

**HLL INFRA TECH SERVICES LIMITED**  
**(Subsidiary of HLL Lifecare Ltd., A Government of India Enterprise)**

**TENDER**  
**FOR**

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF**  
**HT SUBSTATION INCLUDING CIVIL WORKS AT PAYYANUR**  
**CAMPUS OF KANNUR UNIVERSITY**

**Volume- III**  
**SPECIFIC CONDITIONS OF CONTRACT**

**Tender No. HITES/IDS/19/10 Dated:-20.08.2019**



Golden Jubilee Block, HLL Bhavan,  
Poojappura P.O  
Thiruvananthapuram  
PH: 0471 - 2775500

**INDEX****SPECIFIC CONDITIONS OF CONTRACT (SCC)**

<b>Sl. No.</b>	<b>Section No.</b>	<b>Heading</b>	<b>Page No.</b>
01	1	General	3
02	2	Additional Conditions & Specifications	29
03		A General	29
04		B Civil Works	39
05		C Electrical Works & Installations	41
06	3	Formats for Guarantees	52

---

## HLL Infra Tech Services Ltd. (HITES)

### **SECTION 1- GENERAL**

#### **General**

##### **1. Scope of Contract**

The scope of work -----

**The scope of work also includes preparation of all detailed shop drawings, as-built drawings, , obtaining approvals at different stages from local authorities, electrical inspector, state electricity board, water & sewer line connection, pollution, fire inspectorate, permission for bore well, completion certificates, occupancy certificate and all other required statutory approvals/clearances from relevant Statutory authorities.**

##### **2. Drawings**

###### **2.1. Tender Drawings**

The tender drawings are for Tender Purpose only and are intended as a guide to the Bidder/ Contractor and give general layout of buildings and general information of the structures and general positions of utilities, services and equipment only. Contractor's quoted rate for any item should not be based on any measurement, quantity, and specification from these drawings. Any claim raised by the contractor in this regard shall not be valid in this contract and shall not be accepted by the HITES.

###### **2.2. Issue and custody of drawings & specifications**

The contractor on signing of contract shall be furnished free of cost one copy of all drawings and all further drawings issued during the progress of the works. The contractor shall keep one copy of all drawings at the works site and the Engineer-in-charge shall have, at all reasonable times, access to the same.

The drawings shall be provided to the Contractor as per the schedule (prepared at the start of the works and necessarily updated or revised from time to time) as mutually agreed by the Engineer-in-charge and the Contractor. Last major drawings may be provided as per the schedule prior to the stipulated date of completion and the Contractor, if found necessary shall increase his resources and effort so as to complete the works within stipulated time.

From time to time during the course of contract revised drawings may be issued to the Contractor and the Contractor shall ensure that all superseded drawings are removed from site and stored in a lockable cabinet as directed by the Engineer-in-charge and replaced by revised drawings.

The Contractor shall maintain complete up to date Register of drawings issued at site. All drawings shall be properly numbered and indexed for ready reference. Superseded drawings should be properly identified.

The contractor shall ensure that only the valid up to date drawings are used for setting out, construction and preparation of as built drawings etc.

###### **2.3. Bar Bending Schedule**

Contractor shall prepare bar bending schedules and shall get them approved from the Engineer-in-charge or his authorized representative.

#### **2.4. Working drawings/ Shop drawings/ Design:**

The drawings supplied by the Engineer-in-charge have been listed in the tender documents. These drawings are indicative for the purpose of detailing and requirement of the contract. The contractor shall take into consideration space allocated for equipments before ordering them to ensure that the equipment would fit in the space provided with necessary clearances required as per the relevant standard/ manufacturer's recommendations. In case of any difficulty it should be brought to the notice of the Engineer - in- Charge.

Detailing for shop drawings of services included in the scope of work of contractor will have to be done by the contractor based on the schematics and other details provided by the Engineer-in-charge or local authorities. The work will be executed by the contractor based on the approved shop drawings from the concerned authority and accordingly contractor will be responsible for obtaining all required final NOC/ clearance from concerned authorities. These drawings and details shall also contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipments and also details of all related items of work by other discipline.

The contractor shall submit to the Engineer-in-charge for approval details of all proposed equipment, accessories, equipment characteristics and capacity details of all equipment, accessories and devices etc. as per the specifications and obtain approval of the Engineer-in-charge.

In case there is delay in any drawings and design viz shop drawings, or specialized works drawings etc. to be supplied by the contractor, Engineer-in- Charge may ask the Contractor to make necessary changes, as required. In case of failure on the part of the contractor to carry out the directions of the Engineer - in- Charge action may be taken to get the needful done at the risk and cost of the Contractor. All drawings shall be signed by Contractor or their authorised representative with name, seal and date before submission to Engineer-in-charge.

##### **2.4.1 Engineer in charge shall issue the Good For Construction (GFC) Drawings to the contractor for Electrical services in the following manner:**

- **Floor layout indicating position of light fixtures, small power sockets (Raw& UPS), Power supply points.**
- **DB schedules, Single line diagrams of electrical panels**
- **Site electrical plan indicating position of power intake arrangement (FP/DP structure, metering point), HT cable route, position of substation, DG set etc.**
- **External lighting plan indicating position of street light**

2.4.2 The Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Engineer-in-charge. The Engineer-in-charge may in his absolute discretion and from time to time further issue drawings and/or written instructions, details, directions and explanations, which are hereafter

collectively referred to as “Engineer-in-charge’s Instructions” in regard to:

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

The Contractor shall forthwith comply with and duly execute any work in compliance to above instructions provided always that verbal instructions, directions and explanations given to the contractor or his representative by the Engineer - in- Charge, shall, if involving a variation, be confirmed in writing by the Contractor within seven days, and if not dissented in writing within a further seven days by the Engineer - in- Charge, these shall be deemed to be Engineer - in- Charge’s instructions within the scope of the contract.

## **2.5. Shop Drawings**

- 2.5.1. The Contractor shall furnish for approval of the Engineer-in-charge three sets of detailed sanitary, plumbing, firefighting (external & internal), Pump room & Shop drawings of all equipments and materials required to complete the work as per specifications well in advance. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also the details of all related items of work of other trades. All shop drawings are to be made in accordance with latest fire safety norms and building codes.
- 2.5.2. All drawings necessary for assembly, erection, maintenance, repair and operation of the equipment shall be furnished and different parts shall be suitably numbered for identification and ordering of spare parts.
- 2.5.3. For any amendments proposed by Engineer-in-charge 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.
- 2.5.4. No material or equipment may be brought at Site until the Contractor has the approved Shop drawings for that particular material or equipment.
- 2.5.5. After approval of the drawings by the Engineer-in-charge, the Contractor shall further furnish six sets of Shop drawings for the exclusive use of and retention by the Engineer-in-charge.
- 2.5.6. Approval of drawings by the Engineer-in-charge shall not relieve the Contractor of any obligation to meet all the requirements of the Contract or of the correctness of his drawings. The Engineer-in-charge’s approval of specific item shall not mean the approval of the assembly of which it is a component. The Contractor shall be responsible for and is to bear the cost for all alternations of the works due to

discrepancies or omission in the drawings or other particulars supplied by him, whether such drawings have been approved by the Engineer-in-charge or not.

2.5.7. 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-in-charge, the Contractor shall prepare composite working drawings and sections to a suitable scale not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, and it is cause for any interference with the work of other trades, he shall make all the necessary changes without extra cost.

2.5.8. All shop drawings and detail drawings will be made as per requirements of local authorities and tender drawings incorporating all latest regulations and requirements. No separate drawings will be, issued for making shop drawings.

**2.5.9. Contractor shall submit shop drawings of Electrical services in the following manner:**

- **Floor layouts indicating light fixtures, switches, small power layouts (Raw & UPS) etc. All items must be numbered and separate identification marks must be given for raw & UPS power services.**
- **Distribution board schedule mentioning circuit number, wire size of circuit, quantity of items, room/location of circuit being fed, connected load of circuit, DB location, incoming cable size, total connected load details, incoming & outgoing circuit breaker details etc.**
- **Conduit layout shall be submitted separately for each services.**
- **Mounting heights of all items must be clearly indicated in the layouts.**
- **Cable route & size, cable tray route & dimensions etc. between DBs & panel boards shall be marked for each services in the layout.**
- **Position of floor electrical panels shall be marked in the layouts.**
- **Main single line diagram of electrical system shall be submitted. Main SLD shall provide arrangement of power intake, details of connected load, details of HT panel, transformers, DG set, Electrical panels, Cable size, etc.**
- **Site plan of external electrical services showing location of Substation, DG set, FP/DP structure, HT cable route, street lights, LT cable route etc. shall be clearly marked in the layout. Trench dimensions, dimensions of equipments, clearance between equipments/wall etc.**
- **Electrical earthing layout showing position of earth pits, earth conductor route. This must be done after conducting soil resistivity test and further fault level calculations for the proposed area.**
- **Coordination drawing shall be prepared by the contractor. All services above & below false ceiling must be inserted in the latest false ceiling layout. The layout shall clearly indicate all dimensional details of various equipments/services. Sectional details must be prepared where all services coincide at many places.**
- **plan.** Sectional details must be prepared to provide dimensional details.

### **3. Disruption of Progress**

- 3.1. The Contractor shall give 4 weeks, in advance, written notice to the Engineer-in-charge whenever planning or progress of the Works is likely to be delayed or disrupted due to non-issue of any drawing or order by the Engineer-in-charge. The notice shall give details of the drawings or order required explaining why and by when it is required and if any delay or disruption is likely to be suffered on that account.
- 3.2. If by reason of any failure or inability of the Engineer-in-charge to issue drawings/ order/ clarifications within 4 weeks of such notice by the Contractor and the contractor suffers delay, then the Engineer-in-charge, shall record the facts for any extension of time under respective clause of the agreement. Notwithstanding anything stated above, the Contractor shall not be eligible for any financial compensation arising due to any delay.
- 3.3. No compensation whatsoever shall be payable to the contractor for any damage by rains, lightening, wind, storm, floods, tornadoes, earthquakes, or any other natural calamities during execution of work and no claim on this account will be entertained for such damages.

### **4. Contractor's General Responsibilities**

(a). Execution of works:

The Contractor shall, subject to the provisions of the Contract, and with due care and diligence, execute and complete the Works & remedy any defects therein in accordance with the Contract. The Contractor shall provide all labour, including the supervision thereof, materials, Constructional Plant and Machineries and all other things, whether of a temporary or permanent nature, required in and for such execution, completion, maintenance and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.

If the contractor finds any discrepancy in the drawings or between the drawings, bill of quantities and specifications, he shall immediately and in writing refer the same to the Engineer - in- Charge for clarifications who shall decide the matter.

The successful contractor is bound to carry out any items of work necessary for the completion of the job even though such items are not included in the bill of quantities and rates instructions in respect of such additional items and their quantities will be decided as per the provision of the contract and issued in writing by the Engineer-in-charge.

The Contractor must bear in mind that all the work shall be carried out strictly in accordance with the specifications as given in these documents and also in compliance of the requirements of the local public authorities and to the requirements/ satisfaction/ direction of the Engineer-in-charge and no deviation of any account will be permitted.

