site) which an experienced contractor:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (A) prevent loss or damage to physical property from occurring by taking appropriate measures, or
 - (B) insure against.

21.1 Insurance of Works and Contractor's Equipment

The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 20.1 to 20.4, insure:

- (a) the Works, together with materials and Plant for incorporation therein, to the full replacement cost and it being understood that such insurance shall provide for compensation to be payable to rectify the loss or damage incurred.
- (b) an additional sum of 15 percent of such replacement cost, or as may be specified in Part II of these Conditions, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature, and it being understood that such insurance shall provide for compensation to be payable to rectify the loss or damage incurred.
- (c) the Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

The insurance under clause 21.1 shall be issued by an insurance company which has been determined by the contractor to be acceptable to the Engineer.

21.2 Scope of Cover

The insurance in paragraphs (a) and (b) of Sub-Clause 21.1 shall be in the joint names of the Contractor and the Employer and shall cover:

- (a) the Employer and the Contractor against all loss or damage from whatsoever cause arising (including natural calamities, earthquake, subsidence, landslide, rock slide, flood, storm, cyclone, fire, theft, burglary, strike, riot, sabotage, terrorism), other than as provided in Sub- Clause 21.4, from the commencement date until the date of issue of the relevant Taking-Over Certificate in respect of the Works or any Section or part thereof as the case may be, and
- (b) the Contractor for his liability:
 - (i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period, and
 - (ii) for loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49.1 to 49.4 and 50.1.

It shall be the responsibility of contractor to notify the Insurance Company of any change in the nature and extent of the works and to ensure the adequacy of the Insurance cover at all times during the period of contract.

21.3 Responsibility for Amounts not Recovered

Any amounts not insured or not recovered from the insurers shall be borne by the Employer or the Contractor in accordance with their responsibilities under Clause 20.1 to 20.4.

21.4 Exclusions

There shall be no obligation for the insurance in Sub-Clause 21.1 to include loss or damage caused by the risks listed under sub clause 20.4 para a (i) to (iv).

If the Contractor receives instructions from the Employer to insure against War Risk, such insurance if normally available shall be effected, at the cost of the Employer, with an Insurance Company acceptable to the Consultant and shall be in the joint names of the contractor and the Employer.

22.1 Damage to Persons and Property

The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Employer against all losses and claims in respect of:

- (a) death of or injury to any person, or
- (b) loss or damage to any property (other than the Works) :

Which may arise out of or in consequence of the execution and completion of the Works and the remedying of any defects therein, and against all claims, proceedings, damages, costs, charges and expenses

whatsoever in respect thereof or in relation thereto, subject to the exceptions defined in Sub-Clause-22.2.

22.2 Exceptions

The "exceptions" referred to in Sub-Clause 22.1 are:

- (a) the permanent use or occupation of land by the Works, or any part thereof,
- (b) the right of the Employer to execute the Works, or any part thereof, on, over, under, in or through any land,
- (c) damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the Contract.
- (d) death of or injury to persons or loss of or damage to property resulting from any action or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor, or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury or damage as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the injury or damage.

22.3 Indemnity by Employer

The Employer shall indemnify the Contractor against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the exceptions defined in Sub-Clause 22.2.

23.1 Third Party Insurance

The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 22.1 to 22.3, insure, in the joint names of the Contractor and the Employer, against liabilities for death of or injury to any person (other than as provided in Clause 24.1 to 24.2 or loss of or damage arising out of the performance of the Contract other than the exceptions defined in paragraphs (a), (b) and (c) of Sub-Clause 22.2.

23.2 Minimum Amount of Insurance

Such insurance shall be for at least the amount stated in Appendix to Tender.

23.3 Cross Liabilities

The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Employer as separate insured.

24.1 Accident or Injury to Workmen

The Employer shall not be liable for or in respect of any damages or compensation payable to any workman other than for death or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, other than those for which the Employer is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

24.2 Insurance Against Accident to Workmen

The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Works. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under this Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Consultant, when required, such policy of insurance and the receipt for the payment for current premium.

25.1 Evidence and Terms of Insurance

The Contractor shall provide evidence to the Consultant as soon as practicable after the respective insurance have been taken out but in any case prior to the start of work at the Site that insurance required under the Contract have been effected and shall, within 84 days of the Commencement Date, provide the insurance policies to the Employer. When providing such evidence and such policies to the Employer, the Contractor shall notify the Engineer of so doing. Such insurance policies shall be consistent with the general terms agreed prior to the issue of the Letter of Acceptance. The Contractor shall effect all insurance for which he is responsible with insurers and in terms approved by the Consultant.

25.2 Adequacy of Insurance

The Contractor shall notify the insurers of changes in the nature, extent or programme for the execution of the Works and ensure the adequacy of the insurance at all times in accordance with the terms of the Contract and shall, when required, produce to the Consultant the insurance policies in force and the receipts for payment of the current premiums.

25.3 Remedy on Contractor's Failure to Insure

If the Contractor fails to effect and keep in force any of the insurance required under the Contract, or fails to provide the policies to Consultant within the period required by Sub-Clause 25.1, then and in any such case the Employer may effect and keep in force any such insurance and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or to become due to the Contractor, or recover the same as a debt due from the Contractor.

25.4 Compliance with Policy Conditions

In the event that the Contractor or the Employer fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to, the insurance referred to in Clauses 21.1 to 21.4, 23.1 to 23.3 and 24.1 to 24.2) with insurers from India.

26.1 Compliance with Statutes, Regulations

The Contractor shall conform in all respects, including by the giving of all notices and the paying of all fees, with the provision of :

- (a) any National or State Statute, Ordinance, or other Law, or any regulation, or bye-law of any local or other duly constituted authority in relation to the execution and completion of the Works and the remedying of any defects therein, and
- (b) the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works, and the Contractor shall keep the Employer indemnified against all penalties and liability of every kind for breach of any such provision. Provided always that the Employer shall be responsible for obtaining any planning, zoning or other similar permission required for the Works to proceed and shall indemnify the Contractor in accordance with Sub-Clause 22.3.

27.1 Fossils

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as between the Employer and the Contractor, be deemed to be the absolute property of the Employer. The Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same. If, by reason of such instructions, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44.1 to 44.3, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly.

28.1 Patent Rights

The Contractor shall save harmless and indemnify the Employer from and against all claims and proceeding for or on account of infringement of any

patent right, design trademark or name or other protected rights in respect of any Contractor's Equipment, materials or Plant used for or in connection with or for incorporation in the Works and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.

28.2 Royalties

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

29.1 Interference with Traffic and Adjoining Properties

All operation necessary for the execution and completion of the Works and the remedying of any defects therein shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with:

- (a) the convenience of the public, or
- (b) the access to, use and occupation of public or private road, railway and any other right of way and footpaths to or of properties whether in the possession of the Employer or of any other person.

The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, arising out of, or in relation to any such matters insofar as the Contractor is responsible thereof.

If any plant (floating or otherwise) belonging to or hired by the Contractor or any sub-contractor or any person employed by the Contractor or by any sub-contractor or any materials or things therein or there from sink from any cause whatsoever, it shall immediately be reported by the Contractor to the competent authorities and the Engineer's Representative, and Contractor shall forthwith, at his cost raise and remove any such plant, materials or things or otherwise deal with the same as the Engineer may direct.

The fact that such sunken plant, materials or things are insured or have been declared a total loss or do not represent any further value shall not absolve the Contractor from his obligations under this Clause to raise and remove the same.

Until such sunken plant or materials or things have been raised and removed, the Contractor shall set such buoys and display at night such lights and do all such things for the safety as may be required by the competent authorities or by the Engineer's Representative.

In the event of the Contractor not carrying out the obligations imposed on him by this Clause, the Employer may cause to set buoy and display at night light on such plant and raise and remove the same without prejudice to the right of the Employer to hold the Contractor liable and all expenses and consequences thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from him as a debt by the Employer or may be deducted by the Employer from any moneys due or which may become due to the Contractor.

30.1 Avoidance of Damage to Roads

The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his Subcontractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of materials, Plant, Contractor's Equipment or Temporary Works from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such roads and bridges.

30.2 Transport of Contractor's Equipment or Temporary Works

Save insofar as the Contract otherwise provides, the Contractor shall be responsible for and shall pay the cost of strengthening any bridges or altering or improving any road communicating with or on the routes to the Site to facilitate the movement of Contractor's Equipment or Temporary Works and the Contractor shall indemnify and keep indemnified the Employer against all claims for damage to any such road or bridge caused by such movement, including such claims as may be made directly against the Employer, and shall negotiate and pay all claims arising out of such damage.

If it is found necessary for the Contractor to move one or more loads of heavy constructional plant and equipment, materials or preconstructed units or parts of units of work over roads, highways, bridges on which such oversized and overweight items are not normally allowed to be moved, the Contractor shall obtain prior permission from the concerned authorities. Payments for complying with the requirements, if any, for protection of or strengthening of the roads, highways or bridges shall be made by the Contractor and such expenses shall be deemed to be included in his contract price.

30.3 Transport of Materials or Plant

If, notwithstanding Sub-Clause 30.1, any damage occurs to any bridge or road communicating with or on the routes to the Site arising from the transport of materials or Plant, the Contractor shall notify the Engineer, as soon as he becomes aware of such damage or as soon as he receives any claim from the authority entitled to make such claim. Where under any law or regulation the hauler of such materials or Plant is required to indemnify the road authority against damage the Employer shall not be liable for any costs, charges or expenses in respect thereof or in relation thereto. In other cases the Employer shall negotiate the settlement of and pay all sums due in respect of such claim and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings, damages, costs charges and expenses in relation thereto. Provided that if and so far as any such claim or part thereof is, in the opinion of the Engineer, due to any failure on the part of the Contractor to observe and perform his obligations under Sub-Clause 30.1, then the amount, determined by the Engineer, due to any failure on the part of the Contractor to observe and perform his obligations under Sub-Clause 30.1, then the amount, determined by the Engineer, after due consultation with the Employer and the Contractor, to be due to such failure shall be recoverable from the Contractor by the Employer and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly. Provided also that the Employer shall notify the Contractor whenever a settlement is to be negotiated and, where any amount

may be due from the Contractor, the Employer shall consult with the Contractor before such settlement is agreed.

30.4 Water borne Traffic

Where the nature of the Works is such as to require the use by the Contractor of water borne transport the foregoing provisions of this Clause shall be construed as through "road" included a lock, dock, sea wall or other structure related to a waterway and "vehicle" included craft, and shall have effect accordingly.

31.1 Opportunities for other Contractors

The Contractor shall, in accordance with the requirements of the Engineer, afford all reasonable opportunities for carrying out their work to:

- (a) any other contractors employed by the employer and their workmen,
- (b) the workmen of Employer, and
- (c) the workmen of any duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the employer may enter into in connection with or ancillary to the Works.

31.2 Facilities for other Contractors

If, however, pursuant to Sub-Clause 31.1 the Contractor shall, on the written request of the Engineer:

- (a) make available to any such other contractor, or to the Employer or any such authority, any roads or ways for the maintenance of which the Contractor is responsible, or
- (b) permit the use, by any such, of Temporary Works or Contractor's Equipment on the Site,
- (c) provide any other service of whatsoever nature for any such, the Engineer shall determine an addition to the Contract Price in accordance with Clause 52.1 to 52.4 and shall notify the Contractor accordingly.

32.1 Contractor to keep Site Clear

During the execution of the Works the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

33.1 Clearance of Site on Completion

Before the issue of any Taking-Over Certificate the Contractor shall clear away and remove from that part of the Site to which such Taking-Over Certificate relates all Contractor's Equipment, surplus material rubbish and Temporary Works of every kind, and leave such part of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer. Provided that the Contractor shall be entitled to retain on Site, until the end of the Defects Liability Period, such materials, Contractor's Equipment and Temporary Works as are required by him for the purpose of fulfilling his obligations during the Defects Liability Period.

34.1 Labour

The contractor shall make his own local or other arrangement for the engagement of all labour.

The Contractor and his sub contractors shall abide by the local laws and regulations governing labour applicable from time to time.

Engagement of Labour

The Contractor shall make his own arrangements for the engagement of all labour, local or otherwise, and, save insofar as the Contract otherwise provides, for the transport, housing, feeding and payment thereof.

Supply of Water

Water for drinking shall be made available to the contractors labour, workers and staff, if the spare capacities are available with the Employer/Principal Employer. However, in case the Employer is not able to provide drinking water to the contractors personnel, the contractor shall provide an adequate supply of drinking and clear water for the use of contractor's and his subcontractor's staff and labour engaged at site.

Alcoholic Liquor or Drugs

The Contractor shall not import, sell, give, barter or otherwise dispose of any alcoholic liquor, or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his sub-contractors, agents or employees.

Arms and Ammunition

The Contractor shall not give, barter or otherwise dispose off to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

Festivals and Religious Customs

The Contractor shall in all dealings with labour in his employment have due regard to all recognised festivals, days of rest and religious or other customs.

Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

Disorderly Conduct, etc.

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his employees and for the preservation of peace and protection of persons and property in the neighbourhood of the works against the same.

Observance of Legislation etc.

The Contractor shall at all times during the continuance of the Contract comply fully with all existing Acts, regulations and bylaws including all statutory amendments and re-enactments and acts that may be passed in future either by the state or the Central Government or local authority, including, Indian Workmen's Compensation Act, Contract Labour (Regulation and Abolition) Act 1970 and Equal remuneration Act 1976. Factories Act, Minimum Wages Act provident fund regulations employees provident Fund Act and schemes made under same Act, Health and Sanitary Arrangements for workmen, Insurance and other benefits and shall keep the Employer indemnified in case any action is commenced for contravention by the contractor. If the Employer is caused to pay or reimburse any amounts for non-observance of the provisions of this clause on the part of the contractor the Engineer shall have the right to deduct from any moneys due to the contractor or recover from the contractor personally any sum required or estimated to be required for making good the loss or damage suffered by the Employer. All registration and station inspection fees if any in respect of his work pursuant to the contract shall be to the account of the contractor.

Fair Wages :

The Contractor shall pay the labours engaged by him on the work not less than a fair wage, which expression shall mean, whether or time or piecework, the respective rates of wages as fixed by the public works department as fair wages for the area payable to the different categories of labourers or those notified under the Minimum wages act for corresponding employees of the Employer whichever may be higher.

The Contractor shall notwithstanding the provisions of any contract to the contrary, cause to be paid a fair wage to the labourers indirectly engaged on the works including any labour engaged by subcontractors in connection with the said works as if the labourer has been immediately employed by him.

Notices :

The Contractor shall before he commences the work display and correctly maintain in a clean and legible condition at a conspicuous place on the Site notices in English and in a local language spoken by the majority of the workers, stating therein the rate of wages which have been fixed as fair wages and the hours of work for which such wages are earned and send a copy of such notices to the Engineer.

Wage Records :

The contractor shall maintain records of wages and other remuneration paid to his employees in such form as may be convenient and to the requirements of the Employer/Engineer and the conciliation officer (Central) Ministry of Labour, Government of India, or such other authorised person appointed by the Central or State Government and the same shall include the following particulars of each worker:

- i) Name, works number and grade
- ii) Rate of daily or monthly wage.
- iii) Nature of work on which employed
- iv) Total number of days worked during each wage period.
- v) Total amount payable for the work during each wage period.
- vi) All deductions made from the wage with details in each case of the ground for which the deduction is made.
- vii) Wage actually paid for each wage period.

The contractor shall provide a wage slip for each worker employed on the works.

The wage record and wage slips shall be preserved for at least 12 months after the last entry.

Inspection of Wage Records

The Contractor shall allow inspection of the aforesaid wage records and wage slip to the Engineer and to any of his workers or to his agent at a convenient time and place after due notice is received, or to the Employer or any other person authorised by him on his behalf.

The Employer and the Engineer or any other person authorised by them on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of the Fair Wages Clause. He shall also have the power to investigate into any complaint regarding any default made by the Contractor or sub-contractor in regard to such provision.

The Employer shall have the right to deduct from the moneys due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non payment of the aforesaid fair wage, except on account of any deductions that may be permissible under any law for the time being in force.

Representation of Parties

- (i) A workman shall be entitled to be represented in any investigation or enquiry under this Clause by :-
 - (a) An officer of a registered trade union of which he is a member.
 - (b) An officer of a federation of trade Union to which the Trade Union referred to in pervious Sub-clause is affiliated.
 - (c) Where the Worker is not a member of any registered Trade Union, by an officer of a registered Trade Union connected with or by any other workman employed in the industry in which the workers is employed.

- (ii) The contractor or sub-contractor shall be entitled to be represented in any investigations or enquiry under this clause by an officer of an Association of Employers of which he is a member.
- (iii) No party shall be represented by a legal practitioner in any investigation or enquiry under this clause, unless all parties agree.

Safety Provisions

The Contractor shall comply with all the precautions as required for the safety of the workman by the I.L.O Convention (NO.62) as far as they are applicable to the Contract. The Contractor shall provide all necessary safety appliances, gears like goggles, helmets, masks, etc. to the workmen and the staff.

The Contractor shall be responsible for observance by his sub-Contractors of the foregoing provisions.

Footwear

The Contractor shall at his own expense provide footwear for all labour engaged on concrete mixing work and all other type of work involving the use of tar, cement, etc. to the satisfaction of the Engineer or his Representative, and on his failure to do so the Employer shall be entitled to provide the same and recover the cost from the Contractor.

The Contractor shall deliver to the Engineer's Representative at his office on the Site a return in detail in such form and at such intervals as the Employer / Engineer may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed on the Site.

35.1 Returns of Labour, etc.

The Contractor shall, if required by the Engineer, deliver to the Engineer's Representative, or at his office, a return in detail in such form and at such intervals as the Engineer may prescribe showing the supervisory staff and the number of the several classes of labour from time to time employed by the Contractor on the site and such information respecting constructional plant as the Engineer's Representative may require.

The Contractor shall file all labour returns in detail to the respective authorities / statutory bodies as prescribed under law applicable at the work site and inform the Employer / Engineer with copies of such returns directly filed.

MATERIALS, PLANTS AND WORKMANSHIP

36.1 Quality of Materials, Plant and Workmanship

All materials Plant and workmanship shall be

- (a) of the Respective kinds described in the Contract and in accordance with the Engineer's instructions, and
- (b) subjected from time to time to such tests as the Engineer may require at the place of manufacture, fabrication or preparation, or on the Site or

at such other place or places as may be specified in the Contract, or at all or any of such places.

The Contractor shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or plant and shall supply samples of materials, before incorporation in the Works, for testing as may be selected and required by the Engineer.

The contractor is encouraged to the extent practicable and reasonable, to use plant and material from sources within India.

36.2 Cost of Samples

All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract.