The contractor shall have to use materials from the makes / manufacturers specified in the list of materials of approved brand and/or manufacture contained in the contract documents and as approved by the Engineer - in- Charge. Wherever different pattern/ Design/ Quality of materials with same specification/ make as specified in the contract, is available in the market, Engineer-in-Charge will approve the pattern/ Design/ Quality of the material/ item which shall be final and binding on the contractor. The contractor shall supply samples of all the materials/ fittings/ fixtures proposed to be used in the work and obtain approval of the Engineer - in- Charge. These samples shall be retained

at site till completion of the work. If subsequently it is found that approved material upon testing does not meet the requirement as specified in the contract the contractor shall get approval of alternate material.

(b). Samples & Approval of Materials

- i. The Engineer-in-charge will not supply any materials required for execution of the Works under this Contract. The Contractor must, therefore, make his own arrangements for timely procurement of various materials including steel and cement.
- ii. Prior to ordering any equipment/ material/ system, the Contractor shall submit to the Engineer-in-charge the catalogues, along with samples from approved list of manufacturers. No material shall be procured without written approval of the Engineer-in-charge.
- iii. Prior approval of each and every material including steel cement, aggregate, bricks etc or any other fittings & fixtures shall be taken by the contractor from the Engineer-in-charge. Samples for all the materials to be used in the work shall be got approved from Engineer-in-charge before their bulk procurement. Samples approved shall be kept in the sample room till the completion of the work.
- iv. All materials used on the Works shall be new and of the approved quality and make available, conforming to the relevant specifications of the contract. Prior approval shall be obtained in writing from the Engineer-in-charge for all materials proposed and when necessary, approved samples duly identified and labeled shall be deposited with the Engineer-in-charge and shall be kept in the sample room at Site. List of approved make indicates make/ manufacturer generally acceptability. Final choice of make/ manufacturer of material & models shall be with the Engineer-in-charge.

(c). Material and Equipment

- i. All material and equipment shall conform to the relevant Indian Standards and bear IS marking where ever applicable.
- ii. Where interfacing is involved, both equipments shall be mutually compatible in all respects.
- iii. Where an item of equipment, other than as specified or detailed on the drawings, is approved by Engineer-in-charge, requires any re-design of the structure, partitions, foundation, piping, writing or any other part of the mechanical, electrical or architectural layout, all such re-design, and all new drawings and detailing required therefore, shall be prepared by the Contractor at his own expense and approval obtained from the Engineer-in-charge.
- iv. All similar equipment, materials, removable parts of similar equipment etc. shall be inter-changeable with one another.

(d). Approved makes for materials and vendor list

The contractor shall procure materials amongst the vendors as mentioned in the approved make lists enclosed with Volume IV. In case a material is not available from any of the vendors in the enclosed vendor lists, the contractor may intimate and submit details of source from where the contractor wishes to procure the material, along with complete details and the particular material shall be got approved from the Engineer - in- Charge before procurement.

(e). Safety in Construction



The contractor shall employ only such methods of construction, tools and plant as are appropriate for the type of work or as approved by Engineer-in-Charge in writing.

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

(f). Adequacy, stability and safety:

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

(g). Temporary works and arrangements:

The Contractor shall furnish to the Engineer-in-charge full particulars i.e. site location and area required including drawings, etc. of all temporary works necessary for the execution of the works and shall give adequate time to the Engineer - in- Charge for his approval. The Contractor shall be solely responsible for the stability and structural safety of all temporary works including obtaining statutory approvals and payment of statutory fees, if any. Should it be necessary to shift the temporary works to some other place during the execution of the works, the Contractor shall do so, at his own cost.

(h). Initial and Final Clearance of site for temporary works:

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

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

(i). Storage, Cleaning and Dewatering

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

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

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

The Contractor shall make his own arrangement for storage of those materials, which can be accommodated at site. Contractor shall be fully responsible for safe custody of

the same. Materials shall be considered as "Delivered at Site" only after the physical presence of materials at site are verified by the Engineer-in-charge. Storage of materials / equipment elsewhere shall not be considered as "Delivered at Site."

The Contractor shall be responsible to keep entire site free from water due to water coming from any source at any level and shall protect all materials and works from being damaged by the water from any source. Contractor shall make proper arrangements for drainage prior to use of water for curing, testing, cleaning etc.

Any expenditure incurred by the Contractor in fulfillment of his obligations under this sub-clause shall be deemed to have been included in the financial bid and subsequent contract.

**5. Watch& Ward and Lighting**

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

**6. Care of Works**

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

**7. Force Majeure:**

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

**8. Contractor's Superintendence**

(a). The contractor shall be solely responsible for the means, methods, techniques sequence and procedure of construction. The Contractor shall be responsible to see the

completed work complies accurately with the Contract requirements. The Contractor shall provide all necessary superintendence during the execution of the Works as per contractual provisions.

(b). Contractor's Representative for Execution & Coordination of Works

The Contractor shall ensure his presence at site all times during working hours throughout the course of the Contract or depute a Competent representative who shall be empowered to receive instructions from the Engineer - in- Charge in respect of all matters likely to arise in connection with the execution & coordination of the works at the site. Contractor's Authorized Representative shall take joint measurements and sign the measurement books / bills. Any direction, explanations, instructions or notices given by the Engineer-in-charge to such representative shall be held to be given to the Contractor. In case of absence of said Representative other alternative representative should also be mentioned having same responsibilities.

**The contractor should submit curriculum vitae (CV) of the key personnel proposed to be deployed at site as per Schedule "F" of GCC for supervision and execution of work.**

**The contractor under normal circumstances would not be allowed to replace the key personnel during the execution of the contract.** However, for any reasons, due to unavoidable circumstances if it becomes necessary in the interest of the project to replace any one / all the above key personnel the contractor must submit the CV of the new personnel (having qualifications and experience as per requirement of the contract) to Engineer-in-Charge for their approval.

A list of all technical and key personal staffs must be submitted to the Engineer-in-Charge with their area of work/ responsibility with verified signature and the link persons to receive the instructions at site (in case the main person was not found at site) during the inspection by representative of Engineer-in-charge. Any staff of contractor found incapable/unsuitable to execute the assigned work shall be replaced by the Contractor if desired by the Engineer-in-Charge.

(c). Contractor's Employees

The Contractor shall employ competent Engineering staff/ technical assistants/ technicians who are qualified, skilled and experienced in their respective trades, to ensure proper supervision, quality & output of the work they are required to supervise. No child labour shall be employed on the work. All the skilled semi-skilled and unskilled labour shall work under the sole guidance of the contractor/his representative.

(d). Removal of Contractor's Employees

The Contractor shall on the direction of the Engineer-in-Charge immediately remove from the work any person employed thereon by him who may, in the opinion of the Engineer-in-Charge has misconducted himself and such person shall not be again employed on the works without the permission of the Engineer-in- charge.

(e). Unauthorized Persons

No unauthorized persons shall be allowed on the site. The contractor shall provide complete security arrangement for the campus during construction to avoid trespassing. The Contractor shall ensure all such persons are kept out and shall take steps to prevent trespassing. However the contractor will make sure to provide free access at any time for Engineer-in-charge to the site and other working places.

## **9. Compliance with Statutes, Regulations, Etc.**

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

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

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

## **10. Setting out**

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

## **11. Quality of Materials, Workmanship and Test**

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

The contractor shall upon the instruction of the Engineer-in-charge's representative furnish him with documentation to prove that the materials & goods comply with the requirements of contract and for requirement stated above. The Engineer-in-charge may issue instruction in regard to removal of material from site or any work, if

these are not in accordance with the contract. The contractor shall provide such assistance, instruments, machinery, labour and materials as are required for examining, measuring, sampling, testing of material or part of work.

The Engineer-in-charge may carry out **Third Party Quality Assurance /Audit** by an independent agency/ individual/firm/institute at any time. The agency will be permitted and offered all support related to site inspection by the Contractor. Observations/ discrepancies noticed by third party quality assurance/audit shall be attended by the contractor at his own cost.

(b). Samples

- i) All samples of materials and/or items of works in adequate numbers, sizes, shades & pattern as per specifications shall be supplied free of charge by the contractor without any extra charge. All other expenditure required to be incurred like conveyance for taking the samples for testing at the laboratory, packing, etc, shall be borne by the contractor. If the test results do not conform to the specifications and standards laid down, the materials shall be rejected, the contractor shall remove such materials from site. The laboratory for testing of samples shall be decided by the Engineer – in charge, whose decision shall be final and binding.
- ii) Contractor shall submit Samples to the Engineer-in-charge for approval. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at the site, detailed literature/ test certificate of the same shall be provided to the satisfaction of the Engineer-in-charge. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalogue numbers and the use for which intended and otherwise as the Engineer-in-charge may require to review the submittals for the limited purposes required by paragraph (d) below. The numbers of each sample to be submitted will be as specified in the Specifications, or as shall be specified by the Engineer-in-charge.
- iii) Submittal Procedures
  1. Before submitting each Sample, Contractor shall have determined and verified all materials with respect to intended use, fabrication, shipping, handling, storage, assembling and installation pertaining to the performance of the Work and All information relative to Contractor's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programmes incident thereto.
  2. Each submittal will bear a specific written indication that Contractor has satisfied Contractor's obligation under the Contract Documents with respect to Contractor's review and approval of that submittal.
  3. At the time of each submission, contractor shall give the Engineer-in-charge specific written notice of such variations, if any; that the sample submitted may have from the requirements of the contract document. Such notice shall be separate from the submittal and in addition shall cause a specific notation to be made on each sample submitted for review and approval of each such variation
- iv) Review and Approval:
  1. Sample shall be reviewed and approved only to determine if the items covered by the submittals will, after installation or incorporation in the work, conform to the information given in the contract documents and be compatible with the design concept of the completed project functioning as

a whole as indicated by the contract documents, drawings.

2. Review and approval will not extend to means, methods, techniques, sequences or procedures of construction. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make corrections required by Engineer-in-charge and shall submit as required new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for and by the Engineer-in-charge on previous submittals.
  3. Above referred review and approval of Samples shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Document unless Contractor has in writing called the Engineer-in-charge attention to each such variation at the time of submission as specified above and received written approval of each such variation by specific written notation thereof incorporated in or accompanying the Sample approval; nor will any approval by Engineer-in-charge relieve Contractor from responsibility for complying with the requirements of contract.
  4. Only when the samples are approved in writing by the Engineer-in-charge, the contractor shall proceed with the procurement and installation of the particular material/ equipment. The approved samples shall be signed by the Engineer-in-charge for identification and shall be kept on record at site office until the completion and acceptance of the work and shall be available at the site for inspection / comparison at any time. The contractor shall keep with him a duplicate of such samples to enable him to process the matter.
  5. For items of works where the samples are to be made at the site, the same procedure shall be followed. All such samples shall be prepared at a place where it can be left undisturbed until the completion of the project.
  6. The Engineer-in-charge shall communicate his comments/ approval to the Contractor to the samples at his earliest convenience. Any delay that might occur in approving of the samples for reasons of its not meeting with the specifications or other discrepancies, inadequacy in furnishing samples of appropriate quality from various manufacturers and such other aspects causing delay on the approval of the materials/ equipment's etc., shall be ascribable to the account of the contractor. In this respect the decision of the Engineer-in-charge shall be the final.
- v) On delivery of the supplies of materials/ equipments for permanent works at the site, the contractor shall specifically arrange to get the supply inspected by the Engineer-in-charge and compared with the approved sample and his specific approval obtained before using the same in the work.

vi) Cost of Tests

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

vii) Testing facilities

The Contractor shall, at his own cost, provide testing facilities as per CPWD

specifications and IS Codes at site as stipulated in the General conditions of the contract (GCC) or as directed by the Engineer-in-charge including staff required for testing. The tests shall be carried out jointly in the presence of Engineer-in-charge or his representative and the contractor or his representative.