36.3 Cost of Test

The cost of making any test shall be borne by the Contractor if such test is

- (a) clearly intended by or provided for in the Contract, or
- (b) particularised in the Contract (in cases only of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfil) in sufficient detail to enable the Contractor to price or allow for the same in his Tender.

36.4 Cost of Tests not provided for

If any test required by the Engineer which is

- (a) not so intended by or provided for, or
- (b) (in the cases above mentioned) not so particularised, or
- (c) though so intended or provided for, required by the Engineer to be carried out at any place other than the Site local test house or the place of manufacture, fabrication or preparation of the materials or Plant tested.

Shows the materials, Plant or workmanship not to be in accordance with the provision of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case Sub- Clause 36.5 shall apply.

36.5 Engineer's Determination Where Tests not provided for

Where, pursuant to Sub-Clause 36.4, this Sub-Clause applies the Engineer shall, after due consultation with the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44.1 to 44.3, and shall notify the Contractor accordingly.

37.1 Inspection of Operations

The Engineer, and any person authorised by him, shall at all reasonable times have access to the Site and to all workshops and places where materials or Plant are being manufactured, fabricated or prepared for the Works and the Contractor shall afford every facility for and every assistance in obtaining the right to such access.

37.2 Inspection and Testing

The Engineer shall be entitled, during manufacture, fabrication or preparation to inspect and test the materials and Plant to be supplied under the Contract. If materials or Plant are being manufactured, fabricated or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Engineer to carry out such inspection and testing in those workshops or places. Such inspection or testing shall not release the Contractor from any obligation under the Contract.

37.3 Dates for Inspection and Testing

The Contractor shall agree with the Engineer on the time and place for inspection or testing of any materials or Plant as provided in the Contract. The Engineer shall give the Contractor not less than 24 hours notice of his intention to carry out the inspection or to attend the tests. If the Engineer, or his duly authorised representative, does not attend on the date agreed, the Contractor may, unless otherwise instructed by the Engineer, proceed with the tests, which shall be deemed to have been made in the presence of the Engineer. The Contractor shall forthwith forward to the Engineer duly certified copies of the test readings. If the Engineer has not attended the tests, he shall accept the said readings as accurate or instruct the tests to be repeated at the Employer's cost to enable him to decide.

37.4 Rejection

If at the time and place agreed in accordance with Sub-Clause 37.3, the materials or Plant are not ready for inspection or testing or if, as result of the inspection or testing referred to in this Clause, the Engineer determines that the materials or Plant are defective or otherwise not in accordance with the Contract, he may reject the materials or Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Contractor shall then promptly make good the defect or ensure that rejected materials or Plant comply with the Contract. If the engineer so requests, the test of rejected materials or Plant shall be made or repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the tests shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer and may be deducted from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

37.5 Independent Inspection

The Engineer may delegate inspection and testing of materials or Plant to an independent inspector. Any such delegation shall be effected in accordance with Sub- Clause 2.4 and for this purpose such independent inspector shall be considered as an assistant of the Engineer. Notice of such appointment (not being less than 14 days) shall be given by the Engineer to the Contractor.

38.1 Examination of Work before Covering up

No part of the Work shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any such part of the Works which is about to be covered up or put out of view and to examine foundations before any part of the work is placed thereon. The Contractor shall give notice to the Engineer whenever any such part of the Works or foundations is or are ready or about to be ready for examination and the engineer shall unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such part of the Works or of examining such foundations.

38.2 Uncovering and Making Opening

The Contractor shall uncover any part of the Works or make opening in or through the same as the Engineer may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of Sub-Clause 38.1 and is found to be executed in accordance with the Contract, the Engineer shall, after due consultation with the Contractor, determine the amount of reinstating and making good the same, which shall be added to the Contract Price, and shall notify the Contractor accordingly. In any other case all costs shall be borne by the Contractor.

39.1 Removal of Improper Work, Materials or Plant

The Engineer shall have authority to issue instructions from time to time, for :

- (a) The removal from the Site, within such time or times as may be specified in the instruction, of any materials or Plant which, in the opinion of the Engineer, are not accordance with the Contract,
- (b) The substitution of proper and suitable materials or Plant, and
- (c) The removal and proper re-execution, notwithstanding any previous test thereof or interim payment therefor, of any work which, in respect of
 - (i) materials, Plant or workmanship, or
 - (ii) design by the Contractor or for which he is responsible, is not, in the opinion of the Engineer, in accordance with the Contract.

39.2 Default of Contractor in Compliance

In case of default on the Contractor in carrying out such instruction within the time specified therein or, if none, within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and all costs consequent thereon or incidental thereto shall, after due consultation with the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly.

SUSPENSION

40.1 Suspension of Work

The Contractor shall, on the instructions of the Engineer, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works or such part thereof so far as is necessary in the opinion of the Engineer. Unless such suspension is

- (a) otherwise provided for in the Contract, or
- (b) necessary by reason of some default of or breach of contract by the Contractor or for which he is responsible, or
- (c) necessary by reason of extra-ordinary climatic conditions on the Site, or
- (d) necessary for the proper execution of the Works or for the safety of the Works or any part thereof (save to the extent that such necessity arises from any act or default by the Engineer or the Employer or from any of the risks defined in Sub-Clause 20.4), Sub- Clause 40.2 shall apply.

40.2 Engineer's Determination following Suspension

Where, pursuant to Sub-Clause 40.1, this Sub- Clause applies the Engineer shall, after due consultation with the Contractor determine

- (a) any extension of time to which the Contractor is entitled under Clause 44.1 to 44.3, and
- (b) the amount, which shall be added to the Contract Price, in respect of the cost incurred by the Contractor by reason of such suspension.

And shall notify the Contractor accordingly.

40.3 Suspension lasting more than 84 Days

If the progress of the Works or any part thereof is suspended on the written instructions of the Engineer and if permission to resume work is not given by the Engineer within a period of 84 days from the date of suspension then,

unless such suspension is within paragraph (a), (b), (c) or (d) of Sub-Clause 40.1, the Contractor may give notice to the Engineer requesting permission, within 28 days from the receipt thereof, to proceed with the Works or that part thereof in regard to which progress is suspended. If, within the said time, such permission is not granted, the Contractor may, but is not bound to, elect to treat the suspension, where it affects part only of the Works, as an omission of such part under Clause 51.1 to 51.2 by giving a further notice to the Engineer to that effect, or, where it affects the whole of the Works, treat the suspension as an event of default by the Employer and terminate his employment under the Contract in accordance with the provisions of Sub-Clause 69.1, whereupon the provisions of Sub-Clause 69.2 and 69.3 shall apply.

COMMENCEMENT AND DELAYS

41.1 Commencement of Works

The Contractor shall commence the Works within 2 weeks from the date of receipt of notice by him to this effect from the Engineer to proceed with the works with due expedition and without delay.

42.1 Possession of Site and Access Thereto

Save insofar as the Contract may prescribe:

- (a) the extent of portions of the Site of which the Contractor is to be given possession from time to time, and
- (b) the order in which such portions shall be made available to the Contractor and subject to any requirement in the Contract as to the order in which the Works shall be executed,

The Employer will, with the Engineer's notice to commence the Works, give to the Contractor possession of

- (c) so much of the Site, and
- (d) such access as, in accordance with the Contract, is to be provided by the Employer,

as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the programme referred to in Clause 14.1 to 14.4, if any, and otherwise in accordance with such reasonable proposals as the Contractor shall, by notice to the Engineer make. The Employer will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with such programme or proposals, as the case may be.

- (e) All water including rain water which may accumulate on the site during the progress of the works or in trenches or excavations, shall be removed promptly from the site to the satisfaction of engineer and at the cost of contractor.

42.2 Wayleaves and Facilities

The Contractor shall bear all costs and charges for special or temporary wayleaves required by him in connection with access to Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.

43.1 Time for Completion

The whole of the Works and, if applicable, any Section required to be completed within a particular time as stated in the Appendix to Tender, shall be completed, in accordance with the provisions of Clause 48.1 to 48.4, within the time stated in the Appendix to Tender for completion of the whole of the Works or the Section (as the case may be), calculated from the Commencement Date, or such extended time as may be allowed under Clause 44.1 to 44.3.

44.1 Extension of Time for Completion

In the event of

- (a) the amount or nature of extra or additional work, or
- (b) any cause of delay referred to in these Conditions by reference to clause 44.1 to 44.3, or
- (c) exceptionally adverse climatic conditions, or
- (d) any delay, impediment or prevention by the Employer, or
- (e) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor or for which he is responsible,

being such as fairly to entitle the contractor to extension of time for completion of the works or any section or part thereof, the Engineer shall after due consultation with the contractor, and subject to clause 44.2 determine the amount of such extension and shall notify the contractor accordingly.

44.2 Contractor to Provide Notification and Detailed/ Particulars

The Engineer is not bound to make any determination under clause 44.1 unless the Contractor has

- (a) within 28 days after such event has arisen notified the Engineer, and
- (b) within 28 days, or such other reasonable time as may be agreed by the Engineer, after such notification submitted to the Engineer detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

44.3 Interim Determination of Extension

Provided also that where an event has continuing effect such that it is not practicable for the Contractor to submit detailed particulars within the period of 28 days referred to in Sub-Clause 44.2 (a), he shall nevertheless be entitled to an extension of time provided that he has submitted to the Engineer interim particulars at intervals of not more than 28 days and final particulars within 28 days of the end of the effects resulting from the event. On receipt of such interim particulars, the Engineer shall, without undue delay, make an interim determination of extension of time and on receipt of the final particulars the Engineer shall review the circumstances and shall determine an overall extension of time in regard to the event in consultation with the Contractor and shall notify the Contractor of the determination. No final review shall result in a decrease of any extension of time already determined by the Engineer.

45.1 Restriction on Working Hours

Subject to any provision to the contrary contained in the Contract, none of the Works shall save as hereinafter provided, be carried on during the night or on locally recognised days of rest without the consent of the Engineer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer. Provided that the provisions of this Clause shall not be applicable in the case of any work which it is customary to carry out by multiple shift.

46.1 Rate of Progress

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to enable the contractor to complete the execution of and passing the tests on completion of the Works or such section by the time for completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as complete the execution of and passing the tests on completion of the Works or such section by the time for completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognised days of rest, he shall be entitled to seek the consent of the Engineer to do so. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the employer in additional supervision costs, such costs shall, after due consultation with the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become to the Contractor and the Engineer shall notify the Contractor accordingly.

47.1 Liquidated Damages for Delay

If the Contractor fails to complete the execution of and passing the test on completion of the works or any section by the time for completion, in accordance with Clause 48.1 to 48.4, within the relevant time prescribed by Clause 43.1, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender (Appendix - B) as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender (Annexure - B). The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the contract.

47.2 Reduction of Liquidated Damages

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The Provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

48.1 Taking-Over Certificate

When the whole of the Works have been completed and all the equipments and systems have satisfactorily passed the Tests on Completion and the equipments and systems have been satisfactorily Validated, the Contractor shall give a notice of Completion to the Employer through the Engineer. Such notice shall be deemed to be a request by the Contractor to issue a Taking-Over Certificate in respect of the Works. The Engineer shall, within 21 days of the date of delivery of such notice, either issue to the Contractor, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking-Over Certificate within 21 days of completion, to the satisfaction of the Engineer, of the Works so specified and remedying any defects so notified.

48.2 Taking-Over of Sections or Parts

Similarly, in accordance with the procedure set out in Sub-Clause 48.1, the Contractor may request and the Engineer shall issue a Taking-Over Certificate in respect of :

- (a) any Section in respect of which a separate Time for Completion is provided in the Appendix to Tender, or
- (b) any part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or
- (c) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

48.3 Completion of Parts

If any part of the Permanent Works has been satisfactorily completed and has satisfactorily passed any Tests on Completion prescribed by the Contract, and such part of the work is intended to be used by the Employer, the engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and , upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the permanent Works during the Defects Liability Period.

48.4 Surfaces Requiring Reinstatement

Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking- Over certificate shall expressly so state.

If the Contractor is prevented from carrying out the Tests on Completion by a cause for which the employer or the Engineer or other contractors employed by the Employer are responsible, the employer shall subject to clause 7.2 (b) be deemed to have taken over the Works on the date when the Tests on Completion would have been completed but for such prevention. The Engineer shall issue a Taking-Over Certificate accordingly. Provided always that the Works shall not be deemed to have been taken over if they are not completed in accordance with the Contract.

If the Works are taken over under this Sub-Clause the Contractor shall nevertheless carry out the Tests on Completion during the Defects Liability Period. The Engineer shall require the Tests to be carried out by giving 14 days notice.

DEFECTS LIABILITY

49.1 Defects Liability Period

In these Conditions the expression "Defects Liability Period" shall mean the defects liability period named in the Appendix to Tender, calculated from:

- (a) the date of completion of the Works certified by the Engineer in accordance with Clause 48.1 to 48.4 or clause 63.1; or
- (b) in the event of more than one certificate having been issued by the Engineer under Clause 48.1 to 48.4, the respective dates so certified.

49.2 Completion of Outstanding Work and Remedying Defects

To the intent that the Works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall:

- (a) complete the work, if any, outstanding on the date stated in Taking-Over Certificate as soon as practicable after such date and
- (b) execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.

49.3 Cost of Remedying Defects

All work referred to in Sub-Clause 49.2 (b) shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the engineer, due to:

- (a) the use of materials, Plant or workmanship not in accordance with the Contract, or
- (b) where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or
- (c) the 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.

If, in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an addition to the Contract Price in accordance with Clause 52.1 to 52.4 and shall notify the Contractor accordingly, with a copy to the Consultant.

49.4 Contractor's Failure to Carry out Instructions

In case of default on the part of the Contractor in carrying out such instruction within a reasonable time, the consultant shall be entitled to employ and pay other persons to carry out the same and if such work, in the opinion of the

Engineer, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly.

The Provisions of this Clause shall apply to all replacements or renewals of Plant carried out by the Contractor to remedy defects and damages as if the replacements and renewals had been taken over on the date they were completed.

The Defects Liability Period for the Works shall be extended by a period equal to the period during which the Works cannot be used by reason of a defect or damage. If only part of the Works is affected the Defects Liability Period shall be extended only for that part. In neither case shall the Defects Liability Period extend beyond 2 years from the date of taking over.

When the progress in respect of Plant has been suspended under clause 40.1 to 40.3, the Contractor's obligations under this Clause shall not apply to any defects occurring more than one year after the Time for Completion established on the date of the Letter of Acceptance.

50.1 Contractor to Search

If any defects, shrinkage or other fault in the Works appears at any time prior to the end of the Defects Liability Period, the Engineer may instruct the Contractor, to search under the directions of the Engineer for the cause thereof. Unless such defect, shrinkage or other fault is one for which the Contractor is liable under the Contract, the Engineer shall, after due consultation with the Contractor, determine the amount in respect of the costs of such search incurred by the Contractor, which shall be added to the Contract Price and shall notify the Contractor accordingly. If such defect, shrinkage or other fault is one for which the Contractor is liable, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall in such case remedy such defect, shrinkage or other fault at his own cost in accordance with the provisions of Clause 49.1 to 49.4.

ALTERATIONS, ADDITIONS AND OMISSIONS

51.1 Variations

The Engineer shall make any variation of the form, or the Scope Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

- (a) change the character or quality or kind of any such work.
- (b) change the levels, lines, position and dimensions of any part of the Works,

- (c) execute additional work of any kind necessary for the completion of the Works
- (d) change any specified sequence or timing of construction of any part of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 52.1 to 52.4. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the contractor.

51.2 Instructions for Variations

The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities as per approved drawings issued for construction.

52.1 Valuation of Variations

All variations referred to in Clause 51.1 to 51.2 and any additions to the Contract Price which are required to be determined in accordance with Clause 52.1 to 52.4 (for the purposes of this Clause referred to as "varied works"), shall be valued at the rates and prices set out in the Contract if, in the opinion of the Engineer, the same shall be applicable. If the contract does not contain any rates or prices applicable to the varied work, the rates and prices in the Contract shall be used as the basis for valuation so far as may be reasonable, failing which, after due consultation by the Engineer with the Contractor, suitable rates or prices shall be agreed upon between the Engineer and the Contractor. In the event of disagreement the Engineer shall fix such rates or prices as are, in his opinion, appropriate based on CPWD norms and shall notify the Contractor accordingly. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.1 to 60.14.

52.2 Power of Engineer to Fix Rates

Provided that if the nature or amount of any varied work relative to the nature or amount of the whole of the Works or to any part thereof, is such that, in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such varied work, rendered inappropriate or inapplicable, then after due consultation by the Engineer with the Contractor, a suitable rate or price shall be agreed upon between the Engineer and the Contractor. In the event of disagreement the Engineer shall fix such other rate or price as is, in his opinion, appropriate and shall notify the Contractor accordingly. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.1 to 60.14.

The rates of such items shall be worked out on the basis of market rate analysis. In the event of disagreement between the Engineer and the Contractor on these rates, the Engineer shall fix such rates and prices as are in his opinion appropriate and shall notify the Contractor accordingly. Provided also that no varied work instructed to be done by the Engineer pursuant to Clause 51.1 to 51.2 shall be valued under Sub-Clause 52.1, or under this Sub-Clause unless, within 14 days of the date of such instruction and, other than in the case of omitted work, before the commencement of the varied work, notice shall have been given either:

- (a) by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or
- (b) by the Engineer to the Contractor of his intention to vary a rate or price.

52.3 Deleted

52.4 Daywork

The Engineer may, if in his opinion it is necessary or desirable, issue an instruction that any varied work shall be executed on a day work basis. The Contractor shall then be paid for such varied work under the terms set out in day work schedule which shall be the minimum wages applicable in **Hissar (Haryana)** to the category of workers employed as on the day the work is carried out.

The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to prove the amounts paid and, before ordering materials, shall submit to the Engineer quotations for the same for his approval.

In respect of such of the Works executed on a day work basis, the Contractor shall, during the continuance of such work, deliver each day to the Engineer an exact list in duplicate of the names, occupation and time of all workmen employed on such work and a statement, also in duplicate, showing the description and quantity of all materials and Contractor's Equipment used thereon or thereof other than Contractor's Equipment which is included in the percentage addition in accordance with such day work schedule. One copy of each list and statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor.

At the end of each month the Contractor shall deliver to the Engineer a priced statement of the labour, materials and Contractor's Equipment, except as aforesaid, used and the Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer considers that for any reason the sending of such lists or statements by the Contractor, in accordance with the foregoing provision, was impracticable he shall nevertheless be entitled to authorise payment for such work, either as day work, or being satisfied as to the time employed and the labour, materials and Contractor's Equipment used on such work, or at such value thereof as shall, in his opinion, be fair and reasonable.

PROCEDURE FOR CLAIMS

53.1 Notice of Claims

Notwithstanding any other provision of the Contract, if the Contractor intends to claim any additional payment pursuant to any clause of these Conditions or otherwise, he shall give notice of his intention to the Engineer, within 28 days after the event giving rise to the claim has first arisen.

53.2 Contemporary Records

Upon the happening of the event referred to in Sub-Clause 53.1, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Employer's liability, the Engineer shall, on receipt of a notice under Sub-Clause 53.1, inspect such contemporary records and may instruct the Contractor to keep any further contemporary records as are reasonable and may be material to the claim of which notice has been given. The Contractor shall permit the Engineer to inspect all records kept pursuant to this Sub-Clause and shall supply him with copies thereof as and when the Engineer so instructs.

53.3 Substantiation of Claims

Within 28 days, or such other reasonable time as may be agreed by the Engineer, of giving notice under Sub-Clause 53.1, the Contractor shall send to the Engineer an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Engineer may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Engineer, the Contractor shall send a final account within 28 days of the end of the effect resulting from the event. The Contractor shall, if required by the Engineer to do so, copy to the Employer all accounts sent to the Engineer pursuant to this Sub- Clause.

53.4 Failure to Comply

If the Contractor fails to comply with any of the provisions of this Clause in respect of any claim which he seeks to make, his entitlement to payment in respect thereof shall not exceed such amount as the Engineer or any arbitrator or arbitrators appointed pursuant to Sub-Clause 67.3 assessing the claim considers to be verified by contemporary records (whether or not such records were brought to the Engineer's notice as required under Sub-Clause 53.2 and 53.3).

53.5 Payment of Claims

The Contractor shall be entitled to have included in any interim payment certified by the Engineer pursuant to Clause 60.1 to 60.14 such amount in respect of any claim as the Engineer, after due consultation with the Contractor, may consider due to the Contractor provided that the Contractor

has supplied sufficient particulars to enable the Engineer to determine the amount due. If such particulars are insufficient particulars to substantiate the whole of the claim, the Contractor shall be entitled to payment in respect of such part of the claim as such particulars may substantiate to the satisfaction of the Engineer. The Engineer shall notify the Contractor for any determination made under this Sub-Clause.

CONTRACTOR'S EQUIPMENT, TEMPORARY WORKS AND MATERIALS

54.1 Contractor's Equipment, Temporary Works and Materials, Exclusive use for the Works

All Contractor's Equipment Temporary Works and materials 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 of the Engineer. provided that consent shall not be required for vehicles engaged in transporting any staff labour, contractor's equipment, temporary works, plant or materials to or from the site.

54.2 Employer Not Liable for Damage

The Employer shall not at any time be liable, save as mentioned in Clauses 20.1 to 20.4 and 65.1 to 65.8, for the loss of or damage to any of the said Contractor's Equipment, Temporary Works or materials.

54.3 Customs Clearance

The Employer will use his best endeavours in assisting the Contractor, where required, in obtaining clearance through the Customs of Contractor's Equipment, materials and other things required for the Works. However the responsibility for getting clearance from customs shall rest with the contractor.

54.4 Re-export of Contractor's Equipment

In respect of any Contractor's Equipment which the Contractor has imported for the purposes of the Works, the Employer will use his best endeavours to assist the Contractor, where required, in procuring any necessary Government consent to the re-export of such Contractor's Equipment by the Contractor upon the removal thereof pursuant to the terms of the Contract.

54.5 Conditions of Hire Contractor's Equipment

With a view to securing, in the event of termination under Clause 63.1 to 63.4, the continued availability, for the purpose of executing the Works, of any hired Contractor's Equipment, the Contractor shall not bring on to the Site any hired Contractor's Equipment unless there is an agreement for the hire thereof (which agreement shall be deemed not to include an agreement for hire purchase) which contains a provision that the owner thereof will, on request in writing made by the Employer within 7 days after the date on which any termination has become effective, and on the Employer undertaking to pay all

hire charges in respect thereof from such date, hire such Contractor's Equipment to the Employer on the same terms in all respects as the same was hired to the Contractor save that the Employer shall be entitled to permit the use thereof by any other contractor employed by him for the purpose of execution and completion the Works and remedying any defects therein, under the terms of the said Clause 63.1 to 63.4.

54.6 Costs for the Purpose of Clause - 63.1 to 63.4

In the event of the employer entering into any agreement for the hire of contractor's equipment pursuant to Sub-Clause 54.5, all sums properly paid by the employer under the provisions of any such agreement and all costs incurred by him (Including stamps duties) in entering into such agreement shall be deemed, for the purpose of clause 63.1 to 63.4, to be part of the cost of executing and completing the works and the remedying of any defects therein.

54.7 Corporation of Clause in Sub-contracts

The contractor shall, where entering into any subcontract for execution of any part of the works, incorporate in such subcontract (by reference or other wise) the provisions of this Clause in relation to Contractor's Equipment, Temporary Works or Materials brought on to the Site by the Subcontractor.

54.8 Approval of Material not Implied

The operation of this clause shall not be deemed to imply any approval by the engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any materials at any time by the Engineer.

MEASUREMENT

55.1 Quantities

The quantities set out in the Bill of Quantities, if any, are the estimated quantities for the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfilment of his obligations under the Contract. **The work shall be required to be executed on 'turnkey basis' as per the scope of works. The offered rates for all the items or lumpsum items shall be firm and fixed on "turnkey basis" and binding on the contractor irrespective of any variation of quantities stated in the contract as a whole.**

56.1 Works to be Measured

The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value of the works in accordance with the Contract and the Contractor shall be paid that value in accordance with clause 60.1 to 60.14. The Engineer shall, when he requires any part of the Works to be measured, give reasonable notice to the Contractor's agent, who shall :

- (a) forthwith attend or send a qualified representative to assist the Engineer in making such measurement, and
- (b) supply all particulars required by the Engineer

Should the Contractor not attend, or neglect or omit to send such representative, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of such part of the Works. For the purpose of measuring such Permanent Works as are to be measured by records and drawings, the Engineer shall prepare records and drawings as the work proceeds and the Contractor, as and when called upon to do so in writing, shall, within 14 days, attend to examine and agree such records and drawings with the Engineer and shall sign the same when so agreed. If the Contractor does not attend to examine such records and drawings and the Contractor does not agree such records and drawings, they shall be taken to be Correct. If, after examination of such records and drawings, the Contractor does not agree the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor, within 14 days of such examination, lodges with the Engineer notice of the respects in which such records and drawings are claimed by him to be incorrect. On receipt of such notice, the Engineer shall review the records and drawings and either confirm or vary them.

57.1 Method of Measurement

The Works shall be measured net, notwithstanding any general or local custom, except where otherwise provided for in the Contract.

57.2 Breakdown of Lumpsum Items

For the purposes of statements submitted in accordance with Sub-Clause 60.1, the Contractor shall submit to the Engineer, a breakdown for each of the lump sum items contained in the Tender. Such breakdowns shall subject to the approval of the Engineer.

PROVISIONAL SUMS

58.1 Definition of "Provisional Sum"

"Provisional Sums" means a sum included in the Contract and so designated in the Bill of Quantities for the execution of any part of the Works or for the supply of goods, materials, Plant or services, or for contingencies, which sum may be used, in whole or in part, or not at all, on the instruction of the Engineer. The Contractor shall be entitled to only such amounts in respect of the work, supply or contingencies to which such Provisional Sums relate as the Engineer shall determine in accordance with the Clause. The Engineer shall notify the Contractor of any determination made under this Sub-clause.

58.2 Use of Provisional Sums

In respect of every Provisional Sum the Engineer shall have authority to issue instructions for the execution of works or for the supply of goods, materials, Plant or services by :

- (a) the Contractor, in which case the Contractor shall be entitled to an amount equal to the value thereof determined in accordance with Clause 52.1 to 52.4.
- (b) a nominated Subcontractor, as hereinafter defined, in which case the sum to be paid to the Contractor therefore shall be determined and paid in accordance with Sub-Clause 59.4

58.3 Production of Vouchers

The Contractor shall produce to the Engineer all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums, except where work is valued in accordance with rates or prices set out in the Tender.

NOMINATED SUBCONTRACTORS

59.1 Definition of "Nominated Subcontractors"

All specialists, merchants, tradesmen and others executing any work or supplying any goods, materials, Plant or services for which Provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Engineer, and all persons to whom by virtue of the provisions of the Contract the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be subcontractors to the Contractor and are referred to in the Contract as "nominated Subcontractors".

59.2 Nominated Subcontractors; Objection to Nomination

The Contractor shall not be required by the Employer or the Engineer, or be deemed to be under any obligation, to employ any nominated Subcontractor against whom the Contractor may raise reasonable objection, or who declines to enter into a subcontract with the Contractor containing provision:

- (a) that in respect of work, goods, materials, Plant or services the subject of the subcontract, the nominated Subcontractor will undertake towards the Contractor such obligations and liabilities as will enable the Contractor to discharge his own obligations and liabilities towards the Employer under the terms of the Contract and will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities; and
- (b) that the nominated Subcontractor will save harmless and indemnify the Contractor from and against any negligence by the nominated Subcontractor, his agents, workmen and servants and from and against

any misuse by him or them of any Temporary Works provided by the Contractor for the Purpose of the Contract and from all claims as aforesaid; and

- (c) approved by the Engineer.

59.3 Design Requirements to be Expressly Stated

If in connection with any Provisional Sums the services to be provided include any matter of design or specification of any part of the Permanent Works or of any Plant to be incorporated therein, such requirement shall be expressly stated in the Contract and shall be included in any nominated Subcontract. The nominated Subcontract shall specify that the nominated Subcontractor providing such services will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities.

59.4 Payments to Nominated Subcontractors

For all work executed or goods, material, Plant or services supplied by any nominated Subcontractor, the contractor shall be entitled to :

- (a) the actual price paid or due to be paid by the Contractor, on the instructions of the Engineer, and in accordance with the Subcontract;
- (b) in respect of labour supplied by the Contractor, the sum if any, entered in the Bill of Quantities or, if instructed by the Engineer pursuant to paragraph (a) of Sub-clause 58.2, as may be determined in accordance with Clause 52.1 to 52.4;
- (c) in respect of all other charges and profit, a sum being a percentage rate of the actual price paid or due to be paid calculated, where provisions has been made in the Bill of Qualities for a rate to be set against the relevant Provisional Sum, at the rate inserted by the Contractor against that item or, where no such provision has been made, at the rate inserted by the Contractor in the Appendix to Tender and repeated where provision for such is made in a special item provided in the Bill of Quantities for such purpose.

59.5 Certificates of Payments to Nominated Subcontractors

Before issuing, under Clause 60.1 to 60.14, any certificate, which includes any payment in respect of work done or goods, materials, Plants or services supplied by any nominated Subcontractor, the Engineer shall be entitled to demand from the Contractor reasonable proof that all payments, less retentions, included in previous certificates in respect of the work or goods, materials, Plant or services of such nominated Subcontractor have been paid or discharged by the Contractor. If the Contractor fails to supply such proof then, unless the Contractor :

- (a) satisfies the Engineer in writing that he has reasonable cause for withholding or refusing to make such payments and

- (b) produces to the Engineer reasonable proof that he has so informed such nominated Subcontractor in writing,

the Employer shall be entitled to pay to such nominated Subcontractor direct, upon the certificate of the Engineer, all payments, less retentions, provided for in the nominated Subcontractor and to deduct by way of set-off the amount so paid by the Employer from any sums due or to become due from the Employer to the Contractor.

Provided that, where the Engineer has certified and the Employer has paid direct as aforesaid, the Engineer shall, in issuing any further certificate in favour of the Contractor, deduct from the amount so paid, direct as aforesaid, but shall not withhold or delay the issue of the certificate itself when due to be issued under the terms of the Contract.

CERTIFICATES AND PAYMENTS

60.1 Monthly Statements

The Contractor shall submit a statement in 3 copies to the Engineer by 7th day of each month for the work executed up to the end of previous month in a tabulated form approved by the Engineer, showing the amounts to which the Contractor considers himself to be entitled. the statement shall include the following items, as applicable, which shall be taken into account in the sequence listed:

- (a) The estimated contract value of the Temporary and Permanent Works executed up to the end of the month in question, at base unit rates and prices.
- (b) The actual value certified for payment for the Temporary and Permanent Works executed up to the end of the previous month, at base unit rates and prices.
- (c) The estimated contract value at base unit rates and prices of the Temporary and Permanent Works for the month in question, obtained by deducting (b) from (a);
- (d) The value of any variations executed up to the end of the month in question, less the amount certified in the previous Interim Payment Certificate, pursuant to Clause 52.1 to 52.4;
- (e) Amounts approved in respect of Daywork executed up to the end of the month in question, less the amount for Daywork certified in the previous Interim Payment Certificate determined from the Day work Schedule of the Bill of Quantities.
- (f) Amounts reflecting changes in cost and legislation, pursuant to Clause 70.1 to 70.3.
- (g) Any credit or debit for the month in question in respect of materials and Plant for the Permanent Works, under the conditions set forth in Sub-Clause 60.3;
- (h) Any amount to be withheld under the retention provisions of Sub-Clause 60.5, determined by applying the percentage set forth in

Sub-Clause 60.5 to the amounts due under paragraphs 60.1(c), (e), (f) and (g);

- (i) Any amounts to be deducted as repayment of the Advance under the provisions of sub-Clause 60.7; and
- (j) Any other sum, to which the Contractor may be entitled under the contract.
- (k) 75% of the value of materials delivered to the site for permanent works on signing of the Indenture for secured advance format of which is enclosed at Annexure - A.
- (l) The amount to be deducted towards the advance income tax and the advance works contract tax as per the statutory requirements in this regard.

60.2 Monthly Payments

The said statement shall be approved / amended by the Engineer in such a way that, in his opinion, it reflects the amounts due to the Contractor in accordance with the Contract, after deduction, other than pursuant to Clause 47.1 to 47.2, of any sums which may have become due and payable by the Contractor to the Employer. In cases where there is a difference of opinion as to the value of any item, the Engineer's view shall prevail. Within the 7th day of the month following the receipt of the monthly statement referred to in Sub-Clause 60.1, the Engineer shall determine the amounts due to the Contractor and shall issue to the Contractor a certificate herein called "Interim Payment Certificate", certifying the amounts due to the contractor.

Notwithstanding the terms of this Clause or any other Clause of the Contract, no amount will be certified by the Engineer for payment until the performance security has been provided by the Contractor and approved by the consultant.

60.3 Materials and Plant for the Permanent Works

With respect to materials and Plant brought by the Contractor to the Site for incorporation in the Permanent Works, the Contractor shall (i) receive a credit in the month in which these materials and Plant are brought to the site and (ii) be charged a debit in the month in which they are incorporated in the Permanent Works, both such credit and debit to be determined by the engineer in accordance with the following provisions:

- (a) no credit shall be given unless the following conditions shall have been met to the Engineer's satisfaction:
 - i) the materials and Plant are in accordance with specifications for the Works;
 - ii) the materials and Plant have been delivered to the Site and are properly stored and protected against loss, damage or deterioration;
 - iii) the Contractor's records of the requirements, order, receipts and use of materials and Plant are kept in a form approved by the

engineer, and such records are available for inspection by the Engineer.

- iv) the Contractor has submitted a statement of his cost of acquiring and delivering the materials and Plant to the site, together with such documents as may be required for the purpose of evidencing such cost; and
- (b) the amount to be credited to the Contractor shall be equivalent of 75 percent of the Contractor's reasonable cost of the materials and Plant delivered to the Site, as determined by the Engineer after review of the documents listed in paragraph (a) (iv) above, as determined by the Engineer;
- (c) the amount to be debited to the Contractor for any materials and Plant incorporated into the Permanent Works shall be equivalent to the credit previously granted to the contractor for such materials and Plant pursuant to Sub-Clause(b) above, as determined by the Engineer.

60.4 Place of Payments

Payments to the Contractor shall be made by the consultant in Indian Rupees into a bank account or accounts nominated by the Contractor or by Account Payee Cheque/Demand Draft.

60.5 Retention Money

A retention amounting to 10 (Ten) percent of the amounts, determined in accordance with the procedure set out in Sub-Clause 60.1 (h) shall be made by the Engineer in the first and following Interim Payment Certificates, until the amount so retained reaches a limit of retention money (5% of Contract Price) as stated in the Appendix to Tender (Annexure - B).

60.6 Payment of Retention Money

Upon complete deduction of retention money (5% of contract value) from the running bills, 3% of the retention money amount shall be released to the contractor on submission of Bank Guarantee issued from Nationalised/Scheduled Bank and in the format acceptable to the Engineer and valid till the completion of defect liability period. The balance amount of retention money i.e. 2%, along with the above Bank Guarantee shall be released to the contractor upon successful completion of Defect Liability Period by the contractor.

60.7 Advance Payment

- (a) The consultant on behalf of the employer will make an advance payment at a simple interest @ 10% (ten percent) per Annum on reducing balance basis to the Contractor exclusively for the costs of mobilization in respect of the Works in an amount equivalent to 10 (Ten) percent of the Contract Price named in the Letter of Award. Payment of such advance amount will be due under separate certification by the Engineer after (i) execution of the Form of Agreement by the parties hereto; (ii) provision by the Contractor of the performance security in accordance with sub-Clause 10.1; and (iii)

provision by the Contractor of an unconditional bank guarantee in a form and by a nationalised/scheduled bank acceptable to the consultant in amounts equal to the sum of advance payment and estimated Interest thereof. Such bank guarantee shall be valid for an initial period of **six months** and shall remain valid and effective until the advance payment has been repaid pursuant paragraph (b) below, but the amount thereof shall be progressively reduced by the amount repaid by the Contractor as indicated in Interim Payment Certificates issued in accordance with this Clause.

- (b) The mobilization advance payment along with Interest shall be repaid through percentage deductions from the interim payments certified by the Engineer in accordance with this Clause. Deduction for Interest accrued during the period shall commence from the first Interim Payment Certificate. However deductions for Principal amount of mobilisation advance and balance Interest shall commence in the next Interim Payment Certificate following that in which the total of all interim payments certified to the Contractor has reached **20(Twenty)** percent of the Contract Price less Provisional sums, and shall be made at the rate of 18 (Eighteen) percent of the amount of all Interim Payment Certificates in proportionate amounts of advance payment until such time as the advance payment has been fully repaid, always provided that the advance payment shall be completely repaid prior to the time when 80 percent of the contract Price has been certified for payment.

60.8 Time of Payment

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 47.1 to 47.2, be paid by the Employer to the Contractor within 15 days after the Contractor's monthly statement has been submitted to the Engineer for certification or, in the case of the Final Certificate pursuant to Sub-Clause 60.13, within 30 days after the agreed Final Statement and written discharge have been submitted to the Engineer for certification.