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

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

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

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

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

## **12. Absence of Specifications**

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

## **13. Obtaining Information's related to Execution of work**

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

## **14. Access for Inspection**

Persons nominated by Engineer-in-charge shall at all reasonable times have free access to work and/ or to the workshops, factories or other places where materials are lying or from which they are being obtained and the Contractor shall extend necessary service to Engineer-in-charge and their representatives every facility necessary for checking measurements, inspection and examination and test of the materials and workmanship.

## **15. Examination of Work before covering up**

(a) No part of the works shall be covered up or put out of view without the written approval of the Engineer-in-charge and the contractor shall give due notice to the

Engineer-in-charge whenever any such work or foundation is or ready or about to be ready for examination and the Engineer-in-charge shall, examine and measure any work before it is covered up or put out of view and to examine foundations before further work is placed thereon.

(b) Uncovering and making openings

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

**16. Assignment**

The contractor shall not, without the prior consent of the Engineer-in-charge assign the Contract or any part thereof, or any benefit or interest therein or there under, otherwise than by:

- A change in favour of the Contractor's bankers of any money due or to become due under the Contract, or
- Assignment to the Contractor's insurers (in case 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 Contractor shall not sub-contract the whole of the Works. Also, the Contractor shall not subcontract any part of the works without the prior consent of the Engineer-in-charge, except where otherwise provided under the Contract.** Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be fully responsible for the quality of the work executed and acts, omission and commission, defaults and neglects of any Subcontractor, his agents, servants or workmen as if these were the acts, defaults or neglects of the Contractor, his agents, servants or workmen. Such Permission may be granted only for the specialized work etc and the decision of Engineer-in-charge shall be final.

**17. Claims**

The contractor shall submit to the Engineer-in-charge monthly statement giving full details of claims for any additional payments for extra or additional / substituted work ordered by the Engineer-in-charge which he has executed during the preceding month, to which the contractor may consider himself entitled supported with analysis of rates being claimed failing which the contractor shall be deemed to have waived his right. The Engineer-in-charge may authorize consideration of such claims on merits on production of sought out documents/ vouchers etc.

**18. Secured Advance**

- I. Secured advance on materials, which are admissible as per **Clause 10 (B) (i)** of the General Conditions of Contract and brought to site for use in the work, shall be paid only after the Engineer in charge has personally verified that the material brought at site of work for use in the work conforms to the specifications/sample approved by him.
- II. Secured advance shall be recovered according to consumption of material in the work. Contractor shall have to sign an Indenture Bond (on a non-judicial stamp paper of appropriate value) as per proforma provided in GCC before release of the advance.
- III. The materials shall virtually stand Hypothecated to HITES but contractor shall be fully responsible for watch & ward/ security of materials for which Secured Advance has been paid by HITES.



IV. Any infringement and / or breach of the above specifications and conditions etc, shall render the contractor liable to action under various clauses of the contract and such action as stipulated in the conditions therein.

**19. (a) Inspection & Testing during manufacture**

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

**(b) Dates for Inspection & Testing**

The dates of Inspection & Testing, after receipt of written request by the Contractor, shall be mutually agreed by the Engineer-in-charge and the contractor.

**(c) Facilities for Testing at Manufacturer's Works**

Where the contract provides for tests on the premises of the contractor or of any sub-contractor the contractor shall provide such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as may be required and as may be reasonably demanded to carry out such tests.

**(d) Rejection**

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

**(e) Delivery of Materials and Equipment**

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

**(f) Inspection & Testing and Re-inspection**

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

**(g) Inspection Reports**

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

**20. Physical and Virtual Completion of Work**

When the whole of the Work is physically and virtually complete and has satisfactorily passed required tests that may be prescribed under the Contract:-

a) The contractor shall give a written notice to this effect within 10 days of completion along with an undertaking to rectify any defects that may be found

during inspection. The Engineer - in- Charge shall jointly inspect the work with the contractor within 30 days of receipt of such notice.

- b) The Engineer-in-charge shall inspect the works completed to see if they are in such a condition so as to be put to its proper or other intended final use and / or occupied without any short comings and no major or minor items of works are remaining which in the opinion of the Engineer-in-charge will cause undue difficulties in satisfactory use/ occupation of the works.

## **21. Provisional Acceptance and Certificate of completion**

### **21.1. Provisional Acceptance and Issue of Certificate of Physical Completion of work**

The work shall be deemed to have been physically completed and provisionally accepted after fulfillment of all the following by the Contractor.

- i) Physical completion of all works and obtaining all required approvals from the statutory authorities as required for occupation and use of the works and handing over such certificates to the Engineer-in-charge
- ii) Submitting As-Built Drawings, Catalogues, Brochures, and Data Sheets, manuals in the form as directed by Engineer in Charge
- iii) Issue of Certificate of Physical Completion by the Engineer-in- charge as specified in clause 8 of GCC.

### **21.2. Certificate of Final Completion**

The contract shall not be considered as completed until a Certificate of Final Completion has been issued by the Engineer-in-charge stating that the Works have been completed to his satisfaction and / rectifying of defects have been satisfactorily completed.

The composite work shall be treated as complete when all the components of the work are complete. The Certificate for Final Completion of the Composite work shall be recorded by the Engineer-in-charge after obtaining/ recording of completion certificate of all the components.

The Engineer-in-charge shall give the Certificate for Final Completion ON FULFILMENT OF FOLLOWING:

- Contractor has rectified all defects noticed by the Engineer -in -charge and as specified in the Provisional completion certificate.
- Contractor shall have removed from the premises on which the work is executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works
- Cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is executed or of which he may have had possession for the purpose of the execution.

Provided always that the issue of the Certificate of Final Completion shall be a condition precedent to payment or return to the Contractor the security deposit and/ or Performance security in accordance with the conditions set out in the contract.

22. The contractor shall give performance test of the entire work as per standards specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the tests.
23. The contractor shall maintain in perfect condition all works executed till the completion of the entire work allotted to him. Where phased handing over of completed portion of the work is required by the Engineer – in – charge, the provisions mentioned for completion of entire work will apply to each phase.

**24. Defect after completion**

**(a). General**

Any defect, shrinkage, settlement or other faults that may appear within the “Defects Liability Period” which in the opinion of the Engineer-in- charge are due to materials or workmanship not in accordance with the contract, shall be rectified as per the directions in writing of the Engineer-in- charge to the Authorized representative of the contractor within such reasonable time as shall be specified therein by the contractor, at his own cost. In case of default, the Engineer-in-charge may employ any person’s to amend and make good such defects, shrinkage, settlements or other faults and all expenses consequent thereon or incidental thereto shall be borne by the contractor. Such damages, losses and expenses shall be recoverable from the bills due or may be deducted from any money due to or that may become due to the contractor. If no amount is available to the credit of contractor, the Engineer-in-charge may recover the amount from the dues of the contractor from any other contract made by the Contractor with the Engineer-in-charge with any government/department.

**(b). Execution of work of repair etc.**

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

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

All such works shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer-in- charge, be due to the use of materials or workmanship not in accordance with the Contract, or due to neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor’s part under the Contract.

**(d). Contractor’s personnel to be at site**

During the defects liability period the contractor shall depute at least one of his authorized representative at site along with required tradesmen to attend the defects to the satisfaction of Engineer-in-charge.

**25. Works by Other Agencies**

The Engineer-in-charge reserves the right to use premises and any portion of the site for the execution of any work not included in this contract which it may desire to have carried out by other persons simultaneously, and the contractor shall allow the reasonable facilities for the execution of such work, but shall not be required to provide any plant or material

for the execution of such work except by special arrangement with the other agency. Such work shall be carried out in a manner so as not to impede the progress of the works included in the contract, the contractor shall not be responsible for any damage or delay which may happen to or occasioned by such work.

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

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

**26. Dues not paid by the Contractor**

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

**27. Urgent Repairs**

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

**28. Boreholes & Exploratory Excavation**

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

**29. Fossils, Etc.**

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

**30. Plant Temporary Works & Materials**

**(a.) Plant, etc. Exclusive use for the Works**

All Constructional Plant, Temporary Works and materials provided by the Contractor

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

**(b.) Removal of Plant etc.**

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

**31. Reports by Contractor**

(a.) The Contractor shall submit **detailed programme schedule**, indicating the duration of each item of the work, for the complete work within 15 days of award of work or as per Clause 5 of the GCC, whichever is earlier, for approval by the Engineer - in- Charge. On the basis of approved programme schedule contractor shall submit Progress Charts by the 5<sup>th</sup> day of every month.

**(b.) In case progress as scheduled in the construction programme is not achieved on the target date for stage payment due to occurrence of deviation in items or delay in execution, the programme schedule may be revised in advance as instructed by Engineer in charge and as per clause 5 of GCC.**

(c.) The Contractor shall submit Monthly Progress Report in triplicate in format approved by Engineer-in-charge. Failure to submit reports may result in holding up or delay in Payment of bills.

**(d.) Monthly Progress Photographs:-** The Contractor shall arrange at his own cost to maintain a progress record of the works by taking postcard size colour photographs (preferably digitized photographs) 6 Nos. or more per month per block as directed by the Engineer-in-charge during the construction stages and after completion shall supply three sets at no extra cost. The Contractor will be required to submit monthly reports on the progress of his work as per the format approved by the Engineer-in-charge.

(e.) The Contractor shall prepare Weekly Reports of planned and actual progress of work and subsequent week's scheduled work. These will also include material procurement status. These reports shall be submitted to the Engineer-in-charge & shall be reviewed in Weekly Co-ordination Meetings.

(f.) The Contractor shall file daily category-wise labour report to the Engineer-in- charge. The report shall indicate scheduled requirement against actual strength.

(g.) The contractor shall maintain daily weather record. Daily maximum and minimum temperature and corresponding, humidity shall be recorded and charted. Rainy days shall be recorded when the rain lasting more than one hour hampers the work. Any other inclemency in weather shall be recorded. The records shall be regularly shown to the Engineer-in-charge and his signature obtained.

**32.** Every care has been made to include all the aspects/ terms and condition in these documents. However, during execution, if any issue arises, which has not been included in these documents then standard norms / rules & regulations/ terms & conditions as prevalent in CPWD shall be followed which shall be binding on both the parties.

**33. Audit and Technical Examination**

The HITES/ Engineer-In-Charge/ Client shall have the right to cause Audit and Technical

Examination of the works and the final bills of the contractor including all supporting vouchers, abstracts, etc. to be made as per payments of the final bill and if as a result of such Audit and Technical Examination the sum is found to have been overpaid in respect of any work done by the contractor under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over payment and it shall be lawful for the Engineer-in-charge to recover the same from the Security Deposit or Performance Security of the contractor or from any dues payable to the contractor. If it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid.

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

In the case of Technical Audit, consequent upon which there is a recovery from the contractor, recovery shall be made with orders of the Engineer-in-charge whose decision shall be final. All action under this clause shall be initiated and intimated to the contractor within the period of twelve months from the date of final completion.

### **34. Operations and Maintenance Manual**

The Contractor shall provide and submit to the Engineer-in-charge with three copies of the Operation and Maintenance Instruction Manuals, as may be applicable, for the works in a durable plastic case. The arrangement of these manuals shall be as follows:

SECTION A:	Index
SECTION B:	Full set of Indexed Photographs showing all salient features of the Project.
SECTION C:	Description and details of materials, items and fittings and fixtures used for the project along with Catalogues & Addresses of the Suppliers including operation & maintenance Manuals etc.
SECTION D:	Planned maintenance instructions and dates for order replacements.
SECTION E:	List of recommended Spare parts of consumables.
SECTION F:	List of "As-Built" Drawings (related to Working/ Shop drawings)

Until the Record Drawings, prints, transparencies and manuals referred to above have been received and approved by the Engineer-in-charge, Contract shall not be considered as complete and payment of monies will be withheld until such drawings, etc. have been submitted to and approved by the Engineer-in-charge. The cost of providing such records including proper submission thereof is deemed to be included in the Contract Sum quoted by the Contractor.

### **35. Miscellaneous**

#### **(a.) Safety Regulations**

Contractor shall be fully responsible for the safety of his Employees/ Visitors / Contract Labour/ Sub-Contractors Labour. The Contractor shall provide first-aid box readily available at site. The Contractor shall provide all safety measures as per labour safety rules applicable.

**(b.) Labour Laws**

The Contractor shall strictly adhere to all labour laws prevailing in the region. The contractor shall make timely payment of wages of his labour and the wages paid to the labour shall be equal to or more than the minimum wage prevailing at the time of payment. The Contractor shall comply with all applicable labour legislation, maintain labour records including payment made to the workers and obtain license for engaging workers for the work as required under the labour laws.

**(c.) By-Laws of Statutory Authorities**

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

**(d.) Tax Deduction at Source**

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

**(e.) General Lighting and Securities**

The Contractor shall, throughout the execution, completion and remedying of the defects, provide and maintain at his own cost all lights, guards, fencing, barricading (up to 3 ms. Height approx.), warning signs and watch post, when and where necessary or directed by the Engineer-in-charge or by any duly constituted authority for the protection, safety and convenience of the workers/ public / or others.

**(f.) Delay in starting the work**

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

**(g.) Site instruction book**

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

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

**(h.) Signage**

The Contractor shall provide at his own cost, different sign boards at directed location having size as instructed by HITES indicating name of the project, and a three-D view of the project as well as the name of the Contractor and the HITES with

addresses, cost of the Project, date of start & completion, as approved by Engineer-In-Charge. The signboards should be illuminated during night.

- (i.) **Cutting of Trees:** -Permission for cutting of trees, if required, will be obtained by the Contractor from the concerned authority. HITES will provide necessary support in the matter.
- (j.) The contractor shall have adequate generators of required capacity as per site requirement as standby arrangement.
- (k.) The temporary connection for electric line and water line from local authorities shall be taken by the contractor who will bear the expenditures in this account.
- (l.) No idling charges or compensation shall be paid for idling of the contractor's labour, staff or P&M etc. on any ground or due to any reason whatsoever.
- (m.) The Contractor shall mobilize and employ sufficient resources for completion of all the works within the stipulated time period as per agreement and as indicated in the approved construction schedule. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by Engineer-in-charge.

### **36. Co-ordination Meetings**

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

### **37. Site Management:**

#### **37.1. Contractor's Working Area**

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

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

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

#### **37.2. Contractor's Temporary Structures**

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



**37.3. Contractor's Labour Camp**

The Contractor shall make arrangements at his own expense for labour camp/ accommodation for labour and staff to be employed for execution of the work and their conveyance to Site. Labour camp shall not be allowed to construct within the proposed site. No workers/ staff shall be allowed to stay within the Site except with the specific approval of the Engineer-in-charge/ HITES. Proper ID Cards shall be got approved/authorized by the contractor from the Engineer-in-charge/ HITES to authorize the Contractor's staff and workers to enter the Site.

**37.4. Water Supply & Power Supply**

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

**37.5. Infrastructure for Project Coordination & Site office**

The contractor shall, within 30 days of issue of letter of acceptance, at his own cost, provide a reasonably furnished air conditioned site office of area 50Sqm (approx.) having, a sample room, A.C meeting room, staff room along with toilets & pantry with file storage facility, brand new computer (1 No.) with Auto Cad, Broad band (1 No.) and printer (1 No.) with their consumables, a telephone.

Electricity & drinking water shall also be provided by the contractor free of cost for such period.

**37.6. Temporary Barricading**

The Contractor shall at his own expense, erect and maintain in good condition temporary barricades all around the working area as per directions of the Engineer-in-charge.

**37.7. The contractor shall make, till completion of the project arrangements for/of:**

- i. Proper pumping for removing water from the basement or elsewhere at site.
- ii. Proper security, safety, transportation, manpower, lighting arrangement for execution of works at night.
- iii. Tower crane, batching plant and others machinery, tools and tackles required for timely execution of work.
- iv. Proper barricading around site so that surrounding area is made free from disturbances. The specifications of barricading shall be got approved by Engineer-in-charge. A signage board shall be placed in the External face of barricading also as instructed by Engineer in charge.
- v. Diversion of underground services with the approval of Engineer-in- charge.

**37.8. Restriction in work areas.**

- (a). The contractor must see the site of the work, its approaches carefully before tendering, No claim of any sort shall be entertained on account of any site conditions. If any approach from main road is required or existing approach is to be improved and maintained, for cartage and materials by the contractor, the same shall be done by the contractor his own cost.
- (b). Some restrictions may be imposed by the HITES's authorities or its security staff etc., on the working and/or movement of labour, materials etc. The contractor

shall follow all such restrictions/ instructions and nothing shall be payable on this account.

- (c). In case the contractor is not permitted to erect the huts for labour at the site of work, the contractor will have to make his own arrangement to provide such accommodation elsewhere and nothing extra shall be paid on this account.
- (d). The contractor shall obtain approval of the HITES to erect the hutments for labour etc. at the site of work; denial of approval shall not affect the construction activities.
- (e). The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards such as day and night boards, speed limit boards, red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work as the site is located within the premises of a running hospital.

### **38. Compliance of Statutory Obligations and obtaining Approvals/ Completion Certificates:**

The Contractor shall comply all the statutory obligations and obtain all required clearances to implement the project without any financial repercussions to Engineer-in-charge and ensure all follow up actions with the local authorities in this respect for smooth completion of the project. The Contractor shall obtain all necessary approvals from Municipal bodies and other local bodies including, Water supply agencies, Electric Supply and inspectorate agencies, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation Department, in accordance to prevailing rules, Building Bye-Laws etc., as the case may be with related to Construction/ Completion. The responsibility of the Contractor shall include obtaining approval from local electrical inspector, water & Sewer line connection, permission for bore well and for temporary structures etc. from local Authorities.

The contractor shall assist the Engineer-in-charge to obtain all NOC, completion & Occupancy certificates from respective local bodies and other statutory authorities as under:

- i) Pollution control Board,
- ii) NOC from fire department,
- iii) Chief Electrical Inspector CEA,
- iv) State Electricity board
- v) Local Municipal authority.
- vi) Airport Authority,
- vii) Forest Department for Tree cutting etc.,
- viii) Explosive department,
- ix) Local Municipal authority for water and sewer connection,
- x) Any other statutory requirement for execution of work and to occupy the buildings and run the services in all respects.

Contractor shall organize all inspections of concerned authorities & obtain the NOC's within the time for completion. The Engineer-in-charge may, at the written

request of the Contractor, assist him in obtaining the approvals from relevant authorities. However any such request by the Contractor shall not bind the Engineer-in-charge/ HITES in any manner.

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

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

**39. Rates: -**

- 39.1. The quoted rates shall be for complete items of work i.e. inclusive of material, labour, plant and machinery, tools and tackles, batching plant etc. including water & electricity, overhead charges, all taxes, duties, statutory charges/ levies applicable from time to time and others as specified etc, incidental works and all other charges for items contingent to the work, such as, packing, forwarding, insurance, freight and delivery at Site, watch and ward of all materials & successful installation, testing & commissioning at site etc.
- 39.2. The rate of all items of work, shall, unless clearly specified otherwise include cost of all labour, materials and all other inputs required in the execution of the item, including GST and any other levies.
- 39.3. Unless otherwise specified in the schedule of quantities, the rate tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depth of the building and nothing extra shall be payable to him on any account.
- 39.4. The rates for items of work wherein cement is used are inclusive of cost for curing.
- 39.5. Royalty at the prevalent rates whenever payable shall have to be borne by the contractor on the boulders, metal, shingle, sand and bajri etc., or any other materials collected by him for the work direct to the revenue authority of the District / State Government concerned and nothing extra shall be payable on this account

## **SECTION - 2- ADDITIONAL CONDITIONS & SPECIFICATIONS**

### **(A) GENERAL- RELATING TO CIVIL, ELECTRICAL, PLUMBING & FIRE FIGHTING WORKS, etc.**

#### **1.0 General**

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

2.0 The work shall be carried out in conformity with the relevant drawings and the requirement of architectural, electrical, structural, and other specialized service drawings approved by Engineer-in-charge.

2.1 The Contractor shall make provision of hangers, sleeves, structural openings and other requirements during construction to avoid holding up progress of the construction schedule. The Contractor should ensure that the structure is designed for additional loads or cut outs. Subsequent Cutting of holes in the RCC structural members /slab shall not be allowed.

2.2 The contract items comprise of furnishing of all materials, equipment, labour & transportation etc. necessary to render the installation / item fully operational as per the intent of specifications and drawings, including any necessary adjustment or corrections. Further the installation / item shall be in conformity with local laws and manufacturer's instructions applicable.

#### **3 Contract Drawings**

3.1 **The drawings issued with the Bid are diagrammatic only and indicate the extent and general arrangement of the installation. Drawings shall not be scaled.**

3.2 The Contractor shall follow the Bid drawings for preparation of his detailed sanitary, plumbing, firefighting, Electrical & ELV etc. Shop drawings and for subsequent installation work and also cross check the drawings of other services to avoid subsequent complications in inter services. Any discrepancies observed should be immediately brought into the notice of Engineer-in-charge and clarifications obtained. No changes from approved plans shall be made without prior approval of the Engineer-in-charge.

#### **4 Shop Drawings**

4.1 The Contractor shall furnish for approval of the Engineer-in-charge three sets of detailed sanitary, plumbing, firefighting (external & internal), Pump room & Shop drawings of all equipments and materials required to complete the work as per specifications well in advance. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also the details of all related items of work of other trades. All shop drawings are to be made in accordance with latest fire safety norms and building codes.

4.2 All drawings necessary for assembly, erection, maintenance, repair and operation

of the equipment shall be furnished and different parts shall be suitably numbered for identification and ordering of spare parts.