60.9 Correction of Certificates

The Engineer may by any Interim Payment Certificate make any correction or modification in any previous Interim payment Certificate which has been issued by him, and shall have authority, if any work is not being carried out to his satisfaction, to omit or reduce the value of such work in any Interim Payment Certificate.

60.10 Statement of Completion

Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the Works, the Contractor shall submit to the Engineer a Statement of Completion with supporting documents showing in detail, in the form approved by the Engineer.

- (a) the final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate;
- (b) any further sums which the Contractor considers to be due; and

- (c) an estimate of amounts which the Contractor considers will become due to him under the Contract.

Estimated amounts shall be shown separately in such Statement at Completion. The Engineer shall certify payment in accordance with Sub-Clause 60.2 as if the statement of completion were a statement submitted by the contractor under clause 60.1.

60.11 Final Statement

Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for consideration a draft final statement with supporting documents showing in detail, in the form approved by the Engineer.

- (a) the value of all work done in accordance with the Contract; and
- (b) any further sums which the Contractor considers to be due to him under the Contract.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed (for the purposes of these Conditions referred to as the "Final Statement").

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the engineer shall issue an Interim Payment Certificate for those parts of the draft final statement which are not in dispute. The dispute shall then be settled in accordance with Clause 67.1 to 67.4. The Final Statement shall be agreed upon settlement of the dispute.

60.12 Discharge

Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the contract. Provided that such discharge shall become effective only after payment due under the Final Certificate issued pursuant to Sub-Clause 60.13 has been made and the performance security referred to in Sub- Clause 10.1 has been returned to the Contractor.

60.13 Final Certificate

Within 28 days after receipt of the Final Statement, and the written discharge, the Engineer shall issue to the employer (with a copy to the Contractor) a Final Certificate stating:

- (a) the amount which, in the opinion of the Engineer, is finally due under the Contract, and

- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled under the Contract, other than Clause 47.1 to 47.2, the balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer as the case may be.

60.14 Cessation of Employer's Liability

The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or execution of the Works, unless the Contractor shall have included a claim in respect thereof in his Final Statement and (except in respect of matters of things arising after the issue of the Taking-Over Certificate in respect of the whole of the Works) in the Statement at Completion referred to in Sub- Clause 60.10.

61.1 Defects Liability Certificate

The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different sections or part of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clause 49.1 to 49.4 and 50.1, have been completed to the satisfaction of the Engineer. Provided that the issue of the Defects Liability Certificate shall not be condition precedent to payment to the Contractor of the second portion of the Retention Money in accordance with the conditions set out in Sub-Clause 60.3.

62.1 Unfulfilled Obligations

Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfilment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time such Defects Liability Certificate is issued and, for the purpose of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties to the Contract.

REMEDIES

63.1 Default of Contractor

If the Contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or becomes insolvent, or makes an arrangement with, or assignment in favour of, his creditors or agrees to carry out the Contract under a committee of inspection of his creditors, or if a receiver, administrator, trustee or liquidator is appointed over any substantial part of his assets, or if, under any law or regulation relating to reorganisation, arrangement or readjustment of debts proceedings are, commenced against the Contractor or

resolution passed in connection with dissolution or liquidation or, if any, step are taken to enforce any security interest over a substantial part of the assets of the Contractor, or if, any act is done or event occurs with respect to the Contractor or his assets which under any applicable law has a substantially similar effect to any of the foregoing acts or events, or if the Contractor has contravened Sub-Clause 3.1, or has an execution levied on his goods, or if the Engineer certifies to the Employer, with a copy to the Contractor, that, in his opinion the contractor

- (a) has repudiated the Contract, or
- (b) without reasonable excuse has failed
 - (i) to commence the work in accordance with Sub-Clause 41.1, or
 - (ii) to proceed with the Works, or any section thereof, within 28 days after receiving notice to pursuant to Sub-Clause 46.1, or
- (c) has failed to comply with a notice issued pursuant to Sub-Clause 37.4, or an instruction issued pursuant to Sub-Clause 39.1 within 28 days after receiving it, or
- (d) despite previous warning from the Engineer, in writing, is otherwise persistently or flagrantly neglecting to comply with any of the obligation under the Contract, or
- (e) has contravened Sub-clause 4.1 :

then for the avoidance of doubt the contractor shall be in default of its obligations under this contract and furthermore the Employer may, after giving fourteen days' notice to the Contractor, enter upon the Site and expel the Contractor there from without thereby voiding the Contract, or releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and powers conferred on the employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor to complete the Works. The Engineer shall certify such completion so as to give effect to clauses 49.1(a) and 63.3. The Employer or such other contractor may use for such completion so much of the Contractor's Equipment, Plant, Temporary Works and materials which have been deemed to be reserved exclusively for the execution of the Works, under provisions of the Contract, as he or they may think proper, and the Employer may, at any time, sell any of the said Contractor's Equipment, Temporary Works and unused Plant and materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the Contractor under the Contract.

63.2 Valuation at Date of Expulsion

The Engineer, as soon as may be practicable after any such entry and expulsion by the Employer, shall fix and determine ex parte, or by or after reference to the parties or after such investigation or enquiries as he may think fit to make or institute, and shall certify :

- (a) what amount (if any) had, at the time of such entry and expulsion, been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract, and
- (b) the value of any of the said unused or partially used materials, any Contractor's Equipment and any Temporary Works.

63.3 Payments after Expulsion

If the Employer shall enter upon the site and expel the Contractor therefrom under Clause 63.1, he shall not be liable to pay to the Contractor any further amount (including damages) in respect of the Contract until the expiration of the Defects Liability Period and thereafter until the costs of execution completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Engineer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum (if any) as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

63.4 Assignment of Benefit of Agreement

Unless prohibited by law, the Contractor shall, if so instructed by the Engineer within 14 days of such entry and expulsion referred to in Sub-Clause 63.1, assign to the Employer the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purpose of the Contract, which the Contractor may have entered into.

64.1 Urgent Remedial Works

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 the Defects Liability Period, any remedial or other work is, in the opinion of the Engineer, urgently necessary for the safety or progress of the Works and the Contractor is unable or unwilling at once to do such work, the Employer shall be entitled to employ and pay other person to carry out such work as the Engineer may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the contract, then all costs consequent thereon or incidental thereto shall after due consultation with the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Engineer, and may be deducted by the employer from any

monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly. Provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof.

SPECIAL RISKS

65.1 No Liability for Special Risks

The Contractor shall be under no liability whatsoever in consequence of any of the special risks referred to in Sub-Clause 65.2 whether by way of indemnity or otherwise, for or in respect of :

- (a) destruction of or damage to the "Works", save to work condemned under the provisions of Clause 39.1 to 39.2 prior to the occurrence of any of the said special risks, or
- (b) destruction of or damage to property, whether of the employer or third parties, or
- (c) injury or loss of life.

65.2 Special Risks

The special risks are :

- (a) the risks defined under paragraphs (a) sub-para (i), (ii), (iii) and (iv) of Sub-Clause 20.4.

65.3 Damage to Works by Special Risks

If the Works or any materials or Plant on or near or in transit to the Site, or any of the Contractor's Equipment, sustain destruction or damage by reason of any of the said special risks, the Contractor shall be entitled to payment in accordance with the Contract for any Permanent Works duly executed and for any materials or Plant so destroyed or damaged and, so far as may be required by the Engineer or as may be necessary for the completion of the Works, to payment for;

- (a) rectifying any such destruction or damage to the Works, and
- (b) replacing or rectifying such materials or contractor's Equipment and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52.1 to 52.4 (which shall be the case of the cost of replacement of Contractor's Equipment include the fair market value thereof as determined by the Engineer) and shall notify the Contractor accordingly, with a copy to the Employer.

65.4 Projectile, Missile

Destruction, damage, injury or loss of life caused by the explosion or impact, whenever and wherever occurring, or any mine, bomb, shell, grenade, or other projectile, missile, munition, or explosive of war, shall be deemed to be a consequence of the said special risks.

65.5 Increased Costs arising from Special Risks

Save to the extent that the Contractor is entitled to payment under any other provision of the Contract, the Employer shall repay to the Contractor any costs of the execution of the Works (other than such as may be attributable to the cost of reconstructing work condemned under the provisions of Clause 39.1 to 39.2 prior to the occurrence of any special risk) which are howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall, as soon as any such cost comes to his knowledge, forthwith notify the Engineer thereof. The Engineer shall, after due consultation with the Contractor, determine the amount of the contractor's costs in respect thereof which shall be added to the Contract Price and shall notify the Contractor accordingly.

65.6 Outbreak of War

If, during the currency of the Contract, there is an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the Works, the Contractor shall, unless and until the Contract is terminated under the provisions of this Clause, continue to use his best endeavours to complete the execution of the Works. Provided that the employer shall be entitled, at any time after such outbreak of war, to terminate the Contract by giving notice to the Contractor and, upon such notice being given, the Contract shall, except as to the rights of the parties under this Clause and to the operation of Clause 67.1 to 67.4, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof

65.7 Removal of Contractor's Equipment on Termination

If the Contract is terminated under the provision of Sub-Clause 65.6, the Contractor shall with all reasonable dispatch, remove from the Site all Contractor's Equipment and shall give similar facilities to his Subcontractors to do so.

65.8 Payment if Contract Terminated

If the Contract is terminated as aforesaid, the Contractor shall be paid by the Employer insofar as such amounts or items have not already been covered by payments account made to the Contractor, for all work executed prior to the

date of termination at the rates and prices provided in the contract and in addition:

- a) The amounts payable in respect of any preliminary items referred to in the Bill of Quantities, so far as the Work or service comprised therein has been partially carried out or performed.
- b) The cost of materials, plant or goods reasonably ordered for the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such materials, Plant or goods becoming the property of the Employer upon such payments being made by him.
- c) A sum being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works insofar as such expenditure has not been covered by any other payments referred to in this Sub-Clause.
- d) Any additional sum payable under the provisions of Sub-Clauses 65.3 and 65.5.
- e) Such proportion of the cost as may be reasonable, taking into account payments made or to be made, for work executed, or removal of contractor's equipment under Sub- Clause 65.7 and, if required by the Contractor, return thereof to the Contract's main plant yard in his country of registration or to other destination, at no greater cost.
- f) The reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided that against any payment due from the Employer under this Sub-Clause, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Contractor's Equipment, materials and Plant and any other sums which, at the date of termination, were recoverable by the employer from the Contractor under the terms of the Contract. Any sums payable under this Sub- Clause shall, after due consultation with the Employer and the Contractor, be determined by the Engineer who shall notify the Contractor accordingly.

RELEASE FROM PERFORMANCE

66.1 Payment in Event of Release from Performance

If any circumstance outside the control of both parties arises after the issue of the Letter of Acceptance which renders it impossible or unlawful for either party to fulfil his contractual obligations, or under the law governing the Contract the parties are released from further performance, then the sum payable by the employer to the Contractor in respect of the work executed shall be the same as that which would have been payable under Clause 65.8 if the Contract had been terminated under the provisions of Clause 65.6.

SETTLEMENT OF DISPUTES

67.1 Engineer's Decision

If a dispute of any kind whatsoever arise between the Employer and the Contractor in connection with , or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. Not later than the eighty-fourth day after the day on which he received such reference the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided in an amicable settlement or an arbitral award.

If either the Employer or the Contractor be dissatisfied with any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before the eighty fourth day after the day on which he received the reference, then either the Employer or the Contractor may, on or before the seventieth day after the day on which he received notice of such decision, or on or before the seventieth day after the day on which the said period of 84 days expired, as the case may be given notice to the other party, with a copy for information to the Engineer of his intention to commence arbitration as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 67.4, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the seventieth day after the day on which the parties received notice as to such decision from the Engineer, the said decision shall become final and binding upon the Employer and the Contractor.

67.2 Conciliation

Where notice of intention to commence arbitration as to dispute has been given in accordance with Sub Clause 67.1, arbitration of such dispute shall not be commenced unless, the parties have explored the possibility of conciliation as per the provisions of Part-III of the Arbitration and Conciliation Act, 1996. When such conciliation has failed, the parties shall adopt the following procedure for arbitration :-

67.3 Arbitration

67.3.1 Any dispute and differences relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or

relating to the contract, designs, drawings, specifications, estimates, instructions, or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof in respect of which :-

- a) the decision, if any, of the Engineer has not become final and binding pursuant to Sub Clause 67.1 and
- b) Conciliation has not been reached as per the provisions of Clause 67.2

Shall be referred to the Sole Arbitration of a person appointed by the Chairman and Managing Director (CMD) of HSCC (I) Ltd. approved by **Indian Council Of Agricultural Research (ICAR), New Delhi**. Such Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of Arbitration duly satisfying the requirements of this clause.

- 67.3.2** If the Arbitrator so appointed resigns his appointment, is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman and Managing Director aforesaid or in his absence the person discharging the duties of CMD of HSCC (I) Ltd. may appoint a new Arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new Arbitrator so appointed may proceed from the stage at which it was left by his predecessor.
- 67.3.3** It is a term of the contract that the party invoking the Arbitration shall specify the dispute/differences or questions to be referred to the arbitrator under this clause together with the amounts claimed in respect of each dispute.
- 67.3.4** The Arbitrator may proceed with the Arbitration ex-parte, if either party, in spite of a notice from the Arbitrator, fails to take part in the proceedings.
- 67.3.5** The work under the contract shall continue, if required, during the Arbitration proceedings.
- 67.3.6** The Arbitrator shall make speaking Award and give reasons for his decision in respect of each dispute/claim alongwith the sums awarded separately on each individual item of dispute or difference or claims. The Arbitrator shall make separate award on each reference made to him.
- 67.3.7** The award of the Arbitrator shall be final, conclusive and binding on both the parties.
- 67.3.8** Subject to the aforesaid, the provisions of the Arbitration & Conciliation Act, 1996 or any statutory modifications or re-enactment thereof and the Rules made thereunder and for the time being in force shall apply to the Arbitration proceedings and Arbitrator shall publish his Award accordingly.

67.4 Failure to Comply With Engineer's Decision

Where neither the Employer nor the contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 67.1 and the related decision has become final and binding either party may, if the other party fails to comply with such decision, and without prejudice to any other rights it may have, refer the failure to arbitration in accordance with sub-Clause 67.3 as if the conditions specified in clauses 67.3.1 (a) and (b) had

been satisfied with respect to such dispute. The provisions of Sub-Clause 67.1 shall not apply to any such reference.

NOTICES

68.1 Notice to Contractor

All certificates, notices or instructions to be given to the Contractor by the Employer or the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for the purpose.

68.2 Notice to Employer and Engineer

Any notice to be given to the Employer or to the Engineer under the terms of the Contract shall be sent by post, cable telex or facsimile transmission to or left at the respective addresses nominated for the purpose in part II of these Conditions.

68.3 Change of Address

Either party may change a nominated address to another address in the Country where the Works are being executed by prior notice to the other party, with a copy to the Engineer, and the Engineer may do so by prior notice to both parties.

DEFAULT OF EMPLOYER

69.1 Default of Employer

In the event of the Employer:

- a) becoming bankrupt or being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or
- b) giving notice to the Contractor that for unforeseen reasons, due to economic dislocation, it is impossible for him to continue to meet his contractual obligations, or
- c) if the contractor becomes entitled under Sub-Clause 40.3 to terminate his employment under the contract in accordance with the provisions of this Sub-Clause,

the Contractor shall be entitled to terminate his employment under the contract by giving notice to the Employer, with a copy to the Engineer. Such termination shall take effect 14 days after the giving of the notice.

69.2 Removal of Contractor's Equipment

Upon the expiry of the 14 days notice referred to in Sub-Clause 69.1 the Contractor shall notwithstanding the provisions of Sub- Clause 54.1, with all reasonable despatch, remove from the site all contractor's equipment brought by him thereon.

69.3 Payment on Termination

In the event of such termination the employer shall be under the same obligations to the contractor in regard to payment as if the contract has been terminated under the provisions of clause 65.6, but, in addition to the payments specified in Sub- Clause 65.8 the Employer shall pay to the Contractor the amount of any loss or damage to the Contractor arising out of or in connection with or by consequence of such termination.

69.4 Contractor's Entitlement to suspend Works

Without prejudice to the Contractor's entitlement to interest under Sub-Clause 60.8 and to terminate under Sub-Clause 69.1, the Contractor may, if the Employer fails to pay the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub- Clause 60.8 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend work or reduce the rate of work.

If the contractor suspends work or reduces the rate of work in accordance with the provisions of this Sub- Clause and thereby suffers delay or incurs cost the Engineer shall after due consultation with the Contractor, determine

- a) any extension of time to which the contractor is entitled under clause 44.1 to 44.3, and
- b) the amount of such costs, which shall be added to the contract price.

And shall notify the Contractor accordingly.

CHANGES IN COST AND LEGISLATION

70.1 Increase or Decrease of Cost

It shall be added to or deducted from the Contract price such sums in respect of rise or fall in the cost of labour and/ or materials or any other matters affecting the cost of the execution of the works as may be determined in accordance with part II of these conditions.

70.2 Subsequent Legislation

If, after the date 28 days prior to the latest date for submission of tenders for the Contract there occur in the country in which the works are being or are to be executed changes to any National or State Statute Ordinance Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree,

Law, regulation or bye-law which causes additional or reduced cost to the contractor other than under sub-clause 70.1 in the execution of the Contract, such additional or reduced cost shall after due consultation with the employer and the Contractor be determined by the Engineer and shall be added to or deducted from the contract price and the engineer shall notify the Contractor accordingly.

70.3 Other Changes in Cost

To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other Clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

71.1 Engineer's Authority to Correct Errors

The Engineer shall at the request of either or both parties, or at his own initiative, subject to the provisions of this subclause and with retrospective effect from the date of this Contract have authority to make a determination correcting any manifest error (including for the avoidance of doubt and without prejudice to the generality of the Engineer's authority in this regard any error of spelling, grammar or punctuation and any omission, inclusion or misplacement of text) in any provision of this Contract Provided always that:

- (a) The Engineer before making such determination shall by notice to the Employer and the Contractor provide them with a draft thereof and give them a reasonable time in which to comment on the draft.
- (b) The Engineer shall in making such determination take into consideration the presumed intentions of the parties, the wording of any provision of the Conditions of Contract for use in connection with Works of Civil Engineering Construction Fifth Edition (June 1973) (Revised January 1979) ("the ICE Conditions of Contract") or of any other standard form of contract upon which the provision to be corrected has been based, and any comments received by the Employer and/or the Contractor on the draft determination provided to them under subclause (a) of this clause.
- (c) The Engineer shall provide the Employer and the Contractor with a copy of the determination made by him and
- (d) Clause 67.1 to 67.4 shall for the avoidance of doubt apply to any dispute between the Employer and the Contractor in connection with or arising out of the Engineer's determination.