- 4.3 For any amendments proposed by Engineer-in-charge 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 brought at Site until the Contractor has the approved Shop drawings for that particular material or equipment.
- 4.5 After approval of the drawings by the Engineer-in-charge, the Contractor shall further furnish six sets of Shop drawings for the exclusive use of and retention by the Engineer-in-charge.
- 4.6 Approval of drawings by the Engineer-in-charge shall not relieve the Contractor of any obligation to meet all the requirements of the Contract or of the correctness of his drawings. The Engineer-in-charge's approval of specific item shall not mean the approval of the assembly of which it is a component. The Contractor shall be responsible for and is to bear the cost for all alternations of the works due to discrepancies or omission in the drawings or other particulars supplied by him, whether such drawings have been approved by the Engineer-in-charge or not.
- 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-in-charge, the Contractor shall prepare composite working drawings and sections to a suitable scale not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, and it is cause for any interference with the work of other trades, he shall make all the necessary changes without extra cost.
- 4.8 All shop drawings and detail drawings will be made as per requirements of local authorities and tender drawings incorporating all latest regulations and requirements. No separate drawings will be, issued for making shop drawings.
- 4.9 Coordination drawings shall be prepared by the contractor. All services above & below false ceiling must be inserted in the latest false ceiling layout. The layout shall clearly indicate all dimensional details of various equipments/services. Sectional details must be prepared where all services coincide at many places.
- 4.10 A coordination drawing shall be prepared for external services also by inserting electrical, HVAC, water supply, drainage, firefighting, landscaping, internal roads in the site plan. Sectional details must be prepared to provide dimensional details.

## **5 Receipt and storage of materials:**

- a. Cement bags shall be stored in Godowns to be constructed by contractor at his own cost as per sketch of CPWD specifications with weather proof roofs and walls. Godown shall be provided with a single door with two locks. The keys of one lock shall remain with the authorized representatives of HITES and that of the other lock with the authorized agent of the contractor at the site of work so that the cement is removed from the godown according to the daily requirement with the knowledge of both the parties. Samples of fresh cement shall be got tested from lab. Only tested cement shall be allowed in the work, contractor shall bring cement keeping

this in view to maintain progress of the work. No request for extension of time on this account shall be entertained.

- b. The contractor shall be fully responsible for the safe custody of the materials brought at site even if the materials are under double lock system.
- c. The contractor shall construct suitable godowns – yards at the location of the site of work duly approved by the Engineer – in – charge or his authorized representative for storing all other materials so as to be safe against damage by sun, rain, dampness, theft etc. at his own cost and employ necessary watch and ward establishment at his cost.
- d. The contractor shall maintain and render proper account of all material brought by him to the site, consumed by him on the work and balance if any. In respect of steel reinforcement bars, theoretical consumption will be calculated diameter wise.

## **6 Procurement of Cement and Steel**

The procurement of Cement and Reinforcement Steel, and, their issue and consumption shall be governed as per conditions laid down hereunder.

### **6.1 Cement**

- 6.1.1 The contractor shall procure 43 grade Ordinary Portland cement conforming to IS 8112 / PortlandPozzolana Cement conforming to IS 1489 (Part I) as required in the work, from manufacturers as per list of approved makes.
- 6.1.2 In case the cement is not available from manufacturers as per list of approved makes, the tenderer may submit a list of names of cement manufacturers from which they propose to procure for use in the work or from any other reputed manufacturer having a production capacity not less than one million tonnes per annum as approved by the Engineer-in-charge.
- 6.1.3 The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially.
- 6.1.4 The supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer- in-charge to do so.
- 6.1.5 The Cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer-in-Charge.
- 6.1.6 The cement godown of the capacity to store about 2000 bags of cement or higher capacity as decided by the Engineer-in-Charge shall be constructed by the contractor at site of work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the key of other lock shall remain with the contractor. The

contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.

- 6.1.7 The contractor shall supply free of charge the cement required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.

## 6.2 Steel

- 6.2.1 Reinforcement Steel conforming to BIS specifications (latest edition) shall be procured directly from main manufacturers or their authorized dealers as per the approved list provided in the agreement. The manufacturer has to give a certificate that the material supplied is not a re-rolled product. Relevant vouchers & test certificates will be produced by the contractor. Re-rolled sections will not be allowed. Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The contractor shall take proper care to prevent direct contact between the steel and the ground/ water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per direction of the Engineer-in-charge. Steel shall also be protected, by applying a coat of neat cement slurry over the bars for which no extra payment shall be made. Test certificates for each consignment of steel shall be furnished and further tests shall be got carried out from the authorized laboratory as per the directions of Engineer-in-charge, before incorporating the materials in the work
- 6.2.2 The contractor shall procure TMT bars of Fe415/Fe415D/Fe500/Fe550/Fe550D grade (the grade as per BOQ) from manufacturers as per list of approved makes.
- 6.2.3 The grade of the steel such as Fe 415/Fe 415D/Fe 500/Fe500 D/Fe 550/ Fe 550 D or other grade (the grade as per BOQ) to be procured is to be specified as per BIS 1786-2008. The TMT bars procured from Primary producers shall conform to manufacturer's specifications.
- 6.2.4 The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
- 6.2.5 Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes such as IS 1786: 2008. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders of the Engineer-in-Charge to do so.
- 6.2.6 The steel reinforcement bars of each diameter shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.
- 6.2.7 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 6.2.8 For checking nominal mass, tensile strength, bend test, re-bend test etc.

specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10mm diameter bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10mm to 16mm diameter bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16mm diameter bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- 6.2.9 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- 6.2.10 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in Clause 10 of the General Conditions of Contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in Clause 42 of the General Conditions of Contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.
- 6.2.11 The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
- 6.2.12 Coefficient of weight i.e. the weight per unit length of the steel procured by the contractor shall be ascertained at site before using it and certified by the Engineer-In-Charge. In case weight per unit length is beyond the rolling margin as laid down in the BIS: 1786, the steel will be rejected and shall be removed from the site of work within; a weeks' time from written order of the Engineer-in-Charge to do so. In case weight per unit length is more than the standard coefficient of weight for the diameter, but is within the rolling margin, then the payment shall be made as per the standard weight per unit length, and, where the weight per unit length is lesser than the standard coefficient of weight for the diameter, but is within the rolling margin, the payment shall be restricted with respect to the actual weight per unit length of the diameter.
- 6.3 The actual issue and consumption of steel and Cement on the work shall be regulated and proper accounts maintained as provided in the Clause 10 of the General Conditions of Contract. The theoretical consumption of steel and cement shall be worked out as per procedure prescribed in Clause 42 of the General Conditions of Contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made
- 6.4 Steel and Cement brought to site and remaining unused shall not be removed from site without the written permission of the Engineer-In-Charge.
- 6.5 No payment shall be made to the contractor for any damage caused during the execution of work because of cause(s) not covered under Clause 43 of the Contract.



The damage to work will be made good by the contractor at his own cost, and no claim on this account shall be entertained.

6.6 The Contractor shall maintain safe custody of materials brought to the site. The Contractor shall also employ necessary watch and ward establishment for the work and other purposes as required at his own cost.

6.7 For Cement and Steel and other materials, as prescribed, the quantities brought at site shall be entered in the respective material at site accounts and shall be treated as issued for maintenance of daily consumption.

6.8 Records of Consumption of Cement & Steel –

- a. For the purpose of keeping a record of cement and steel received at site and consumed in works, the contractor shall maintain a properly bound register in the form approved by the Engineer-in-charge, showing columns like quantity received and used in work and balance in hand etc. The contractor's representative shall sign this register daily.
- b. The register of cement & steel shall be kept at site in the safe custody of Engineer-in-charge during progress of the work. This provision will not, however, absolve the contractor from the quality of the final product.

## **7 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 Byelaws and Regulations, then the Bye-laws and Regulations shall govern the requirement of such installation/drawings.

7.3 Indian Standards: The System / Components shall conform to relevant Indian standards wherever they exist and to the National Building Code Amended up to date.

7.4 Nothing in these Specifications shall be construed to relieve the contractor of his responsibility for the design, Manufacture and installation of equipment with all its accessories in accordance with applicable statutory regulations and safety codes in force.

## **8 Manufacturer's Instructions**

Where manufacturers have furnished specific instructions relating to the materials and equipment used, covering points not specifically mentioned in these documents, manufacturer's instructions shall be followed with the approval of Engineer-in-charge.

## **9 Training and Operating Instructions**

9.1 If required by the Engineer-in-charge, the Contractor shall at his cost, train members of the maintenance staff either at his or the subcontractor's workshop or

at such other place or places as may be considered suitable by the Engineer-in-charge.

- 9.2 Upon completion of all work and all tests, the Contractor shall furnish the necessary skilled labour and helpers for operating the entire installation for a period of fifteen (15) working days. During this period, the Contractor shall instruct and train the Engineer-in-charge/ HITES's representative(s) in operation, adjustments and maintenance of the equipment installed.
- 9.3 The Contractor shall submit to the Engineer-in-charge draft comprehensive operating instructions and maintenance schedule for all systems and equipment included in this Contract. This shall be supplemented, not substituted, by manufacturer's operating and maintenance manuals. Upon approval of the draft, the Contractor shall submit to the Engineer-in-charge four (4) complete bound sets of operating and maintenance schedules along with manufacturers printed literature.

## 10 Inspection and Testing

- 10.1 The Engineer-in-charge reserves the right to request inspection and testing at manufacturer's Works at all reasonable times during manufacture of items for this Contract.
- 10.2 The Engineer-in-charge or his authorized representative shall have full power to inspect the materials and workmanship at the Contractor's Works or at any place from which the materials or equipment is obtained. Approval by the Engineer-in-charge of any material or equipment shall in no way relieve the Contractor of his responsibility for meeting the requirements of the specifications. All incident expenditure like travelling, boarding and lodging etc. shall be borne by the contractor.
- 10.3 Routine and typical tests for the various items of equipment shall be performed at the Manufacturer's/ Contractor's Workshop in the presence of Engineer-in-charge or his authorized representative, results recorded and test certificates issued.
- 10.4 After installation has been virtually completed, the Contractor shall carry out under the direction and in the presence of the representative of the Engineer-in-charge such tests and inspections as have been specified, or as considered necessary to determine whether or not the requirements of the item, drawings and specifications have been fulfilled. In case the work does not meet the full intent of the drawings and specifications and further tests after making require changes and as considered necessary shall be done again, the Contractor shall carry them out and bear the expenses thereof. If tests fail to demonstrate the satisfactory nature of the installation or any part thereof, then no claims for the extra cost of modifications, replacement or retesting will be considered. The decision of the Engineer -in-charge shall be regarded as final as to what constitutes a satisfactory test.
- 10.5 The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere
- 10.6 The Contractor shall provide all necessary instruments such as Theodolite, Dumpy level, steel tapes, weighing machine, plumb bobs, spirit levels, hammers, micro-meters, thermometers, hydraulic cube testing machine, smoke test machine and labour, etc. for conducting tests. All such equipments shall be tested for calibration by an approved laboratory. The Contractor shall make adequate records of the test procedures, readings and results to be maintained by

the Engineer-in-charge who shall issue test certificates signed by the person authorised by him.

### **11 Test Certificates**

The contractor shall submit test certificates for all the materials / systems issued by government recognized inspection / office / manufacturer certifying the Equipment / Materials/ installation and its function are in agreement with the requirements of relevant specifications and accepted standards.