**PROFORMA
OF
INDENTURE FOR SECURED ADVANCE OR CREDIT**

THIS INDENTURE made this day of ----- between M/s. ----- (hereinafter called the Contractor) which expression shall where the Context as admits or implies be deemed to include his executors/ administrators and assigns of the one part and Hospital Services Consultancy Corporation (India) Ltd. for and on behalf of National Research Centre on Equines, ICAR (hereinafter called the Engineer) which expression shall where the context so admits or implies be deemed to include its successors and assigns of the other part.

Whereas by an agreement dated----- (hereinafter called the said agreement) the Contractor has agreed to construct----- (the works or the said works).

And whereas the Contractor has applied to the Engineer that he may be or be given credit for materials brought by him to the site of the works subject to the said agreement for use in construction of the works.

NOW THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rs.----- paid to the Contractor by The Engineer. The receipt where the Contractor hereby acknowledges and of such advance or credited (if any) as may be made to him as aforesaid the Contractor hereby covenants and agrees with The Engineer and declares as follows :-

1. That all sums given as advance or credit by The Engineer to the Contractor as aforesaid shall be employed by the Contractor in or towards the execution of the said works and for no other purpose whatsoever.
2. That the materials for which the advance or credit is given are offered to and accepted by The Engineer as security and are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractor will not make any application for or receive further advance or credit on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor shall indemnify The Engineer against any claims to any materials in respect of which advance or credit has been made to him as aforesaid.
3. That the said materials and all other materials on the security of which any further advance or advances or credit may be given as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of The Engineer and in terms of said agreement.

4. That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper safe custody and protection against all risks of the said materials and that until used in the construction as aforesaid the materials shall remain at the site of the said works in Contractor's custody and on his own responsibility and shall at all times be open to inspection by The Engineer. In the event of the materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in greater degree than in due to reasonable use and wear thereof the Contractor will replace the same with other materials of like quality or repair and make good the same as required by The Engineer.
5. That the said materials shall not on any account be removed from the site of the work except with the written permission of The Engineer.
6. That the advance shall be repayable in full when or before Contractor receives payments from The Engineer of the price payable to him for the said works under the terms and provisions of the said agreements. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion of each payment The Engineer will be at liberty to make a recovery from the Contractor's bill for such payments by deducting there from the value of the said materials than actually used in the contraction and in respect of which recovery has not been made previously. The value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advance as made under these presents were calculated.
7. That if the Contractor shall at any time make any default in the performance of observance in respect of any of the terms and provisions of the said agreement or of those provisions the total amount of the advance or advances that may still be owing to The Engineer, shall immediately on the happening of such default be repayable by the Contractor to The Engineer together with interest thereon at 18% per annum from the date or respective dates of such advance or advances to the date of payment and with all costs. Damages and expenses incurred by The Engineer in or for the recovery hereof or the enforcement of the security or otherwise by reasons of default of the Contractor and the Contractor hereby covenants and agrees with The Engineer repay and pay the same respective to him accordingly.

8. That the Contractor hereby charges all the said materials with the repayment to The Engineer of all sums advances or credit as aforesaid and all costs. Charges, damages and expenses payable under these presents PROVIDED ALWAYS it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith. The Engineer may at any time thereafter adopt all or any of the following courses as he may deem best :
 - a. Seize and utilise the said materials or any part thereof in the completion of the said works in accordance with the provisions in that behalf contained in the said agreement debiting the Contractor with the actual cost of effecting such completion and the amount due in respect of advance or credit under these presents and crediting the Contractor with the value of work done as if he has carried it out in accordance with the said agreement and the rates thereby provided if the balance is against the Contractor is to pay the same to The Engineer on demand.
 - b. Remove and sell by public auction the seized materials or any part thereof and out of the money arising from the sale repay The Engineer under these presents and pay over the surplus (if any) to the Contractor.
 - c. Deduct all or any part of the moneys owing from any sums due to the Contractor under said agreement.
9. Except in the event of such default on the part of Contractor as aforesaid, interest on the said advance shall not be payable.
10. That in the event of conflict between the provisions of these presents and the said agreements, the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been hereinbefore expressly provided for the same shall so far as is lawful be referred to Chairman-cum-Managing Director, Hospital Services Consultancy Corporation (India) Ltd. or to such person as he may appoint whose decision shall be final and the provisions of the Indian Arbitration Act for the time being in force shall apply to such reference.

IN WITNESS whereof the said The Engineer and the Contractor hereunto set their respective hands and seals the day and year first above written.

Signed sealed and delivered by

Contractor

The Engineer

ANNEXURE - B**APPENDIX TO TENDER**

Important Clause	Clause No.	SECTION	Remarks
Amount of performance security	10.1	IV	5%of the contract Price
Minimum amount of third party Insurance	23.2	IV	Rs. 5,00,000/- for any one incident, number of incidents Unlimited.
Period of commencement from Engineer's order to commence	41.1	IV	2 weeks.
Mobilisation advance	60.7(a)	IV	10% of the contract price @10% interest per annum.on reducing balance
Amount of Liquidated damages	47.1	IV	1/2 % (half%) of contract price per week of delay.
Limit of liquidated damages	47.1	IV	10% of contract price
Defect Liability Period	49.1	IV	12 months
Percentage of retention	5.0 (f)	V	10%
Limit of retention money	5.0 (f) 60.5	V IV	5%of the contract price.
Programme of work and progress reports	11.7	V	Programme updated quarterly, progress reported weekly.
Time of Completion	43.1 1.3	IV V	12 (Twelve) Calender months from Engineers order to commence the works

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SPECIFIC CONDITIONS OF CONTRACT

The Conditions of Contract shall be GENERAL CONDITIONS OF CONTRACT in Volume I (hereinafter called the General Conditions) as modified or added to by the following Specific Conditions of Contract which shall be read and construed with the General Conditions as if they were incorporated therewith.

Insofar as any of the Conditions of Specific Conditions of Contract conflict or be inconsistent with any of the General Condition, the Conditions of Specific Conditions of contract shall prevail.

1.0 GENERAL

Description of Works

1.1 **“Construction, testing and commissioning and validation of Bio-Safety Level-3 Laboratory & associated works on “Turnkey Basis” at National Research Centre on Equines (NRCE), Hisar, Haryana** in compliance with CDC Guidelines as minimum and its maintenance during defect liability. The site for construction is located in NRCE Campus at Hisar, Haryana.

1.2 In these documents wherever the word tender/ tenderer/ tendering has been used, the same may be considered synonymous with bid/ bidder/ bidding.

1.3 Time for Completion

The contractor shall complete the works within **12 Calendar months** from Engineer's order to commence the work.

2.0 Definitions

- a) "PRINCIPAL EMPLOYER/EMPLOYER" means **National Research Centre on Equines (NRCE) under Indian Council Of Agricultural Research (ICAR), New Delhi.**
- b) "ENGINEER" Means *The Chief General Manager(PG-III) of HSCC(India) Ltd. or any officer nominated by the Chairman-cum-Managing Director, HSCC(India)Ltd. to act as Engineer from time to time.*
- c) "MONTH" and "YEAR" and all dates shall be calculated according to the Gregorian Calendar.

3.0 Insurance of Works, etc.

All Insurances referred to in General Conditions shall be effected with an Indian Insurance Company incorporated and registered in India.

4.0 Performance guarantees, advance payment guarantee and any insurance policies entered into by the Contractor under the terms of the Contract, shall stipulate that the proceeds of any claim shall be payable to *National Research Centre on Equines (NRCE)*.

5.0 Certificates and Payments

5.1 Payment of Interim Certificates will be made by the Engineer after

- 1) Execution of the form of Agreement by the parties hereto.
- 1) Provision by the contractor of the performance security in accordance with as specified in General Conditions of Contract (SECTION-IV)
- 1) Provision by the contractor of the insurance referred to in the General Conditions of Contract (SECTION-IV)

5.2 a) In accordance with clause 60.7 (a) of GCC (SECTION-IV), 10 (Ten percent) of the contract price shall be paid as mobilisation advance at an interest @ 10% (Ten Percent) per annum on reducing balance to the successful bidder upon furnishing a bank guarantee from Nationalised/Scheduled bank of equivalent amount in the form annexed (Annexure-C).

b) The contractor shall submit to the Engineer after the end of each month a detailed statement including measurements showing the estimated contract value of the permanent works executed upto the end of the month together with particulars of other amounts to which he is entitled under the Contract.

c) The statement shall be submitted on a printed proforma (prepared at the cost of the contractor) approved by the engineer.

d) The contractor shall be paid monthly on the certificate of the Engineer, the amount due to him which shall be the sum of the following amounts.

i) The estimated contract value of the permanent works executed upto the end of the previous month less retention money named in the bid, and

ii) 75% of the value of materials delivered to the site for permanent works on the site provided the engineer is satisfied that the amounts for such materials are reasonable bearing in mind the requirements of works, less deductions, as per the contract conditions.

- e) The Mobilisation advance can be drawn upto two months from the date of order to commence the work. The recovery of this mobilisation advance shall be affected as outlined in clause 60.7 (b) of General Conditions of Contract (SECTION-IV).
- f) Retention money at the rate of 10% (ten per cent) shall be deducted from each interim certificate subject to the maximum of 5% (five per cent) of the contract price.
- g) The retention money shall subject to clause 60.6 of General Conditions of Contract (SECTION-IV) become due and shall be paid to the contractor.
- h) Payment upon each of the Engineer's certificates shall be made by the HSCC(I) Ltd. acting for and on behalf of Employer within 30 days after such certificate has been issued by the Engineer.

However 75% of the estimated amount as determined by the Engineer of the payment due against the monthly running bill shall be paid within 15 (Fifteen) working days after submission of the bill by the contractor in the approved format and complete in all respects.

- i) The Engineer may at any time make any corrections or modifications to any certificate which shall have been issued by him and shall have power to withhold any certificate if the works or any part thereof are not being carried out to his satisfaction.
- j) The responsibility for making the payments or meeting other obligations to the contractor in respect of all works as certified by the Engineer shall be that of the Employer and not of the Engineer.
- k) After completion of work and prior to final payment, the contractor shall furnish to the Engineer, a release of claims against the Employer arising out of the contract, other than claims specifically identified, evaluated and excepted from the operation of the release by the contractor.
- l) To facilitate interim payments, the contractor shall submit a detailed price breakup of the lumpsum item/s given in the Bill of Quantity required to be executed for the project, indicating breakups of various components of the items of works, for the approval of the Engineer.

6.0 Settlement of Disputes - Arbitration

Sub Clause 67.1, 67.2, 67.3 and 67.4 of GCC (SECTION-IV) shall be followed. For settlement of all disputes & Arbitration the place of jurisdiction shall be Delhi.

7.0

Address

- a. The address of the Employer is as follows :

National Research Centre on Equines,
Sirsa Road, Hisar – 125001
Haryana

- b. The address of the Engineer is as follows

The Chief General Manager (PG-III), HSCC (India) Ltd., Plot - 6 (A),
Block - E, Sector - 1, Noida, Uttar Pradesh - 201 301.

- c. The address of the Contractor is

8.0

Deleted

9.0

Taxation

The contractor shall pay all taxes, duties, levies, etc. of the Government Provisions as applicable as per the advice of the Income Tax, Sales Tax Authority. Deduction of Income-Tax/ other taxes shall be made from each certificate of payment as per the relevant provisions of the Income Tax Act or as per the advice of the Income Tax authority/ other competent authority.

10.0

Co-ordination Meeting

The Contractor shall be required to attend co-ordination meetings with the Engineer, the Consultant and the other contractors during the period of contract as instructed by the Engineer. All costs incidental to such interaction shall be to the contractor's account and no claim will be entertained by the Employer/Engineer on this account.

11.0

Special Applications

11.1

Site Information

The proposed site for the setting up of **Bio-Safety Level-3 Laboratory is located in NRCE Campus, Hisar, Haryana.**

11.2 a)

Special Instruction

The Contractor shall procure and maintain at site suitable computer/s with peripherals and required software for planning, monitoring and billing as approved by the Engineer.

The contractor shall provide and maintain a suitably furnished temporary site office for HSCC including electricity, water, transportation for site use, telephone with STD facility and security arrangement etc. as directed by the Engineer and bear all costs including monthly bills, maintenance etc. till the completion of Defect Liability.

The entire works will be liable to be inspected by Chief Technical Examiner i.e. CTE. The contractor will provide all necessary help required for in this connection. The contractor will have to comply with the observations/suggestions of the CTE in respect of quality, specifications, workmanship etc. in his scope of work, if any. No extra payment will be made on this account however, any recovery arising out of the CTE's observation will be borne by the contractor.

b) Statutory Requirements

Contractor is responsible for obtaining the required approvals/clearances and Completion Certificate from statutory and local civic authorities prior to commencement of works and upon completion of the works, as applicable, at his cost. All such approvals/clearances and Completion Certificates shall be submitted to the Engineer by the contractor in original.

The contractor will be promptly extended all assistance in this connection and all the drawings, statutory forms/documents required for submission by client as Principal Employer shall be signed by the client. Any expenses incurred towards the fee of such authorities in connection with the statutory approvals shall be reimbursed to the contractor on production and submission of original challans and receipts/bills.

11.3.1 Contractor's Working Area

Suitable working area will be provided by the Engineer to the Contractor. The Contractor may have to carry out some cutting / filling work for making his working area. The cost of all such works shall be deemed to have been included in the rates and prices quoted for the works and no extra payment shall be made on this account.

11.3.2 Contractor's Temporary Structures

The Contractor may, at his own expense and subject to the approval of the Engineer and statutory authorities, construct offices, stores, workshop in the area allocated to him and remove the same as per the orders of the Engineer on completion of works. The Contractor shall furnish such details of his temporary works as may be called for by the Engineer and the Contractor shall satisfy the Engineer as to their safety and efficiency. Engineer may direct those temporary work which he considers unsafe or inefficient be removed and replaced in a satisfactory manner. The contractor shall immediately follow Engineer's directions/instructions.

The contractor shall make his own arrangement at his own expense for labour camp/ accommodation of his labour and staff and their conveyance to site as no workers/ staff shall unless with the specific approval of the Engineer be allowed to stay within the site. Gate passes shall be issued by the engineer to authorise the contractor's staff and workers to enter the site.

11.3.3 Procurement of Various Materials

The Employer will not supply any construction materials or equipment required for the works under this Contract. The Contractor must, therefore, make his own arrangements for timely procurement of various materials and equipments including steel and cement.

11.3.4 Water Supply & Power Supply

Water and power supply at site for drinking purpose as well as for construction purpose shall be made available to the contractor if spare capacity is available at site with the Employer. The contractor shall provide at his cost meters for recording consumption of power and water. The actual cost of water and power consumed by the contractor shall be recovered from the Running Bills of the Contractor.

In case the Employer is not able to provide power and water, the contractor shall make his own arrangement for water and power for drinking purpose and for the purpose of construction works at site. 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.

11.3.5 Telecommunications

The Contractor shall apply to the P&T authorities for the necessary telephone and communication lines at his cost.

11.3.6 Temporary Fencing

The contractor shall at his own expense, erect and maintain in good condition temporary fences and gates along the boundary of the areas assigned to him for the purpose of execution of the works.

The Contractor shall, except when authorised by the Engineer, confine his men, materials and plant within the Site of which he is given possession. The Contractor shall not use any part of the Site for purposes not connected with the works unless prior written consent of the Engineer has been obtained. Access shall be made to such areas only by way of approved gateways.

11.3.7 Testing of Materials

All materials used in the works shall be subject to inspection and tests. The Contractor shall carry out sampling of all such materials as per the appropriate Indian Standards and as directed by the Engineer. The contractor shall deliver the samples of materials to the site office of the Engineer in a manner as directed by the Engineer who will inspect the same and then order for testing of the materials.

The Contractor shall arrange for testing of materials normally in **Hisar** but samples may be sent to outside testing laboratories if necessary. The delivery of the samples shall be undertaken by the contractor. The cost and charges for sampling of materials and delivering the same to the office of the Engineer and/or other places including all incidentals in connection with the same as directed by the Engineer and the testing charges thereof shall be borne by the contractor and shall be deemed to be included in the rates and prices given in the Bill of quantities. The results of the tests carried out shall be binding on the contractor who shall comply with any rectification measures that the Engineer may deem fit and order to be executed by the contractor as a result of testing.

11.3.8 Approval of Samples prior to use

The contractor shall submit the samples of materials, he proposes to use in the works for prior approval of the Engineer. A sample room shall be maintained at site in which all approved samples shall be kept for comparison with materials being used at site. Any materials not confirming to the approved samples shall be rejected. The sample room, if available at site shall be provided by the Employer.

11.4 Shop Drawings / Working Drawings

The contractor shall submit the Shop/Working drawings for the approval of Engineer. The drawings shall be submitted by the contractor sufficiently in advance to give enough time to the Engineer for its scrutiny.

Any further detailing or amendments/clarifications asked by the Engineer shall be promptly made and submitted by contractor

11.5 "AS MADE" Drawings and Operation & Maintenance Manual

The Contractor shall supply two complete sets of "As Made" Drawings on polyester tracing film 75 micron thick and also on **CD** and three prints showing details of all the works as executed. The drawings and prints shall be delivered to the Engineer within one month of completion of the various sections of the work or at such other times as directed by the Engineer.

The drawings shall be fully dimensioned with the Engineer's standard title block or as approved by the Engineer. The contractor shall also submit the Operation and Maintenance manual in 2 sets of all the equipments and Systems. No extra payment shall be made to the contractor or claimed

entertained by the Engineer on this account and the cost of making the "As Made" drawings and Operation and Maintenance manuals shall be deemed to be included in the rates quoted in the Bill of Quantities.

11.6 Progress Photograph

The contractor shall supply to the Engineer Three prints of colour progress photographs of such portions of the work in progress or completed as directed by the Engineer. The photographs shall become the property of the Employer. The photographs shall be of approximate size 169mm x 115mm each. The photographs shall be mounted in albums and shall be suitably inscribed and captioned. The albums in a chronological order shall be handed over to the Engineer. No prints or the negatives/soft copies may be supplied to any persons without the authority of the Engineer.

11.7 Programme of Work and Progress Reports

The Contractor shall submit to the Engineer within four weeks of the award of the contract six copies of a detailed schedule showing in an approved form the estimated dates of commencement and completion of different parts of the works including the expected dates for completion of the various sections of the works. The detailed schedule shall be such as it can be updated quarterly or as directed by the Engineer. Six copies of the revised schedule shall be supplied to the Engineer as and when it is revised.

The progress shall be reviewed every fortnight. The Contractor shall submit to the Engineer a progress report for the period showing the upto date progress and progress on all items of each section of the works in relation to and in consideration of the detailed schedule.

11.8 Metric Units

Metric units have been used in the specifications and drawings in general.

If any materials described in the contract or ordered by the Engineer are described by dimensions in the metric units and the contractor can not in accordance with the contract, procure such materials in the measure specified in sufficient time to avoid delay in the performance of his other obligations under the contract, but can obtain such materials in other measure to dimensions approximating to those described in the Contract or ordered by the Engineer, then the contractor shall henceforth give notice to the Engineer of these facts stating the dimensions to which such materials are procurable in the other measure. As soon as practicable after the receipts of any such notice the Engineer shall give an order to the contractor which shall either :

- (a) Direct the contractor to supply such materials to the dimensions stated in his said notice to be procurable instead of the dimensions described in the contract or originally ordered by the Engineer, or
- (b) Direct the contractor to make some other variation whereby the need to supply such materials to the dimensions described in the contract or originally ordered by the Engineer will be avoided.

11.9 Field Materials Testing

11.9.1 The contractor shall provide facilities for laboratory testing of materials etc., at his own cost, at site or in a suitable testing laboratory in Hisar or outside laboratories, certified by the Engineer.

11.9.3 The field laboratory shall be equipped with all necessary apparatus to carry out the following field tests in accordance with relevant Indian Standards or equivalent approved Standards :

i) **Cement Testing:**

Tests for fineness, strength, setting time and soundness.

ii) **Concrete Testing:**

Tests for workability, proportions, density and strength.

iii) **Aggregate Testing:**

a) Sieve analysis

b) Determination of bulk density and voids on fine aggregates only:

c) Determination of moisture content, specific gravity and absorption on coarse aggregates only:

d) Determination of specific gravity and absorption

iv) Any other equipment/s required and instructed by the Engineer

11.9.4 The Contractor shall carryout inspection, testing, checks and shall also maintain records of inspection, testing & checks of materials, works and activities related to construction works. If required, the formats, checklists etc. shall be given by the Engineer during execution period. After getting approval from the Engineer, the contractor shall print all such forms, tables, formats etc. at his own cost.

11.9.5 On completion of the works and handing over, the field test laboratory shall be dismantled and removed from Site by the Contractor. The dismantled materials and equipment shall be the property of the contractor.

11.10 Compensation to the Consultant

In the event of delay in completion of the project due to reasons attributable to the contractor, the contractor shall compensate the Consultant by paying the Consultant the manday charges and establishment expenses deployed by the consultant on the project. All such compensation shall be paid by the contractor to the Consultant for the additional period beyond the stipulated completion as per the contract.

12.0 **Rates/Prices**

The quoted rates/prices for the items shall be complete in all respect including all labour, material, plant and machinery, tools and tackles, all taxes, duties, VAT, levies, statutory levies as applicable from time to time and considering exemptions available with the Employer. The contractor should quote his rates/prices accordingly for the complete works in all respect.

The items and quantities of the “Bill of Quantities” are indicative and not restrictive. The work shall be carried out as per the scope of works, as per the design and detailing finalized for achieving the intent and purpose of Construction of the laboratory conforming to Bio-Safety Level-3 of containment in line with CDC Guidelines as minimum and complete in all respect on “Turnkey Basis”. The quoted rates in the Bill of Quantities and approved price breakups shall be used for assessing the interim payments to be made under Clause 60.1 & 60.2 of SECTION-IV of the Contract. The interim payments made shall be adjusted in the final payment which shall be the **Awarded Contract Value** for the Project.

13.0 **Compliance for Statutory Obligations**

The contractor shall comply with all the statutory obligations and obtain all required clearances and licences to implement the project without any financial repercussions to HSCC/Employer and ensure all follow up actions with the local authorities in this respect for smooth functioning of the project.

14.0 **Unpriced Bids**

The unpriced copies of the purchase orders of major items/equipments and of subcontracts placed by the Contractor shall be furnished to Engineer.

15.0 **Guarantee and Defects Liability Period**

15.1 The entire BSL-3 Laboratory works including all the equipments, systems, services and components as a whole shall be guaranteed for its performance and against any manufacturing defects. The defects liability period shall be valid for a period of 1 (One) Year from the date of Completion of works and taking over of the works by the employer. The contractor shall guarantee that all the works, equipments, systems, services and components shall be free from any defect due to defective materials and bad workmanship or any other cause and that the equipments and systems shall work satisfactorily and the performance and efficiencies of the equipments and systems shall not be less than the approved values. Any part found defective during the defects liability period shall be repaired/replaced by the contractor at his own expense. The services of the contractors personnel, if requisitioned during this period for such work, shall be made available free of any cost to the Employer. However any consumables like gas, oil, v-belts, filters etc. is not covered under the defects liability. If the defects are not remedied within a reasonable time mentioned in the written notice, the Consultant/Employer may proceed to do so at the contractors risk and expenses without prejudice to any other rights. Joint inspection reports shall also be deemed as written notice for this purpose.

16.0 Comprehensive Annual Operation and Maintenance Services

- 16.1 After Taking Over of the BSL-3 Laboratory, the contractor shall provide Comprehensive Operation and Maintenance services for 1 year. The comprehensive operation and maintenance services provided by the contractor shall include providing trained manpower, accessories, tools, tackles, all spares and consumables, replacement of defective parts, carrying out routine and preventive maintenance and servicing of the equipments and systems etc. complete in all respect (excluding only power and water which shall be provided by the employer). The charges for providing 1 year comprehensive operation and maintenance services shall be included in the quoted rates and nothing over and extra shall be paid to the contractor on this account.
- 16.2 After completion of one year comprehensive operation and maintenance services, the contractor may be required to provide comprehensive operation and maintenance services for the complete BSL-3 Laboratory systems and equipments covered under this contract for a further period of upto 3 (three) years. However availing of comprehensive annual operation and maintenance services shall be at the sole discretion of the Employer. The unit rates quotes for comprehensive annual operation and maintenance services (after completion of 1 year already covered in the scope of works) for 1st year, 2nd year and 3rd year shall be binding on the contractor. The rates quoted for comprehensive annual operation and maintenance services shall be inclusive of all accessories, manpower, tools and tackles, spares and consumables, replacement of parts, routine servicing and maintenance of equipments and systems etc. (excluding only power and water which shall be provided by the employer) complete in all respect. Nothing extra over and above the quoted rates shall be payable on any account for providing operation and maintenance services.
- 16.3 The unit rates quotes for providing comprehensive annual operation and maintenance services for 1st year, 2nd year and 3rd year shall be binding on the contractor and shall be considered for the purpose of evaluation of financial/price bids.
- 16.4 During providing comprehensive operation and maintenance services, the contractor shall deploy adequate skilled manpower and tools and tackles and spares for smooth operation and maintenance of the Laboratory facility. The Engineer/Employer shall have the right to ask for more manpower or ask for replacement of existing manpower in case it is found that the operation and maintenance services provided are not satisfactory. The decision of the Engineer/Employer in this regard shall be final and binding on the contractor.

**ADDITIONAL SPECIFIC CONDITIONS OF CONTRACT
AND
SPECIFICATIONS**

(A) RELATING TO CIVIL, PLUMBING & FIRE FIGHTING WORKS

1.0 General

1.1 The following specific conditions and specification shall be read in conjunction with General Conditions of Contract and Specific Conditions of Contract. If there are any provisions in these additional specific conditions and specifications which are at variance with the provisions in the above mentioned documents, the provisions in these additional specific conditions & specifications shall take precedence and whichever is more stringent shall be followed.

1.2 These additional specific conditions and specification shall be considered as an extension and not as a limitation of the obligations of the preference.

X The CPWD General Specifications for Civil Works.

X The CPWD General Specification for Electrical Works : Part V for fire fighting-1985.

X For items not covered in CPWD Specification, the work shall be done as per the latest relevant IS Code of Practice.

X For items not covered by any of the above, the installation shall be done as directed by the Engineer and as per sound engineering practices.

2.0 Scope of Contract

2.1 The scope of work under this section covers the construction, testing and commissioning of the all Civil, Plumbing, fire fighting and associated works.

2.2 The work shall be carried out in conformity with the drawings and within the requirement of architectural, electrical, structural and other specialised services specifications and drawings.

2.3 The Contractor shall make provision of hangers, sleeves, structural openings required for other services and other requirements well in advance.

2.4 The said contract comprise of furnishing of all materials, equipment, labour & transportation etc. necessary to render the installation fully operational as per the intent of specification and drawings, including any necessary adjustment or corrections. The installation shall be all in conformity with local laws covering such installation.

3.0 Contract Drawings

3.2 The contractor shall check the drawings, if any provided by the engineer, to verify spaces in which his work will be installed. The Contractor shall examine and coordinate all Architectural, Structural, plumbing and other services Drawings before starting the work and report to the Engineer any discrepancies and obtain clarification. Any changes found essential to coordinate installation of this work with other services, shall be made with prior approval of the Engineer.

4.0 Shop Drawings

4.1 Within six weeks after award of the contract, the Contractor shall furnish for approval of the Engineer, three sets of detailed Shop Drawings (Architectural, Structural, Public Health Engineering and Services) of the works required to be executed under civil, plumbing and fire fighting works. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipments, as also the details of all related items of work of other trades. The contractor shall arrange for proof checking of the structural drawings from IIT/Roorkee and other drawings from accredited and approved agency at no extra cost.

4.2 All drawings necessary for assembly, erection, maintenance, repair and operation of the equipments shall be furnished and Different parts shall be suitably numbered for identification and ordering of spare parts.

4.3 When the Engineer makes any amendments 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.

4.4 No material or equipment may be delivered or installed at the job site until the Contractor has in his possession, the approved Shop Drawings for that particular material or equipment.

4.5 After approval of the drawings by the Engineer, the Contractor shall further furnish six sets of Shop Drawings for the exclusive use of and retention by the Engineer.

4.6 Approval of Drawings by the Engineer shall not relieve the Contractor of any part of his obligation to meet all the requirements of the Contract or of the correctness of his Drawings. The Engineer'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 alterations 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 or not.

4.7 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, the contractor shall prepare composite working drawings and sections at 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, or so as to cause any interference with the work of other trades, he shall make all the necessary changes without extra cost.

5.0 Samples and Catalogues

5.1 Prior to ordering any equipment/ material/ system, the Contractor shall submit to the Engineer, the catalogues, along with samples. No material shall be procured prior to the approval by the Engineer.

5.2 Approval of Materials

All materials used on the works shall be new and of the best quality available, conforming to the relevant specifications and as per good engineering practice. Prior approval shall be obtained in writing from the Engineer for all materials proposed and when necessary, approved sample duly identified and labelled shall be deposited with the Engineer and shall be kept at site.

6.0 Material and Equipment

6.1 All Material and Equipment shall conform to the relevant Indian Standards.

6.2 Where interfacing occurs, equipment shall be mutually compatible in all respects.

6.3 Where an item of equipment, other than as specified or detailed on the Drawings, is approved by Engineer if it requires any re-design of the structure, partitions, foundation, piping, 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 by the Engineer.

6.4 All similar equipment, materials, removable parts of similar equipment etc. shall be inter-changeable with one another.

7.0 Conformity with Statutory Acts, Rules and Standards

7.1 The installation shall be in conformity with the Bye-laws Regulations and Standards of the local authorities applicable to the installations. But if the specifications and drawings call for a higher standard of materials and/or workmanship than those required by any of the above regulations and those required by any of the above regulations and standards, then the specifications and drawings shall take precedence over the said regulations and standards.

7.2 However, if the drawings or specifications required something which violates the Bye-laws and Regulations, then the Bye-laws and Regulations shall govern the requirement of this installation.

7.2.1 Indian Standards : The System/ components shall conform to relevant Indian Standards wherever they are required and to the National Building Code, amended upto date.

7.2.2 Nothing in these specifications shall be construed to relieve the Contractor of his responsibility for the design, construction, manufacture and installation of the equipment with all its accessories in accordance with applicable Guidelines, Specifications, Statutory Regulations and safety codes in force.

8.0 Technical Data

8.1 Deleted

9.0 Manufacturer's Instructions

9.1 Where Manufacturer's have furnished specific instructions, relating to the Materials and Equipment used, covering points not specifically mentioned in these documents, manufacture's instructions shall be followed.

10.0 Training and Operating Instructions

10.1 If required by the Engineer, the Contractor shall at no extra cost train members of the maintenance staff either at site or at his works or the sub-contractor's workshop or at such other place or places as may be considered suitable by the Engineer.

10.2 During this period the contractor shall instruct and train the Engineer's/ Employers representatives in the operation, adjustments and maintenance of all equipment installed.

10.3 The Contractor shall submit to the Engineer a draft copy of 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 four (4) complete bound sets of operating and maintenance schedules along with manufacturers printed literature.

11.0 Inspection and Testing

11.1 The Engineer reserves the right to request inspection and testing at manufacturer's works at all reasonable times during manufacture of items for this contract.

11.2 The Engineer 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. Acceptance by the Engineer of any material or equipment shall in no way relieve the contractor of his responsibility for meeting the requirements of the specifications.

- 11.3 Routine and typical tests for the various items of equipment shall be performed at the Contractor's works and test certificates furnished. If required by the Engineer, the Contractor shall permit the authorised representative of the Engineer to be present during any of the tests.
- 11.4 After installation has been completed, the Contractor shall carry out under the direction and in the presence of the representative of the Engineer such tests and inspection as have been specified, or as the representative shall consider necessary to determine whether or not the full intent of the requirements of the drawings and specifications have been fulfilled. In case the work does not meet the full intent of the drawings and specifications and further tests are considered necessary, the Contractor shall carry them out and bear the expenses thereof.
- 11.5 The Contractor shall provide all necessary instruments such as Theodolite, Dumpy level, steel tapes, weighing machine, plumb bobs, spirit levels, hammers, micrometers, thermometers, smoke test machine etc. and labour for testing. The Contractor shall make adequate records of the test procedures and readings, shall repeat any tests requested by the Engineer and shall provide test certificates signed by an properly authorised person. Such test certificates shall cover all works. All such equipments shall be tested for calibration at any approved laboratory.
- 11.6 If test 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 shall be regarded as final as to what constitutes a satisfactory test.
- 11.7 The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere.

12.0 Test Certificates

- 12.1 The Contractor shall submit Manufacturers Test Certificates for all the Materials and Equipments.

13.0 Performance Guarantee

- 13.1 The Contractor shall also guarantee that performance of various equipments supplied for the fire fighting system, plumbing system etc. individually, shall not be less than, the approved ratings.

14.0 Quiet Operation and Vibration

- 14.1 All equipment shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Engineer. In case of rotating machinery, sound or vibration noticeable outside the room in which it is installed or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense.

15.0 **Accessibility**

15.1 The Contractor shall locate all equipment which must be serviced, operated or maintained 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 well in time, to be provided in the normal course of work, failing this, the Contractor shall make all the necessary repairs and changes at his own expense.

16.0 **Completion Certificate**

16.1 On completion of the installation a certificate shall be furnished to the Engineer, by the contractor, countersigned by the licensed supervisor under whose direct supervision the installation was carried out. This Certificate shall be in the prescribed form as required by the local authority. On the basis of this certificate the Contractor shall arrange for inspection of installation by the concerned local authorities.

16.2 The Contractor shall be responsible at his own cost for getting the construction and installation duly approved by the Statutory Authorities/Bodies concerned.

17.0 **Completion Drawings**

17.1 At the completion of the work in all respects, the Contractor shall at his own cost submit to the Engineer four (4) sets of layout Drawings drawn at the approved scale indicating the installation. These drawings shall clearly indicate the complete plant layouts, and piping layouts, location wiring, exact location of all the concealed piping, valves, controls, wiring and other services. The Contractor shall also submit four (4) sets of operation and maintenance manual, consolidated control diagrams, technical literature on all automatic controls and complete technical literature on all equipment and materials. The Contractor shall frame under glass, in the plant room all consolidated control diagrams and all piping diagrams.

18.0 **Rates**

18.1 Quoted Rates shall include all materials, equipment, appliances and incidental work which are necessary and customary to make a complete installation on turnkey basis.

19.0 **Check List**

19.1 The Contractor shall provide to the Engineer four copies of a comprehensive maintenance check list and shall post a copy of it in the Plant Room. The check list shall be a list of each piece of equipment in this contract, and shall provide a space for each of the next fifty two weeks to record the maintenance provided to and status of various equipment. Every 60 days at the time of inspection, the Contractor shall certify on this check list that he has examined each piece of equipment and that, in his opinion, it is operating as intended by the manufacturer, and that all necessary intention has been performed.

20.0 **Repairs**

All construction and equipment that required repairing shall be immediately serviced and repaired. All the required parts and labours shall be furnished at no extra cost to the Engineer.

21.0 **Control System**

During in the operation and maintenance period, atleast once every three month the Contractor shall check all controls in various areas to ensure that these are functioning as designed. This shall apply to all pressure switches and pressure gauges, contactor relays, controllers switches, high and low pressure cutouts etc.

22.0 **Reference Points**

22.1 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of works.

22.2 All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.

23.0 **License and Permits**

23.1 Contractor shall hold a valid contracting and plumbing license issued by the Municipal Authority or other competent authority under whose jurisdiction the work falls.

23.2 Contractor shall keep constant liaison with the competent Municipal or other authority and obtain approvals for all drainage and water supply works carried out by him.

23.3 Contractor shall obtain from the competent Municipal Authority completion certificates with respect to his work as required for occupation of the building.

23.4 Any fees deposited in connection with the work on behalf of the client in statutory bodies, Corporations, Government departments, etc. shall be paid by the contractor and the same shall be deemed to be included in the quoted rates. Necessary endorsement/application if required shall be arranged from the Employer by the Engineer.

24.0 **Cutting and Making Good**

24.1 No structural member shall be chased or cut without the written permission of the Engineer.

(B) RELATING TO ELECTRICAL INSTALLATIONS

1.0 General

1.1 The following specific conditions and specification shall be read in conjunction with General Conditions of Contract and Specific Conditions of Contract. If there are any provisions in these additional specific conditions and specifications which are at variance with the provisions in the above mentioned documents, the provisions in these additional specific conditions & specifications shall take precedence.

2.0 Regulations and Standards

2.1 The electrical installations shall conform to the standards and specifications as per Indian Standard Code of Practice for Electrical Wiring Installation IS : 732-1989 and as per CPWD General Specification for Electrical Works (Part I, II & IV). It shall also be in conformity with the current Indian Electricity Rules and regulations in so far as these are applicable to the installation. Wherever these additional specific conditions and specifications calls for a higher standard of material and/or workmanship than those required by any of the above regulations then this additional specific conditions and specification shall take precedence over the said regulation and standards.

3.0 Rates

3.1 The rates shall be for complete items of work inclusive of all charges for items contingent to the work, such as, packing, forwarding, insurance, freight and delivery and installation at site for the materials to be supplied by the contractor, watch and ward of all materials for the Internal Electrical Installation work at site for completing the required works in all respect on turnkey basis.