### **12 Performance Guarantee**

It is clearly understood that the specifications, drawings, schedule of quantities for firefighting system are for bidder's guidance only. The bidder shall carry out necessary calculations and provide alternative equipment required to achieve the specified level of firefighting required for human safety. Complete sets of Architectural Drawings shall be available at site in the Engineer-in-charge office and reference may be made to these drawings as required for calculations or for other details. The contractor shall also guarantee that performance of various equipments, individually, shall not be less than, the specified ratings.

### **13 Quiet Operation and Vibration**

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

### **14 Accessibility**

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

### **15 Licenses and Permits**

- i. The Contractor or the approved specialized agency engaged by them shall hold a valid plumbing, electrical, ELV, license issued by the Competent Authority under whose jurisdiction the work falls.
- ii. The contractor has to take all the approvals of local bodies for all the addition/deletion over the approved building plans which are to be given by the Engineer-in-charge. The documents/drawings to be prepared and submitted in the manner desired by them after the same is approved by Engineer-in-charge. Contractor has to take approvals of entire/Part works if required before start of works. Contractor will be responsible for any work at site carried out without approval of municipal or local bodies.
- iii. 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.
- iv. Contractor shall obtain from the competent Municipal Authority completion certificates with respect to his work as required for occupation of the building.
- v. Any fees in connection with obtaining the approvals on behalf of the HITES from the statutory bodies/Corporations/Government departments, etc. shall be paid by the

Contractor and the same shall be reimbursed on production of original vouchers. Necessary endorsement/ application if required shall be arranged from the Engineer-in-charge /HITES.

- vi. Before undertaking of works for Electrical, Anti Termite Treatment, Water proofing, Fire Fighting, Fire alarm system, PA system, telephone & data System etc., the contractor must take approval of specialized agencies proposed to be engaged by him from Engineer-in-charge.

## **16 Operation and Running of entire system**

The contractor shall ensure smooth operation & running of entire sanitary, plumbing and firefighting system including pumps and RO plant etc. for a minimum period of one month after satisfactory completion of work as desired by Engineer-in-charge. Cost of such operation & running of entire system including required material e.g. fuel, consumables, tools & tackles, requisite manpower etc. shall be borne by the contractor & deemed to be included in the contract price, nothing shall be paid on this account.

## **17 Training of Personnel**

The Contractor shall arrange to train the Client/ HITES's personnel to ensure smooth operation & running of entire works including sanitary, plumbing and firefighting system including pumps and RO plant, ELV systems, other systems etc. prior to provisional takeover of the works.

## **18 Handing over & Taking over process**

For handing over & taking over process, in addition to clauses specified elsewhere, following services / works have to be complied with by the main contractor:

- a. Submission of Guarantees in stamp paper, of appropriate value, (format approved by Engineer-in-charge) for all water proofing treatment and Anti termite treatment executed in the works for a period of ten years. If any defects noticed within 10 years from completion of defect liability period the main contractor shall be sole responsible for the defects and same shall be rectified by the main contractor as per information from Client/HITES within a period of 10 days from the notice.
- b. Rectification of all defects shall be carried out by the main contractor before Handing over/ Taking over process.
- c. As built drawings :- 3 (Three) sets for Architectural, Structural, Plumbing, Electrical, ELV system(CCTV, PA, Fire Alarm, Telephone, Data), Specialized services and other required drawings as approved by Engineer-in-charge shall be submitted by the main contractor before handing over & taking over process.
- d. All services/equipments are to be run and checked before handing over & taking over process as per requirements of Engineer-in-charge.
- e. Contractor has to arrange water, electricity, fuel, consumables and manpower at their own cost for the purpose of testing of services and equipments. Contractor has to bear the electricity charges till taking over of works. No amount shall be payable on this account.
- f. Main contractor shall submit catalogues, brochures, operation manual, manufacturer test certificate, Guaranty/ Warranty papers, license etc for all equipments /materials before handing over & taking over process.

**(B) RELATING TO CIVIL WORKS**

- (i) All concrete work will be strictly done by automatic computerized batching plant of suitable capacity installed at site or RMC as per approval of Engineer-in-Charge/ HITES. No concrete work will be permitted without automatic batching plant unless specifically approved in writing by Engineer-in-Charge / HITES. Transportation of the mix concrete shall be done through transit mixers and concrete pumped through suitable concrete pumps and pipes arrangement and vibrated by vibration machines, materials lifts shall also be provided at site as and where required.
- (ii) All operation required for continuing concreting work at the construction joints for better bond are deemed to be included in the rates of the relevant items and nothing extra shall be payable on this account.
- (iii) **Mix Design of Concrete:-** The contractor shall carry out the mix design for the relevant item of concrete from reputed institution/ laboratories as approved by Engineer-in-charge at his own expenses within 15 days from Letter of acceptance. Samples of materials (i.e. Cement, Coarse, fine aggregates& admixtures) shall be jointly sealed by Engineer-in-charge and contractor before sending the same for Mix design. The design mix may be with or without admixtures as per specifications /requirements at site.
- (iv) **Ready Mixed Concrete**
- a. The rate for the item of Ready Mixed Concrete shall be inclusive of all the ingredients including admixtures if required, labour, machine T&P etc. (except shuttering which will be measured & paid for separately) required for design mix concrete of required strength and workability.
  - b. The rate quoted by the agency shall be net & nothing extra shall be payable on account of change in quantities of concrete ingredients like cement and aggregates and admixtures etc. in the approved mix design.
- (v) Marine plywood only or steel plates of minimum thickness as approved by Engineer-in-charge shall be used for formwork. All shuttering material to be used at site will be new/ just like new as approved by Engineer-in-charge. The shuttering plates shall be cleaned and oiled after every repetition and shall be used only after obtaining approval of Engineer-in-charge's representative at site. The number of repetitions allowed for plywood and steel shuttering shall be at the discretion of Engineer-in- charge depending upon the condition of shuttering surface after each use and the decision of Engineer-in-charge in this regard shall be final and binding on the contractor. No claim whatsoever on this account shall be admissible.
- (vi) **Anti-termite treatment & waterproofing treatment:-**
- a. The treatment for water-proofing of basement, roofs, water retaining areas and termite infestation shall be of type and specifications as given in the schedule of quantities and remain fully effective for a period of not less than 10 (Ten) years to be reckoned from the date of expiring of the Defect Liability period, prescribed in the contract. At any time during the said guarantee period if the HITES/ Engineer-in-charge or his representative finds any defects in the said treatment or any evidence of re-infestation, dampness, leakage in any part of buildings or structure and notifies the contractor of the same, the contractor shall be liable to rectify the defect or give re-treatment and shall commence the work or such rectification or re-

treatment within seven days from the date of issue of such letter to him. If the contractor fails to commence such work within the stipulated period, the HITES/ Engineer-in-charge nor his representative may get the same done by another agency at the Contractor's cost and risk and the decision of the HITES/ Engineer-in-charge for the cost payable by the contractor shall be final and binding upon him. Re-treatment if required shall be attended to and carried out by the Contractor within seven days of the notice from the HITES or his representative.

- b. Water proofing and anti-termite treatment shall be got done through approved specialized agencies only with prior approval of the Engineer-in-charge or his representative. During the execution of work, if any damage shall occur to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of the HITES or his representative by the contractor at his costs and risks.
- c. The contractor shall submit a guarantee bond for the water proofing and anti-termite work executed under the contract in a format specified in the GCC. Further a security deposit amounting to 10% of the cost of these items as executed shall be retained for a period of 10 years with effect from actual date of actual completion of the work. 50% of the security deposit shall be released on successful completion of 5 years period and the balance shall be released on completion of 10 years.

## **C) RELATING TO ELECTRICAL WORKS, ELV& INSTALLATIONS**

### **1.0 General**

- i. The electrical& ELV installations shall be in total conformity with the control wiring drawings prepared by the Contractor and approved by the Engineer-in-charge & shall be connected and tested in the presence of an authorized representative of the Contractor and of the Engineer - in- Charge.
- ii. The responsibility for the sufficiency, adequacy and conformity to the Contract requirements of the electrical installation work lies solely with the Contractor.

### **2.0 Regulations and Standards**

The installations shall conform in all respects to Indian Standard Code of Practice for Electrical Wiring Installation IS: 732-1989 and as per latest CPWD General Specifications for Electrical Works, latest NBC guidelines, State electrical inspectorate guidelines, state electricity board regulations as mentioned in Schedule "F" of General Conditions of Contract. It shall also be in conformity with the current Indian Electricity Rules and regulations in so far as these are applicable to the installations. Wherever these Additional Specific Conditions call for a higher standard of material and/or workmanship than those required by any of the above regulations, then this Additional Specific Conditions shall take precedence over the said Regulation and Standards.

Fire detection & alarm system and Public address system works to be done as per latest CPWD/ NFPA / NBC specifications & BS codes.

### **3.0 Completeness of Bid**

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 Bid rates and prices, whether such items are specifically mentioned in the Bid documents or not.

### **4.0 Eligibility criteria of sub-contractor for ELV services**

**The specialized agency appointed by the Contractor to carryout ELV services shall possess authorization letter from OEM (original equipment manufacturer) to carry out the specializes systems(CCTV, fire alarm & detection, Public address, Telephone, Data etc).**

Original equipment manufacturer for above mentioned systems must submit details of similar executed works(value and volume) in Kerala, Tamilnadu& Karnataka for a minimum period of 5 years OEM must have presence in this region (Kerala, Tamilnadu, Karnataka) since last 5 years and must have service support offices in Kerala.

Main contractor shall submit performance certificates from clients regarding satisfactory operation of these systems after expiry of Defects liability Period.

Main contractor shall submit above mentioned credentials of specialized agency to be engaged for ELV works to Engineer in charge after signing of agreement.

If required main contractor shall arrange site visit to the engineer in charge at his cost in projects executed by the proposed OEM. Main contractor shall send his representative also for the site visit.

Engagement of **specialized agency** shall be confirmed after fulfilling above mentioned points.



**FORMATS FOR GUARANTEES**

**GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER SUPPLY AND SANITARY INSTALLATIONS**

**(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

The agreement made this..... Day of ..... Two thousand and ..... between ..... S/O..... (hereinafter called the GUARANTOR of the one part) and the ..... (herein after called the Client of the other part). WHEREAS THIS agreement is supplementary to the contract. (Herein after called the Contract) dated.....and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the work in the said contract recited structurally stable workmanship and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guarantee against faulty workmanship, finishing, manufacturing defects of materials and leakages etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, after the expiry of maintenance period prescribed in the contract for the minimum life of ten years, to be reckoned from the date of completion of work, to be reckoned after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer- in- charge with regard to nature and cause of defects shall be final. During the period of guarantee the guarantor shall make good all defects to the satisfaction of the Engineer- in- charge calling upon him to rectify the defects, failing which the work shall be got done by the Client by some other contractor at the guarantor’s cost and risk. The decision of the Engineer –in-charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make goods all the defects, commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage cost expense or otherwise which may be incurred by him by reason of any default on the part of THE GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Client the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WEHREOF those presents have been executed by the obligator. And ..... by for and on behalf of the Client on the day, month and year first above written.

Signed sealed and delivery by OBLIGATOR in the presence of:

- 1.
- 2.

SIGNED FOR AND ON BEHALF OF ----- BY..... in the present of:

- 1.
- 2.

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR ANTI TERMITE TREATMENT.**

**(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the \_\_\_\_\_ (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the building and structures in the said contract recited completely Anti Termite proof.

AND WHEREAS GUARANTOR hereby guarantee that the effect that the building and structures will remain completely Anti Termite proof for TEN years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that Anti Termite treatment given by him under agreement Item No. \_\_\_\_\_, will render the structure completely Anti Termite proof and the minimum life of such Anti Termite treatment given by him will render the structures completely leak proof and the minimum life of such Anti Termite treatment shall be TEN years, to be reckoned from the date of completion of work.

Provided that THE GUARANTOR shall be not responsible for leakage caused by earth quake or structural defects or misuse of Building or alteration and for such purpose:

- a. misuse of Building shall mean any operation which will Anti Termite treatment to the Building.
- b. Alteration shall mean construction of any addition or construction adjoining to existing Building whereby Anti Termite treatment is removed/damaged in parts ;
- c. The decision of the Engineer with regard to nature and cause of defects shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found to render the Anti Termite proof treatment of the building to the satisfaction of the Engineer at his cost and shall commence the work for rectification within seven days from the date of issue of the notice from the Engineer calling upon him to rectify the defects failing which the work shall be got done by the Client by some other contractor at the GUARANTORS cost and risk. The decision of the Engineer as to cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the Anti Termite treatment, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement.

As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator \_\_\_\_\_ and by \_\_\_\_\_ by for and on behalf of \_\_\_\_\_ on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF \_\_\_\_\_ BY \_\_\_\_\_ In presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR WATER PROOFING TREATMENT FOR BASEMENTS.**

**(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

The agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the \_\_\_\_\_ (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the building and structures in the said contract recited completely water and leak proof.

AND WHEREAS GUARANTOR hereby guarantee that the effect that the building and structures will remain completely water and leak proof for TEN years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him under agreement Item No. \_\_\_\_\_, will render the structure completely leak proof and the minimum life of such water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be TEN years, to be reckoned from the date of completion of work.

Provided that THE GUARANTOR shall be not responsible for leakage caused by earth quake or structural defects or misuse of Basement or alteration and for such purpose:

- a. misuse of basement shall mean any operation which will damage proofing treatment to the basement of the Building.
- b. Alteration shall mean construction of any addition or construction adjoining to existing basement whereby proofing treatment is removed in parts ;
- c. The decision of the Engineer with regard to nature and cause of defects shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer at his cost and shall commence the work for rectification within seven days from the date of issue of the notice from the Engineer calling upon him to rectify the defects failing which the work shall be got done by the Client by some other contractor at the GUARANTORS cost and risk. The decision of the Engineer as to cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement.

As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator \_\_\_\_\_ and by \_\_\_\_\_ by for and on behalf of \_\_\_\_\_ on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF \_\_\_\_\_ BY \_\_\_\_\_ In presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR WATER PROOFING TREATMENT FOR ROOF.**

**(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

The agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the \_\_\_\_\_ (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the building and structures in the said contract recited completely water and leak proof.

AND WHEREAS GUARANTOR hereby guarantee that the effect that the building and structures will remain completely water and leak proof for TEN years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him under agreement Item No....., will render the structure completely leak proof and the minimum life of such water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be TEN years, to be reckoned from the date of completion of work.

Provided that THE GUARANTOR shall be not responsible for leakage caused by earth quake or structural defects or misuse of Basement or alteration and for such purpose:

- a. misuse of roof shall mean any operation which will damage proofing treatment like chopping of fire wood and things of the same nature which might cause damage to the roof of the building.
- b. Alteration shall mean construction of any additional storey or part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts ;
- c. The decision of the Engineer with regard to nature and cause of defects shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found to render the building water proof to the satisfaction of the Engineer at his cost and shall commence the work for rectification within seven days from the date of issue of the notice from the Engineer calling upon him to rectify the defects failing which the work shall be got done by the Client by some other contractor at the GUARANTORS cost and risk. The decision of the Engineer as to cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement.

As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator \_\_\_\_\_ and by \_\_\_\_\_ by for and on behalf of \_\_\_\_\_ on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF \_\_\_\_\_ BY \_\_\_\_\_ In presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR WATER PROOFING TREATMENT  
(UNDER FLOORS).  
(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

The agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the \_\_\_\_\_ (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the toilets, terraces and such related areas of the building in the said contract recited completely water and leak proof.

AND WHEREAS GUARANTOR hereby guarantee that the effect that the said toilets, terraces and such related areas will remain completely water and leak proof for TEN years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that water proofing treatment under the floors in toilets, terraces and such related areas given by him under the contract, will render the areas completely water and leak proof and the minimum life of such water proofing treatment shall be TEN years, to be reckoned from the date of completion of work i.e. to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

Provided that THE GUARANTOR shall be not responsible for leakage caused by earth quake or structural defects or misuse of floors or alteration and for such purpose:

- a. misuse of such floors shall mean any operation which will damage proofing treatment and things of the same nature which might cause damage to the such floors of the building.
- b. Alteration shall mean construction of any addition or construction adjoining to existing such floors whereby proofing treatment is removed in parts;
- c. The decision of the Engineer with regard to nature and cause of defects shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found to render the building water proof to the satisfaction of the Engineer at his cost and shall commence the work for rectification within seven days from the date of issue of the notice from the Engineer calling upon him to rectify the defects failing which the work shall be got done by the Client by some other contractor at the GUARANTORS cost and risk. The decision of the Engineer as to cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement.

As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator \_\_\_\_\_ and by \_\_\_\_\_ by for and on behalf of \_\_\_\_\_ on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

1. \_\_\_\_\_ 2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF \_\_\_\_\_ BY \_\_\_\_\_ In presence of:

1. \_\_\_\_\_ 2. \_\_\_\_\_

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR IN RESPECT OF ALUMINIUM WORKS.**

**(On a Non- Judicial Stamp Paper of Rs. 100/- (Rupees One hundred Only)**

The agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the \_\_\_\_\_ (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the Aluminium Works in the said contract recited safe against water leakage, unsound material and workmanship and defective anodizing etc..

AND Whereas GUARANTOR agreed to give a guarantee to the effect that the Aluminium Work will remain safe against water leakage, unsound material and workmanship and defective anodizing for TEN years from the date of completion of work, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that the Aluminium Works executed by him will remain safe against water leakage, unsound material and workmanship and defective anodizing for TWO years from the date of completion of work, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

Provided that the guarantor shall not be responsible for any damage caused by earth quake or misuse of the Aluminium Work or alteration and for such purpose:

- a. misuse of the Aluminium Work shall mean any operation which will damage the Aluminium Work executed by him;
- b. Alteration shall mean construction of an addition to the Aluminium Work executed by him or part thereof or construction adjoining to the existing Aluminium Work whereby the Aluminium Work is likely to be effected/ damaged;
- c. The decision of the Engineer with regard to nature and cause of defects shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found to render the Aluminium Work to the satisfaction of the Engineer at his cost and shall commence the work for rectification within seven days from the date of issue of the notice from the Engineer calling upon him to rectify the defects failing which the work shall be got done by the Client by some other contractor at the GUARANTORS cost and risk. The decision of the Engineer as to cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator \_\_\_\_\_ and by \_\_\_\_\_ by for and on behalf of \_\_\_\_\_ on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF \_\_\_\_\_ BY \_\_\_\_\_ In presence of:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

---

---

### **SPECIAL CONDITIONS**

1. The bidder shall hold valid KSEI's license to execute similar works. He shall submit the credentials proving the eligibility to execute similar works along with tender documents.
2. The bidder shall also submit details of three similar electrical works executed recently along with tender documents.
3. If an electrical contractor having eligibility mentioned in point no.1 intends to carry out civil works of the substation building, he can employ a civil contractor provided:
  - I. The proposed civil contractor shall produce details of three similar works (RCC building in nature) executed recently.
  - II. The credentials of civil contractor shall be submitted along with tender documents.
4. If a civil contractor meeting eligibility criteria mentioned in point 3.I & 3.II, wishes to engage an electrical contractor to execute HT works of the substation, he shall submit the credentials of the proposed electrical contractor having valid KSEI's license to execute similar works. Details of three similar works shall be submitted along with tender documents.
5. Electrical contractor shall prepare cable trench / Hume pipe / equipment dimensional details and submit the same to civil contractor. Civil contractor shall submit necessary construction drawings by incorporating these details from electrical contractor.

**LIST OF APPROVED MAKES****Electrical works**

<b>Item</b>	<b>Manufactures /Agencies</b>
Unitised Substation	KEL / Resi tech / Intrans / Mega win
11kV DP structure	KSEB approved accessories
Panel boards	CPRI approved fabricator
Meters and Relays	Schneider / L&T / Siemens
Indication lamp, Selector switch, Push Button	L&T / Salzer / Kaycee,
MCCBs	Schneider /ABB/ L&T
MCBs , RCCB, Isolator, MCB Distribution board	HPL/Hager/Indo asian -optipro
Capacitor	Schneider/Epcos/Sprague
Industrial Plugs & socket	Legrand / Schneider / C&S
HT / LT cables	Polycab/Havells/Finolex
HT / LT Cable Termination kit	Raychem / M seal /Brila-3M
PVC wire-FRLS(copper)	Polycab/Havells/RR Kable/Finolex
Modular Switches	Legrand(Myrius)/Schneider(Zencelo)/MKBlenze Plus
Cable trays	OBO Bettermann/ Profab/ Ercon
PVC Conduit& Accessories	Precision/Clipsal/Avonplast
Ceiling /Wall fan/Exhaust fan	Crompton / Orient/ Usha



Light Fittings - internal	Wipro/Philips/Havells
All in one solar street light	BAJAJ 25W SOLAR BSZSL / WIPRO LR14-361-XXX-65-XX / HPL SOL25ISL12 / HAVELLS LHSTAKU7CBAF024
GI light pole	Bajaj / Wipro / Crompton
Ceiling rose /Buzzer	HPL/Anchor/ GM
Cable gland & Lugs	Jainson/Dowells/ Comet

<b>List of Approved Makes- CIVIL &amp; Plumbing Services</b>		
<b>S.No</b>	<b>Details of equipment/ material</b>	<b>Make/Manufacturer</b>
1	Adhesive for Ceramic tiles	Cico / Pidilite / BalEndura / Sikka
2	Adhesive for Wood Work	Fevicol/ Vamicol/ Dunlop
3	Aluminium Cladding Sheets	Aludecor / Armstrong / Alucobond
4	Aluminium Extrusion/ Sections	Hindalco / Jindal / Indal
5	Aluminium Fabricator	To be approved by the Engineer-in-Charge
6	Anchor Fastner	Hilti / Fischer /Bosch/ Canon
7	Anti – Termite Treatment	It should be done by permanent members of IPCA as approved by Engineer-in-Charge.
8	Automatic variable temperature control / fixed temperature control faucets	Jaquar / Parry / Angash
9	Back up rod	Supreme Industry or equivalent
10	Ball Cock	Sant / L&T/ Audco/ Gpa
11	Ball valves with floats	Zoloto / Leader / Sant / Jayco
12	Batch Mix Concrete (BMC) / Ready Mix Concrete (RMC)	The contractor to install his own computerized batching plant of suitable capacity and arrange for Transit Mixers, pumps etc. as per approval of Engineer – In- Charge. <b>OR</b> The RMC shall be procured from the source as approved by Engineer- In- Charge. RMC producing plants of the main Cement producers shall be preferred.
13	Brass stop & Bib Cock	Jaquar / Hindware / Parryware/ Crome
14	Butterfly valves	GM / Uday / Parthiv