4.0 Completeness of Bid

4.1 All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the quoted rates and prices, whether such items are specifically mentioned in the bid documents or not.

5.0 Works to be done by the Contractor

5.1 The following works shall also be done by the contractor, and the quoted rates shall be deemed to include the following.

- i. Foundations for equipments and components where required, including foundation bolts.
- ii. Cutting and making good all damages caused during installation and restoring the same to their original finish.

- iii. Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.
- iv. Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/ distribution gear items, cubicle switch board etc. and erection, shall however be rectified to the satisfaction of the Engineer.
- v. Testing and commissioning and validation of complete installation.

6.0 Tools for Handling and Erection

- 6.1 All tools and tackles required for handling of equipments and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

7.0 Terminology & Scope

- 7.1 Terminology & scope of works shall be complete electrical installations works required to be executed as required and as given in the scope of works.

8.0 Measurement

- 8.1 The works shall be measured only for the purpose of making interim payments in the monthly Running Bills. The works however shall be executed complete in all respect on turnkey basis.

9.0 Drawings

- 9.1 The work shall be executed as per the approved drawings, however any minor changes found essential to co-ordinate the installation of this work with the other trades shall be made without any additional cost to the owner. The drawings shall be for guidance of the contractor and exact locations, distance and levels shall be governed by the building. The Contractor shall examine all architectural, structural, plumbing and sanitary & electrical drawings before starting the work and report to the Engineer any discrepancies which in his opinion appear on them and get it clarified. Contractor shall not be entitled to any extras for omissions or defects in electrical drawings or when they conflict with other services work.

10.0 Conduit/ Trunking Layout

- 10.1 Prior to the laying of the conduits and trunking the contractor shall examine/ study the drawings and report to Engineer in case desires to make any changes from the approved conduit layout plan and shall get the same approved from Engineer.

11.0 **Shop Drawings**

11.1 The Contractor shall prepare and submit to the Engineer for his approval detail shop drawings of specialized electrical works, Main & sub distribution boards, distribution boards, special pull boxes, light switch boards, telephone distribution boards, FDA System, Computer/ LAN System and other electrical equipments/ systems required for the project. The contractor shall arrange for proof checking of the drawings from accredited and approved agency at no extra cost.

12.0 **Manufacturer's Instruction**

12.1 Where manufacturers' have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.

13.0 **Materials & Equipment**

13.1 All materials and equipment shall be of the approved make and design. Unless otherwise called for, only the best quality of materials and equipment shall be used. The contractor shall be responsible for the safe custody of all materials and shall insure as against theft, damage by fire, earth quake etc. A list of items of materials and equipment, together with a sample of each shall be submitted to the Engineer within 30 days of the approval of designs and drawings.

14.0 **Scale**

14.1 Drawings shall be prepared to the scale as required for proper explanation and shall indicate the size and location of all equipments and accessories herein. The contractor shall obtain all dimensions preferably at the building (site of work) and check those plans for interference with the building structure and other equipment.

15.0 **Brochures and Data**

15.1 The contractor shall submit four copies of all brochures manufacturer's description data and similar literature.

16.0 **Approval of Shop Drawings**

16.1 The Engineer's approval of shop drawings, schedule, brochures etc. shall be an approval of general details and arrangements only and shall not relieve the contractor from responsibility for deviation from drawings or specifications unless he has in writing called Engineer's attention to such deviations at the time of submission nor shall it relieve the Contractor from responsibility for errors or omissions of any kind in the shop drawings when approved.

17.0 **Approval of Materials**

17.1 All materials used on the works shall be new and of the best quality available, conforming to the relevant specifications and as per good engineering practice.

Prior approval shall be obtained in writing from the Engineer for all materials proposed and when necessary, approved sample duly identified and labelled shall be deposited with the Engineer and shall be kept at site.

18.0 Inspection, Testing and Inspection Certificate

18.1 Engineer and its authorised representative shall have at all reasonable times access to the Contractor's premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship during its manufacture or erection or if the part of works is being manufactured or assembled at other premises or works.

18.2 The Contractor shall arrange all the materials and labour required for inspection of equipment or for any testing to be carried out at his/ manufacturer's works or at site. Notice for such inspection/ presence for testing shall be given to the Engineer by the Contractor at least fifteen (15) days in advance together with the routine test certificates of the equipments/ materials given by the manufacturer.

18.3 Notwithstanding approval of tests or equipment by the Engineer the contractor shall be required to perform site tests and prove the correctness of ratings and performance of equipment/ machinery and materials supplied and installed by the contractor as per the contract specifications and conditions. Engineer shall have full power to order the material or work to be tested by an independent agency at the electrical contractor's expense in order to prove soundness & adequacy.

19.0 Schedule & Manner of Operation

19.1 Time being the essence of this contract, contractor shall be expected to furnish all labour & material in sufficient quantities at appropriate time, expedite and schedule the work to meet the Engineer's requirement and so manage the operations that the work shall be completed in time as stated elsewhere. In case of shut down of power supply required, Contractor shall coordinate with Engineer and shall carry out essential works during the shut down period allowed by the Engineer. In case Engineer allows for such period during night or early morning hours, Contractor shall make all provisions to avail such account. Contractor shall not be entitled for any extra claims on such account. Contractor shall programme his work in such a way that items of work requiring presence of Engineer are carried out between 10 A.M. & 5 P.M. on working days.

20.0 Performance Guarantee

All equipment shall be guaranteed to give the required performance . The equipment or component or any other part of installation so found defective within the defect liability period shall be replaced/ repaired by the contractor free of cost to the satisfaction of the Engineer.

21.0 Completion Drawings (As Built Drawings)

21.1 On completion of the work, the Contractor shall submit to the Engineer completion drawings for the complete electrical installations drawn to a scale on “Polyester tracing film” indicating the following, along with four blue print copies of the same.

- a. Run and size of conduits, inspection boxes, junction boxes and pull boxes.
- b. Number of size of conductors in each conduit.
- c. Location and rating of sockets and switches controlling the light and power outlets.
- d. Location and details of main & sub distribution boards, distribution boards indicating the circuit number controlled by them.
- e. Type of fitting viz. fluorescent, pendants, brackets, bulkhead etc. and exhaust fans.
- f. A complete wiring diagram as installed and schematic drawings showing all connections for the complete electrical system.
- g. Location of telephone outlets, junction boxes and sizes of various conduits and number & sizes of wire drawn.
- h. Location of all earthing stations, route and size of all earthing conductors, manholes etc.
- i. Layout and particulars of cables & sub mains.
- j. Schematic drawing for telephone system.
- k. Layout of conduits for computer outlet points.
- l. Layout and details of fire detection & alarm system. Consisting of manual call points, fire alarm hooter, smoke & heat detector, FDA control panel including details of conduits and number of wires drawn.
- m. Layout and details of lightning protection system.
- n. Insulation tests and earth test results.

The contractor shall also submit 4 sets of comprehensive operation and maintenance manuals of various electrical items, equipments and systems.

22.0 **Confirmation of Quantities**

22.1 The quantities, if any, indicated in the BOQ are only for the purpose of the guidance of the bidders. The work shall be executed complete in all respect on turnkey basis as per the scope of works, approved design and drawings.

23.0 **Terms of Payment** (Only for major Electrical equipments/Items)

For the purposes of works executed for certificate of payment under clause 5.0 Specific Conditions of Contract (SECTION-V) the following norms shall be followed.

- a. 80% of BOQ contract rates on receipt of equipment/Item at site and after inspection and passing.
- b. 10% of BOQ contract rates on erection and installation of equipment.
- c. 5% after successful completion of running tests and provisional taking over.
- d. 5% after successful final performance testing of the equipment/system or successful completion of defect liability period wherein all defects pointed out have been satisfactorily removed, whichever is later.

However after taking over of the equipment/systems, the above 5% shall be released on submission of Bank Guarantee of equal amount from any National/Scheduled bank in the format acceptable to the Engineer and valid atleast till the completion of defect liability period.

24.0 **Training of Personnel**

The Contractor shall arrange to train the employer's personnel for carrying out operations, servicing, preventive maintenance and maintenance of electrical installations and systems.

(C) **RELATING TO HVAC WORKS AND SPECIALIZED EQUIPMENTS & SYSTEMS/SERVICES**

1.0 General

1.1 The following additional specific conditions and specifications shall be read in conjunction with General conditions of Contract, Specific Conditions of Contract and Technical Specifications. If there are any provisions in these additional specific conditions and specifications which are at variance with the provisions in the above mentioned documents, the provisions in these additional specific conditions and specification shall take precedence.

2.0 Scope of Contract

2.1 The scope of works covers supply, installation testing and commissioning of HVAC Works and Specialized Equipments & Systems/Services like Building Management System, Surveillance System (CCTV), Door Interlock System, Sterilizers, Steam Generation system etc. complete in all respect as per approved drawings and specifications

3.0 Stores and Materials

3.1 The contractor shall provide everything necessary for the proper execution of the work according to the approved designs and drawings and technical Specifications.

4.0 Supply of Equipment

4.1 The contractor shall submit the designs, drawings, technical details, catalogues, fabrication drawings, installation drawings etc. for every equipment and system to the Engineer for approval. No equipment or material shall be delivered without prior approval of the Engineer.

4.2 At the time of delivery, the contractor shall submit manufacturers test certificates for equipments and materials.

4.3 The contractor shall submit the Factory Gate passes/ Challans from manufacturer's factory/works clearly bearing the batch numbers/serial number/lot number for identification and date of despatch.

5.0 Shop Drawings

5.1 The Contractor shall within 60 days of signing of the contract prepare and submit to the Engineer for approval, 3 sets of detailed shop drawings of HVAC system and other specialized systems and services, equipment details, fabrication drawings, installation drawings etc. as per specifications and as required by the Engineer. The contractor shall arrange for proof checking of the drawings from accredited and approved agency at no extra cost.

5.2 These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also details of all related items of work by other disciplines.

- 5.3 If the Engineer makes any amendment in the above drawings, the Contractor shall supply two fresh sets of drawings with the amendments duly incorporated, along with the drawings on which corrections were made. After final approval has been obtained from the Engineer, the Contractor shall submit a further six sets of shop drawings for the exclusive use of and retention by the Engineer.
- 5.4 The shop Drawings shall be submitted for approval sufficiently in advance of planned delivery and installation of any material, to allow Engineer ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to failure to produce shop drawings in time.
- 5.5 Approval rendered on shop drawings shall not be considered as a guarantee of measurements or of building conditions. Where drawings are approved, said approval does not mean that drawings have been checked in detail nor does it in any way relieve the Contractor from his responsibility of furnishing materials or performing work as required by the Contract.

6.0 Completion Drawings

- 6.1 Following "AS BUILT" drawings shall be submitted by the contractor on completion of the work in 4 sets.
- a. Plant installation drawings giving complete details of the entire equipments including foundations.
 - b. Ducting drawings showing all sizes, damper locations and sizes of all air outlets and intakes, for all floors.
 - c. Electrical drawings showing cable sizes, equipment capacities, control components and control wiring.
 - d. Schematic control drawings giving detailed sequence of operation and notes to explain the operation of the control circuit.
 - e. Piping drawings showing all pipe sizes, valves and fittings.
 - f. Schematic drawings of all specialized systems and services
 - g. Any other drawings to be supplied as per instructions of the Engineer.

The Drawings shall be cross checked and approved by the Engineer before acceptance.

7.0 Operation and Service Manuals

- 7.1 The contractor shall submit 4 sets of operation and service manuals in respect of the HVAC System and Specialized Equipments and Systems.

Following minimum details shall be furnished:

- i) Detailed equipment data as approved by the Engineer.

- ii) Trouble shooting
- iii) Operation Instructions
- ii) Servicing and Maintenance instruction.
- iii) Approved test readings.

The contractor shall also submit four (4) sets of technical literature on all automatic controls and complete technical literature on all equipment and materials.

8.0 Inspection at Contractor's Premises

8.1 The Engineer and his representatives shall at all reasonable time have free access to the contractor's premises/works. The contractor shall give every facility to the Engineer and his Representative and necessary help for inspection and examinations and test of the materials and workmanship.

8.2 The Engineers's Representative shall have full powers to inspect drawings of any portion of the work or examine the materials and workmanship of the plant at the contractor's works or at any other place from where the material or equipment is obtained. Acceptance of any material or equipment shall in no way, relieve the contractor of his responsibility for meeting the requirement of the specifications.

8.2 All the expenditures incurred for inspection and testing of equipments and materials at the contractors/manufacturers premises shall be borne by the contractor and shall be deemed to have been included in the quoted rates.

9.0 Sub - Contracting

The contractor shall subcontract part of the works only with the written approval of the Engineer but subcontracting of any works shall not relieve the contractor from the responsibility of supplying the equipments/materials and giving the performance of the HVAC system and Specialized Equipments and Systems/Services as per the approved design conditions and the overall responsibility of the contractor for compliance with the contract terms does not alter by subcontracting.

10.0 Material Submittals

The contractor shall submit submittals for all equipment and machinery for the written approval of the Engineer before placing orders. The material submittals shall comprise of at least the following :

- a. Manufacturer's technical catalogues and brochures giving technical data about performance and other parameters.
- b. Manufacturers drawings/ sketches showing construction, dimensional and installation details.

- c. Rating charts and performance curves clarifying rating of equipment selected and proposed.

11.0 Samples and Prototypes

The contractor shall submit samples of items such as grilles/ diffusers, pipes, valves, insulation, controls , sensors and/ or any other parts or equipment as required by the Engineer for prior approval in writing before placing the order. The contractor shall also construct prototype or samples of work as laid down in the contract or as instructed by the Engineer. Such samples and prototypes after approval shall be retained by the Engineer and shall serve as the standards to be achieved in final construction.

12.0 Testing and Commissioning

- 12.1 Upon completion of installations, all the equipments and systems shall be tested for their operation, capacities, performance etc. Relevant Standards and Specifications shall be followed.

The complete HVAC system shall be put for a run test for two days and all the operating parameters shall be checked and tested for satisfactory operation.

- 12.2 The initial tests for the HVAC works and other equipments and system shall include but not be limited to the following :

- a. To operate and check the proper functioning of all electrically operated components viz., compressor motor, pumps, blowers, air handling units, rotating machine, fans, boilers, etc.
- b. To operate and check the proper functioning of all electrical panels, switch gears, safety and other controls.
- c. To adjust and balance air, water, steam and gas quantities to provide the designed flow rates by adjusting valves, dampers, diverters etc.
- d. To check the systems against leaks in different circuits, alignment of motor, `V' Belt adjustments etc.
- e. To check the vibration and noise levels of the equipment.
- f. Setting of all control and all such other tests which are essential for smooth functioning of the plant.

All adjustments should be made prior to these tests so that proper conditions/working are achieved during this testing.

- 12.3 The Contractor shall pay for and arrange without any extra cost, all necessary balancing, testing and measuring equipment, instruments, materials, accessories, power, water, fuel and the requisite labour for testing and commissioning. Any defects in materials and/or in workmanship detected in

the course of testing shall be rectified by the Contractor entirely at his own cost, to the satisfaction of the Engineer. The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Engineer. All tests shall be carried out in the presence of the Engineer or the Engineer's Representative.

13.0 Taking Over

13.1 After completion of the installation of the HVAC System and other specialized equipments and systems and upon satisfactory passing all the tests and validation, the contractor shall notify the Engineer and same shall be taken over by the employer.

13.2 Final Performance and capacity Test and Validation

13.2.1 The installation as a whole shall be balanced and tested upon completion, and all relevant information, including the following shall be submitted to the Engineer.

13.2.1 Air volume passing through each unit, duct, grilles, apertures.

13.2.2 Pressure in each room/zone as per the design and Differential pressure readings across each filter, fan and coil, and through each pump.

13.2.3 Static pressure in each air duct.

13.2.4 Electrical current readings, in amperes of full and average load running, and starting, together with name plate current of each electrical motor.

13.2.5 Continuous recording over a specified period, of ambient wet and dry bulb temperatures under varying degrees of internal heat loads and use and occupation, in each zone of each part of the building.

13.2.6 Daily records should be maintained of hourly readings, taken under varying degrees of internal heat load and use and occupation, of wet and dry bulb temperatures, upstream "on-coil" of each cooling coil. Also suction temperatures and pressures for each refrigerating unit. The current and voltage drawn by each machine.

13.2.7 Any other readings shall be taken which may subsequently be specified by the Engineer.

13.2.8 Performance testing of the equipments/systems and complete A/C plant and HVAC system to check the following parameters with respect to design as minimum.

- Performance and Capacities of Chillers
- Performance and Capacities of Air Handling Units
- Performance and Capacities of Pumps
- Performance and capacities of Exhaust Blowers
- Room inside temperatures and RH
- Air quantity at each outlet

- Air Changes in each room/zone with respect to the designed condition
- Pressure in each room/zone with respect to designed conditions
- Operation of electrical panels and its switchgears
- Testing of power cabling, earthing etc.
- Operation of Volume Control Dampers, Fire Dampers, Isolation Dampers etc.
- Filter Integrity / DOP test for all HEPA and Fine Filters
- Operation of all valves and controls
- Operation of Control Desk/Panel
- Any other test deemed required by the Engineer to check the performance of the HVAC equipments and system

In addition to the above testing, final performance and capacity tests of the HVAC System shall also be carried out during the defects liability period as follows :

- a. Peak summer/ monsoon test during the period from 15th may to 31st July. The installations should be able to maintain the specified inside conditions within the tolerance limits permitted in the contract.
- b. Peak winter test during the period from 1st December to 15th February. The installations should be able to maintain the specified inside conditions within the tolerance limits permitted in the contract.

- c. During the performance testing, the critical parameters such as temperature, relative humidity, relative pressure etc. shall be tested and the capacities of various equipments shall be tested.

If the contractor is unable to give peak summer/monsoon and winter test of the HVAC system during this period, the defect liability period for the HVAC system shall be extended till the satisfactory completion of the above tests

14.0 Operation of Plant

- 14.1 The user shall have the right to operate the equipments and systems, if in operating condition, whether or not such equipments, have been accepted as complete and satisfactory. Repairs and alterations shall be made at such time as directed by the Engineer. In special circumstances user may have to use the plant to Air condition some areas even before the completion of whole work. The contractor shall Co-operate fully under such circumstances.

15.0 Guarantee and Defects Liability Period

- 15.1 All the equipments including HVAC System and Specialized Equipments & Systems shall be guaranteed for its performance and against any manufacturing defect. This guarantee shall be valid for the complete defect liability period.
- 15.2 The contractor shall guarantee that all equipments and materials shall be free from any defect due to the defective materials and bad workmanship or any other cause and that the equipment shall work satisfactorily and that the performance and efficiencies of the equipment shall be not less than the guaranteed values. Any parts found defective during the guarantee/defect liability period shall be replaced by the contractor at his own expense. The services of the contractor's personnel, if requisitioned during this period for such work, shall be made available free of any cost to the Employer.
- 15.3 If the defects are not remedied within a reasonable time mentioned in the written notice, the Employer may proceed to do so at the contractors risk and expenses without prejudice to any other rights. Joint inspection report shall also be deemed as written notice for this purpose.