<b>List of Approved Makes- CIVIL &amp; Plumbing Services</b>		
15	C.I. Manhole Covers	Neco/ R.I.F./ B.C./ Hepco/ SKF/ Kajeco
16	C.P. Fittings Mixer / Pillar taps/ C.P brass angle valve/ Valves Washers, C.P. brass accessories	Parko / Jaquar/ Parry ware / Hindware
17	C.P. Waste, Spreaders, Urinal	Parko /Jaquar/ Parry ware / Hindware
18	Carpet Flooring & Skirting (Floatax)	Forbo/ Polyflor/ Tarket
19	Cement	ACC/ Ultra tech/ JK Cement/ Ambuja/ India cement/ Ramco/ Dalmia/ Malabar Cement/ Birla/ Chettinad/ Cement Corporation of India
20	Cement: White	Birla White / JK
21	Clear Glass / Clear Float Glass / Toughened Glass	Modi/ Saint Gobain (SG)/ Asahi India Safety Glass Ltd
22	Cockroach Trap	Chilly/ Player/ Camry
23	Compressed Chequered tiles	Somany / Kajaria / Nitco /Orient /Johnson
24	Concrete Additive	Sikka/ CICO/ Pidilite/ Fosroc/ Fairmate/ MC Bauchemie
25	Copper Fittings (Capillary)	Yorkshire Imperial, U.K./ Rajco Metal Works Mumbai/ IBP Conex Ltd.
26	CPVC Pipes & Fittings	Supreme/ Astral/ Finolax
27	Curtain Rod/Draperly Rod	Vista work / Mac Decor
28	Dash Fasteners	Hilti / Fischer/ Bosch/ Canon
29	Disc Filter	Azud, Spain/ Amaid / Arkal,
30	Door closer / Floor spring	Everite/ Hardwyn/ Master/ Doorma (Frameless Door)
31	Door Locks	Godrej / Harrison / Link
32	Door Seal – Woolpile Weather Strip	Anand Reddiplex/ Enviroseal
33	Doors & Windows Fixtures / Fitting.	Everite/ Classic/ Crown/ Earl Bihari
34	Drainage Pumps	Grundfos/ KSB/ Salmson/ Kirloskar/ DP Holland
35	Ductile Iron Fittings (IS:9523)	Electrosteel/ Kesoram/ Tisco/ Jindal
36	Ductile Iron Pipes (IS:8329)	Electrosteel/ Kesoram/ Tisco/ Jindal
37	E.P.D.M Gaskets	Anand Reddiplex/ Enviro Seals
38	Epoxy Flooring	Fosroc/ Dr. Beck/ Flamaflor
39	False Ceiling - Calcium Silicate Boards & Tiles	India Gypsum/ Armstrong/ Aerolite/ Hilux/ Saint Gobain (Gyproc)
40	False Ceiling - Metal	Armstrong/ Hunter-Douglas/ USG/ Unimet or equivalent
41	False Ceiling - Mineral fibre	Armstrong/ Decosonic/ USG/ AMF/ Saint Gobain (Gyproc)
42	Fire rated Doors & Frames	Shakti-Hormann/ Promat

<b>List of Approved Makes- CIVIL &amp; Plumbing Services</b>		
43	Fire Rated Glass	Asahi India Safety Glass Ltd./ Modi/ Saint Gobin
44	Fire Retardant Paint	Viper FRS 881/ Nullfire/ Burger
45	Fire Seal	Sealz/ Alstroflam/ Abacus
46	Fire: Door Closures, Mortice Dead locks	Becker Fire Solution/ Inersoll Rand LCN Series/ Dorma TH Series
47	Fire: D-Type Pull Handles	Becker Fire Solution/ Dorma/ Hardwin
48	Fire: Hinges	Becker Fire Solution/ Inersoll Rand/ Dorma
49	Fire: Panic Exit Devices	Becker Fire Solution/ Inersoll Rand LCN Series/ Dorma PHA Series/ D-line
50	Fire: Tower Bolts	Suzu/ Nulite/ Dorset
51	Glass : Float & Mirror	Saint Gobain/ Asahi India Safety
52	Glass for Aluminum Doors/ Windows/ Structural Glazing	Modiguard/ Saint Gobain/ Asahi India Safety Glass Ltd.
53	Glass Wool / Insulation Boards	Rockwool/ UP Twiga/ Lloyd Insulation
54	Grab bars and Disabled Hardware	Dorma/ D-line
55	Gypsum Board / Gypsum False Ceiling/ Gypsum Partitions	Boral Gypsum/ India Gypsum/ Saint Gobain (Gyproc)
56	Hand Drier	Kopal/ Utech Systems/ Euronics Automat
57	MS Saddle with G.I. Riser	Harvel/ Alprene/ Rain Bird, USA
58	Night Latch	Godrej/ Harrison/ Link
59	OT: Conductive Tile Flooring: ESD-Control Tile Flooring	Tarkett/ Gerflor/ Armstrong
60	P.T.M.T. Fitting	Jaquar / Hindware / Parryware
61	Paints - Cement Based	Snowcem Plus/, Asian / Dulux
62	Paints - Epoxy paint	ICI Dulux/ Nerolac / Cico / Sikka / BASF / Berger / Pidilite
63	Paints - Other Paints / Primer	ICI Dulux/ Asian / Nerolac
64	Paints - Plastic Emulsion Paint	ICI Dulux/ Asian / Nerolac
65	Paints - Synthetic Enamel Paints	ICI Dulux (Gloss), Asian (Apolite),
66	Paints - Texture paint	Spectrum / Unilite Heritage /Asian
67	Plywood/Block board/Ply board	Duro/ Greenply/ Century/ Kitply/ National / Anchor/ Merino
68	Polycarbonate Sheets	Galina/ GE Plastic / / Skyarch/ Polytechno
69	Polyethylene Storage Tank	Sintex / Polycon/ Fusion
70	Powder Coating Material pure Polyester	Jotun / Berger / Goodlass Nerolac
71	Pre-coated Galvanised Steel Sheet	Tata BlueScope / Llyod Insulations India Ltd / S.R.Metals
72	Pre-Laminated Particle Board	Novapan /Century /Green Ply
73	PVC Doors	Sintex/ Polyex/ Rajshri

<b>List of Approved Makes- CIVIL &amp; Plumbing Services</b>		
74	PVC Flooring	LG Floors / Gerflor / Premier Vinyl flooring / Armstrong
75	PVC flushing cistern	Commander / Parryware / Hindware/Jaquar
76	PVC Pipes & fitting, Waste & Vent Pipes and fittings, Type B PVC Casing & Screen Pipes /CPVC pipes and Specials	Prince / Supreme / Finolex /Astrol
77	PVC Water Stops	Prince /Supreme/ Finolex /Astrol
78	R.C.C Pipes	Indian Hume Pipe / Pragati Concrete Udyog /ISI Marked Pipes/Daya/KK / JSP
79	R.O. Water Purifier Unit	Eureka Forbes/ Kent/ Zero B/ Dr. RO
80	Reinforcement Steel / Structural Steel	SAIL/ RINL/ TATA Steel Ltd./ Jindal Steel & Power Ltd./ JSW Steel Ltd./TISCO/VSP/IISCO/Vizag
81	RQRC Hydrant	Harvel/Alprene/Rain Bird, USA
82	RQRC Key	Harvel/ Aqua/ Drip& Drip
83	Sensor Operated Auto Flushing System Urinals	Jaquar /Hindware /Parryware
84	C.I. Manhole Covers	Neco /R.I.F. /Hepco /SKF / Kajeco
85	Silicon sealants /Weather Sealant / Structural Glazing Sealant	GE- Silicon / Pidilite / Forsoc
86	Sluice valve / NRV	Kirloskar/IVC/Kilburn /Zoloto/Castle/ Leader / L&T/Audco
87	Stone ware pipes & Gully Traps	Perfect / SKF/ R.K/ Hind / Anand /Burn
88	Submersible Drainage pump	Jyoti / Crompton/ Kirloskar/ KSB /Grundfos/ Mather & Platt / JS/Wilo/ITT
89	Sunken Portion Treatment	Sika / Cico, / BASF
90	Super plasticizer	CICO, Roffes Construction Chemicals, Pidilite Industries
91	Tiles: Ceramic tiles	Somany / Kajaria / Nitco / Orient-Bell / Spartek/ Johnson RAK
92	Tiles: Glazed (Ceramic) tiles	Somany / Kajaria /NITCO/ Orient-Bell
93	Tiles: Heat Resistant Terrace Tiles	Thermatek or equivalent
94	Tiles: Vitrified Tiles (Double / Multy Charged)/ Germ free	Kajaria / Nitco /Somany / Orient-Bell/ Johnson RAK
95	UPVC Pipes & fittings	Finolex / Supreme / Astral
96	Vacuum Dewatered Flooring	Tremix / Sun Build / Avcon technics
97	Valve Box	Rain Bird, /Carson Brook /Dura,
98	Veneered Particle Board	Greenply / Century / Novapan
99	VFD Pump	Jyoti / Crompton/ Kirloskar/ KSB/ Grundfos/ Mather & Platt
100	Vibration Eliminator Resisto-flex Pads & Connections	Relay Corpn./ Kanwal

<b>List of Approved Makes- CIVIL &amp; Plumbing Services</b>		
101	Vitreous China/ Sanitary ware/ WC Pan/ European WC/ Urinal/ Wash basin/ Stainless Steel Kitchen Sink/ PVC Waste Pipe/ Mirror/ PTMT waste coupling/ PTMT Towel Rail	Hindware / Parryware /Jaquar
102	Water Cooler	Blue Star/ Voltas/ Usha/ Godrej
103	Water Meter	Capstan / Kranti/ Anand/ Kant
104	Water Proofing treatment Agencies	To be approved by the Engineer-in-Charge
105	Water Proofing Materials (Bitumenistic)	BASF/ Fosroc / Sikka / CICO / Pedilite
106	Water supply pumps	KSB/ Grunfos/ Kirloskar/ Crompton/ Mather & Platt
107	Gun Metal gate valve	Leader / Kirloskar/Sant
108	Brass Ball Valve	Supreme/Finolex/Astral/Kirloskar
109	PVC Connection pipe / PVC Pipes /uPVC pipes PVC SWR pipes /Health Faucet	Supreme/Finolex/Astral
110	CP Brass long body bib cock,/Stop cock/Angel valve/PTMT Swivelling Shower / Soap Dish holder	Jaquar / Hindware /Parryware/ Crome
111	SW Gully trap	Fidvi /Supertech / Bhavya
112	RCC NP2 Pipes	Spun pipes/ Hume pipes / MCP
113	Safety foot Steps	MCP/GP/Surabh
114	PVC Floor trap	Jay / Saffron / Platinum / khodiyar
115	Centrifugal pump set	Kirloskar / DP Holland / CR pumps / Wilo

**END OF VOLUME - III**