16.0 Measurement of Works

- 16.1 The works shall be measured from time to time only for the purpose of making interim payments in the monthly Running Bills of the contractor. The works shall be measured in accordance with the units specified/approved and the Price Breakups approved by the Engineer.
- 16.2 The Engineer may from time to time intimate to the contractor that he requires the works to be measured and the contractor shall forthwith attend or send a qualified agent to assist the Engineer or the Engineer's Representative in taking such measurements and calculations and to furnish all particulars or give all assistance required by either of them. Should the contractor not attend or neglect or omit to send such agent, then the measurements of the works, carried out by the Engineer or his Representative shall be taken to be the correct measurements of the works, in accordance with the standard method of measurements, as in prevalent use.

The contractor or his representative may at the time of measurement take such notes and measurements as he may require. The contractor shall submit Running bills supported by detailed measurement sheets.

17.0 Variation in Quantities

17.1 The quantities, if any, given in the BOQ are only for the purpose of guidance to the bidders. The work shall be carried out on “Turnkey Basis” as per the Design and Detailing finalized and approved.

18.0 Maintenance

18.1 The contractor shall carry out routine servicing and maintenance of the HVAC System and Specialized Equipments & Systems during the operation and maintenance period. The contractor shall carry out all routine and special maintenance of the equipments and systems and attend to any defects that may arise during operation.

19.0 Performance Guarantee

19.1.1.1 The contractor shall submit a performance guarantee certificate that the equipments and the complete systems shall maintain the operating parameters within +/- 5 % of the specified parameters. The Contractor shall also guarantee that the capacity of various components as well as the whole system covered under scope of work, approved designs and technical data etc. shall not be less than the specified capacities. The guarantee of the specific equipment supplier alone with regard to the performance of the system shall not be acceptable. However, this does not alter the overall responsibility of the contractor for compliance with the contract terms and conditions.

20.0 Painting

20.1 All equipment and ancillary items such as pipes, supports etc., will be painted in approved manner, using standard colour scheme as approved by the Engineer.

21.0 Safe Custody and Storage

21.1 Safe custody of all machinery and equipments supplied by the contractor shall be his own responsibility till the final taking over by the Employer. He should, therefore, employ sufficient staff for watch and ward at his own expenses. The Employer may, however, allow the contractor to use the plant room/other rooms, etc., for temporary storage of his equipment if such spaces are ready and available.

22.0 Terms of Payment

For purposes of certificate of payment under clause 5.0 Specific Conditions of Contract (Volume-I, Section-V) the following norms shall be followed for items/works covered under this section.

- a. 80% of BOQ contract rates on receipt of equipments/items at site and after inspection and passing.
- b. 10% of BOQ contract rates on erection and installation of equipment.

- c. 5% after successful completion of running tests and taking over.
- d. 5% after successful final performance testing of the equipment/system or successful completion of defect liability period wherein all defects pointed out have been satisfactorily removed, whichever is later.

However after taking over of the equipment/system, the above 5% shall be released on submission of Bank Guarantee of equal amount from any National/Scheduled bank in the format acceptable to the Engineer and valid atleast till the completion of defect liability period.

23.0 Training of Personnel

The contractor shall arrange to train the Employer's personnel on the following aspects of the HVAC System and other specialized equipments and systems :

- a) Operation of HVAC Plant and all other equipments and systems.
- b) Gas charging and pumping down of the system.
- c) Adjustments of settings for controls and protective devices.
- d) Servicing and Preventive maintenance.
- e) Disassembling and assembling of equipment/ system parts including identification and replacement of worn out parts.

FORM OF AGREEMENT

(On a stamp paper of appropriate value)

AGREEMENT

This Agreement made the _____ day of _____ 20_____ between National Research Centre on Equines (NRCE), Hisar, Haryana under *Indian Council of Agricultural Research (ICAR)* (hereinafter called "The Employer") represented by M/s HSCC(India)Ltd. who enters into this Agreement of the one part and M/s
..... (hereinafter called "The Contractor") of the other part.

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

Now this Agreement witnesseth as follows :

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

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

Signed, Sealed, and Delivered by the Said _____

Binding Signature of [HSCC] for and on behalf of National Research Centre on Equines (NRCE), Hisar, Haryana under *Indian Council Of Agricultural Research (ICAR), New Delhi.*

Binding Signature of Contractor _____

In the presence of

Witness (1) :

Witness (2) :

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To,

M/s HSCC (India) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of National Research Centre on Equines (NRCE), under the *Indian Council Of Agricultural Research (ICAR), New Delhi.* (hereinafter called Employer) which expression shall include his successor and assigns represented by his Consultant M/s. HSCC (I) Ltd., Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301 (hereinafter called HSCC) having awarded to M/s. _____ (hereinafter referred to as the said Contractor or `Contractor' which expression shall wherever the subject or context so permits include its successors and assigns) a contract No _____ in terms inter alia, of the HSCC Letter No. _____ dated _____ and the General Conditions of Contract and upon the condition of the contractor's furnishing security for the performance of the contractor's obligations and discharge of the contractor's liability under and in connection with the said contract upto a sum of Rs. _____ (Rupees _____ only) amounting to _____ percent of the total contract value.

1. We, _____ (hereinafter called `The Bank' which expression shall include its successors and assigns) having our branch office at _____ and registered /Head office at _____ a company registered under the Companies Act, 1956) hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur any and all moneys anyways payable by the contractor to the Employer in respect of or in connection with the said contract inclusive of all the Employer's losses, damages and costs, (inclusive between attorney and client) charges and expenses and other moneys anyways payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of Rs. _____ (Rupees _____ only).
2. We _____ Bank Ltd. further agree that The Employer shall be sole judge of and as to whether the said contractor has committed any breach or

breaches of any of the terms and conditions of the said contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by The Employer on account thereof and the decision of The Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by The Employer from time to time shall be final and binding on us.

3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Contractor's obligations and liabilities hereunder or to vary the contract or the work to be done thereunder vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total contract value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to The Employer hereunder or prejudice the rights of The Employer against the bank.
4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to The Employer in terms thereof.
5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Employer in terms hereof.
6. The amount stated in any notice of demand addressed by The Employer to the Bank as liable to be paid to The Employer by the Contractor or as suffered or incurred by The Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to The Employer or suffered or incurred by The Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.
7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of The Employer and liabilities of the contractor arising upto and until midnight of
8. This guarantee shall be in addition to any other guarantee or security whatsoever that The Employer may now or at any time anywise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said contract, and The Employer shall have full authority to have recourse to or enforce this security in preference to any other guarantee or security which The Employer may have or obtain and no forbearance on the part of The Employer in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any security which The Employer may have obtained or obtain from the contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.

10. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Employer in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.
11. We.....the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ (Rupees _____) and this guarantee shall remain in force till _____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Dated _____ day of _____ 20

For and on behalf of Bank.

Issued under seal :

ANNEXURE - C

PROFORMA FOR ADVANCE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

M/s HSCC (India) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

1. In consideration of the National Research Centre on Equines (NRCE), Hisar-Haryana under *Indian Council Of Agricultural Research (ICAR), New Delhi*. (hereinafter called as The Employer) which expression shall include his successors and assigns represented by his Consultant M/s. HSCC (I) Ltd., Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301, (hereinafter called HSCC) having agreed under the terms & conditions of contract No. _____ dated _____ (hereinafter called the Contract or the said Contract) to make at the request of ("the Contractor" or "the said Contractor") the contractor thereunder a lumpsum advance of Rs. _____ for utilising it for the purposes of the said contract on its furnishing a guarantee acceptable to HSCC.
2. We, the _____ Bank having its branch office at _____ (hereinafter referred to as the Bank or the said Bank) a Company under the Companies Act 1956 and having our registered office at _____ do hereby guarantee the repayment and recovery of the said advance together with interest thereon as provided according to the terms and conditions of the said contract. If the contractor fails to utilise the said advance for the purposes of the said contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by The Employer, we _____ Bank hereby unconditionally and irrevocably undertake to pay to The Employer on demand and without demur or protest to the extent of the said sum of Rs. _____ with interest any claim made by The Employer on us against non-utilisation/misutilisation of the said advance and/or by reason of The Employer not being able to recover in full the said sum of Rs. _____ with interest as aforesaid.
3. We, _____ Bank further agree that The Employer shall be the sole judge of and as to whether the contractor has utilised or not utilised the said advance or any part thereof for the purposes of the said contract and/or as to whether the advance or any part thereof with interest has been recovered or not and the finding of the Employer in this regard shall be final and binding on us.
4. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract and till the said advance has been fully recovered and its claims satisfied or discharged and till The Employer certifies that the said advance with interest has been fully recovered from the contractor.
5. The Employer shall have the fullest liberty without affecting in any way the liability of the said Bank under this guarantee or Indemnity from time to time to vary any of the

terms and conditions of the said Contract or the advance or to extend time of performance by the Contractor or to postpone for any time and from time to time any of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said contract or the advance or securities available to The Employer and the said Bank shall not be released from its liability under these presents by any exercise by The Employer of the liberty with reference to the matter aforesaid or by reason of time being given to the said Contractor/or any other forbearance, act or omission on the part of The Employer or any indulgence by The Employer to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its said liability.

6. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be in any way affected or suspended by reason of any dispute or disputes having been raised by the Contractor (whether or not pending before any arbitrator, Tribunal or court) or any denial or liability by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Employer in terms thereof.
7. The amount stated in any notice of demand addressed by The Employer to the Bank as liable to be paid to The Employer by the Contractor, shall be conclusive evidence of the amount so liable to be paid to The Employer by the Bank.
8. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever that The Employer may now or any time may have in relation to the Contractor's obligations or liabilities under and/or in connection with the said Contract, and The Employer shall have full authority to have recourse to or enforce this security in preference to any other guarantee or security which The Employer may have or obtain and no forbearance on the part of The Employer in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Employer to proceed against the said Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding that any security which the Employer may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the said Bank hereunder be outstanding or unrealised.
10. We, _____ the said Bank undertake that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
11. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Employer in writing and agree that any change in the Constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.
12. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall remain valid and irrevocable for all claims of The Employer and liabilities of the Contractor arising upto and until midnight of _____.
13. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ alongwith interest due thereon

(Rs. _____)with interest and this guarantee shall remain in full force till _____ and unless a claim is made on us within 3 months from the date i.e. before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities hereunder.

Dated _____ day of _____ 20

for and on behalf of Bank.

Issued under seal:

PROFORMA FOR BID SECURITY BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

M/s HSCC(India) Ltd,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of your agreeing to accept Bank Guarantee for Rs.

.....
(Rupees) in lieu of
payment from M/s having its
/their registered office at

.....
(hereinafter called the Bidder) towards Bid security in respect of your tender no.

.....
..... calling for tender for
at and for due fulfilment of the terms and
conditions of the said tender, we hereby undertake and agree to indemnify and keep
you indemnified to the extent of Rs (Rupees
.....).

In the event of any loss or damages, costs, charges or expenses caused to or suffered
by you by reason of any breach or non observance on the part of the Bidder of any
terms and conditions of the said tender, we shall on demand and without cavil or
argument, and without reference to the bidder, irrevocably and unconditionally pay you
in full satisfaction of your demand the amounts claimed by you, provided that our
liability under this guarantee shall not at any time exceed Rs
.....(Rupees
.....).

This guarantee herein contained shall remain in full force and till you finalise the
tender and select the tender as per your choice and it shall in the event of the said
bidder being selected and entrusted with the said work, continue to be enforceable till
the said bidder executes the Agreement with you and commences the work as
stipulated under the terms and conditions of the said tender have been fully and
properly carried out by the said bidder and accordingly discharges the guarantee.

We also agree that your decision as to whether the bidder has committed any breach
or non observance of the terms and conditions of the said tender shall be final and
binding on us.

We under take to pay the Consultant any money so demanded by the Consultant
notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or
proceedings pending before any Court or Tribunal relating thereto, our liability under
this present being absolute and equivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the contractor(s) shall have no claim against us for making such a payment.

This guarantee shall continue to be in full force and effect for a period ofdays from the date of issue. Notwithstanding the above limitations, we shall honour and discharge the claims preferred by you within thirty days of expiry of this guarantee.

We shall not revoke this guarantee during its currency except with your previous consent in writing. This guarantee shall not be affected by any change in Constitution of our bank or of the bidder firm. Your neglect or forbearance in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of time for the payment hereto shall in no way relieve us our liability under this guarantee.

Dated this day of

Yours faithfully,

For

Signature & seal of the Bank (Authorised Signatory)

BILL OF QUANTITIES

ITEM NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE IN FIG. (in RS)	RATE IN WORDS (in (RS)	AMOUNT (Rs.)
<p>1. The prices are to be quoted in the below mentioned form and shall include the cost of all the material, equipments, tools & tackles, labor, accessories etc. required for the successful execution and completion of the work in all respect as required as per the scope of works, approved specifications, designs and drawings on 'Turnkey Basis"</p> <p>2. The bidder shall quote the rate/s in figures and in words and extend the amount to the 'AMOUNT' column</p> <p>3. The bidder shall submit breakup of Lump Sum price quoted as under in enclosed Annexure-1 to the BOQ</p>						
1.00	LUMPSUM PRICE FOR 'TURNKEY WORK' OF CONSTRUCTION OF BSL-3 LABORATORY AT NRCE, HISAR					
	<p>Construction, testing , commissioning and validation of Bio-safety level 3 (BSL-3) Laboratory & associated works on "Turnkey Basis" in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period. The works shall be executed as as per the scope of works, approved designs and detailing, specifications, drawings, samples, prototypes etc. Any work not specifically mentioned but essentially required for meeting the purpose and intent of setting up of the proposed BSL-3 Laboratory shall be deemed to be included in the scope of works. All fixed equipments like Autoclaves, Bio-Safety Cabinets, Pass Boxes, HVAC system components, Hot water generator, Air compressor, Computers, Laboratory work stations and all other equipments and systems required for making the laboratory operational and functional shall be provided and included in the scope of works except for the equipments used for scientific research purpose.</p>	Turnkey Lump Sum basis	1			

SUB TOTAL- A (Rs.) =

SUB TOTAL- A (Rs. In Words) =-----

BREAKUP OF LUMP SUM PRICES : ANNEXURE-1

Item No	Description Of Item	Qty.	Unit	Rate in Figures (Rs.)	Rate in Words(Rs.)	Amount (Rs.)
1.00	<p>BUILDING CONSTRUCTION & ASSOCIATED WORKS</p> <p>Construction of building/s on 'turnkey basis' to meet the intent and purpose of setting up the BSL-3 laboratory and services etc. as per the scope of works, approved specifications, designs and drawings on turnkey lump sum basis including foundations, structures, partitions, doors, ceiling, windows/view panels, PHE works, painting, flooring, finishing, fire fighting works, water proofing works, boundary wall works etc. complete in all respect</p>	Turnkey Lump Sum	1			
2.00	<p>HVAC WORKS & BMS</p>					

	<p>Execution of HVAC works on 'turnkey basis' to meet the intent and purpose of setting up the BSL-3 Laboratory as per the scope of works, approved specifications, design and drawings on turnkey lumpsum basis including required Air-Conditioning system, Air Handling Units, exhaust systems, filters, pipings, insulation, temperature/RH/Pressure sensors and controls, Building Management System, fire dampers, volume control dampers, bio-safety dampers, electrical distribution panels, power and control cabling works, etc. complete in all respect as required</p>	Turnkey Lump Sum	1			
3.00	<p>ELECTRICAL WORKS</p>					
	<p>Execution of electrical works on 'turnkey basis' to meet the intent and purpose of setting up of BSL-3 Laboratory as per the scope of works, approved specifications, designs and drawings on turnkey lumpsum basis including Power Distribution Panels for the BSL-3 Laboratory, Power Cables, building electrification works, electrical light fittings and fixtures, cabling, earthing, uninterrupted Power Supply System, LAN system, Fire Detection & Alarm system, telephone and EPABX system etc. complete in all respect and including connection of power to the BSL-3 Laboratory from existing feeder (LT Panel).</p>	Turnkey Lump Sum	1			
4.00	<p>SPECIALIZED FIXED EQUIPMENTS</p>					

	<p>Execution of specialized equipments and systems works on 'turnkey basis' to meet the intent and purpose of setting up of BSL-3 Laboratory as per the approved specifications, designs and drawings on turnkey lumpsum basis including Pass Boxes, Dunk Tank/s, Steam Autoclave/s, Bio-Logical Safety cabinets etc. complete in respect as required</p>	<p>Turnkey Lump Sum</p>	<p>1</p>			
<p>5.00</p>	<p>SPECIALIZED SYSTEMS AND SERVICES</p>	<p>Execution of specialized systems and services works on 'turnkey basis' to meet the intent and purpose of setting up of BSL-3 Laboratory as per the scope of works, approved specifications, designs and drawings on turnkey lumpsum basis including Hot water generator/ calorifier and hot water distribution system, Air Compressor and compressed air distribution system, Door Interlocks and Access Control System, complete in all respect as required</p>	<p>Turnkey Lump Sum</p>	<p>1</p>		
<p>7.00</p>	<p>FURNITURES & WORK STATIONS</p>	<p>Providing laboratory workstations on 'turnkey basis' to meet the intent and purpose of setting up of BSL-3 Laboratory as per the scope of works, approved specifications, designs and drawings on turnkey lumpsum basis including laboratory work stations, laboratory chairs, sinks, hand wash basins, eye wash stationetc. required inside the</p>	<p>Turnkey Lump Sum</p>	<p>1</p>		

	laboratories, excluding the office furnitures.					
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TOTAL (Rs.) =

BILL OF QUANTITIES - OPTIONAL ITEM

Item No	Description Of Item	Qty.	Unit	Rate in Figures (Rs.)	Rate in Words(Rs.)	Amount (Rs.)
2.00	<p>COMPREHENSIVE ANNUAL OPERATION & MAINTENANCE SERVICES</p> <p>Comprehensive Annual Operation & Maintenance Charges for three years, after 1 year from the date of taking over. The rates shall be inclusive of all spares, accessories, consumables (except fuel , power and water), manpower, tools and tackles, replacement of parts, routine servicing and maintenance of equipments etc. complete in all respect as specified in the tender documents.</p>					
a)	First Year	1	LS			
b)	Second Year	1	LS			
c)	Third Year	1	LS			
SUB TOTAL- B (Rs.)						
=						
SUB TOTAL- B (Rs. In Words) :						