



**युनाइटेड इंडिया इन्श्यूरेन्स कं. लि.  
UNITED INDIA INSURANCE CO.LTD**

Estates Department - Head Office,

No. 19, IV Lane, NH Road, Chennai – 600034

**REF : HOEST052223**

TENDER for

**Repair and maintenance work at Company Owned Building  
No.6, Kamalabai Street, T Nagar, Chennai 17**

**VOLUME – II**

## **A. GENERAL SPECIFICATION**

### **1. Preamble**

These specifications are intended for general description of quality and workmanship of materials and finished work. They are not intended to cover minute details. The work shall be executed in accordance with best practices.

These specifications shall have precedence in case anything contrary to this is stated anywhere in this document. The Engineer's decision shall be final on any issues arising out of such discrepancies.

These specifications shall be read in conjunction with the particular specifications for various items of work the relevant drawings, construction logic, schedule of quantities and instructions to the Contractors to ascertain in detail the type and amount of work covered under this scope. The Contractor shall carefully acquaint himself with the general specifications, coordinate the same with any other specifications forming a part of the contract document and determine his contractual obligations or the execution of various items of work in accordance with good engineering practice.

All standards, specifications, code of practice referred to are applicable and shall be considered to be a part of this specification. In case of variation and discrepancy in condition mentioned here, and in particular specifications, the Engineer's interpretation and discretion shall govern.

### **2. Scope of work**

The work to be carried out under the Contract shall consist of the various items as generally described in the Tender Documents as well as in the Bill of Quantities furnished in the Tender Documents.

The works to be performed shall also include all general works preparatory to the construction of civil, structural, architectural, water supply and sanitary works and all other related works. The work shall include work of any kind necessary for the due and satisfactory construction, completion and maintenance of the works to the intent and meaning of the drawings and these specifications and further drawings and orders that may be issued by the Engineer from time to time. The scope of work shall include compliance by the Contractor with all general conditions of contract, whether specifically mentioned or not in the various clauses of these specifications, all materials, apparatus, plant, equipment, tools, fuel, water, strutting, timbering, transport, offices, stores, workshop, staff, labour and the provision of proper and sufficient protective works, diversions, temporary fencing lighting. It shall also include safety of workers, first-aid equipment, suitable accommodation for the staff and workmen, with adequate sanitary arrangements, the effecting on maintenance of all insurances, the payment of all wages, salaries, fees, royalties, duties or other charges arising out of the erection of works and the regular clearance of rubbish, reinstatement and clearing up of the site as may be required on completion of works safety of the public and protection of the works and adjoining land, structures properties etc.

The contractor shall ensure that all actions are taken to build in quality assurance in the planning and execution of works. The quality assurance shall cover all stages of work such as setting out, selection of materials, selection of construction methods, selection of equipment and plant, deployment of personnel and supervisory staff, quality control testing, etc. The work of building in quality assurance shall be deemed to be covered in the scope of the work.

The Contractor shall furnish, at least 15 days in advance, his programme of commencement of item of work, the method of working he intends to adopt for various items of work. He shall provide information regarding the details of the method of working, and equipment he proposes to employ and satisfy the Engineer about the adequacy and safety of the same. The sole responsibility for the safety and adequacy of the method adopted by the Contractor will, however, rest on the Contractor, irrespective of any approval given by the Engineer.

### **3. Contract drawings**

The Contract Drawings provided for tendering purposes shall be as contained in the Tender Documents and shall be used as a reference and for guidance only. The Contractor should visualize the nature and type of work contemplated and to ensure that the rates and prices quoted by him in the Bill of Quantities have due consideration of the qualitative and quantitative variations, as may be found at the site and complexities of work involved during actual execution/construction.

The Contract drawings will also include any other drawings which the Engineer may issue from time to time during the currency of the contract.

“Issued for Construction” drawings will be issued to the Contractor during the progress of the work and as further data becomes available to supplement the tender drawings.

“Issued for Construction” drawings will be revised and fresh revised copies issued to the Contractor from time to time by the Engineer to adopt the work to the final designs and to suit the physical conditions encountered during the progress of the work. “Issued for Construction” drawings as issued by the Engineer shall form part of this specification. Unless otherwise specified, the plans and specifications are intended to include everything obviously requisite and necessary for the proper and entire completion of the work and accordingly the work shall be carried out completeness as required whether each item is mentioned herein or not.

It shall be understood that drawings furnished to the Contractor shall be interpreted by the use of given dimensions, and nomenclature only, and that the drawing shall not be scaled. Figured dimensions on drawings are in all cases to be accepted in preference to scaled sizes and drawings to a large scale shall take precedence over those to smaller scale drawings. In case of discrepancy the Contractor is to ask for clarification before proceeding with the work. All dimensions shall be checked on site prior to execution.

In case of difference between drawings and specifications, the specifications shall govern. Anything mentioned in the specifications, and not shown on the drawings, or shown on the drawings and not mentioned in specifications, shall be of like effect as if shown or mentioned in both.

Shop drawings consisting of such detailed drawings as are not included in the contract drawings or larger scale details of certain parts of the work indicated on the contract drawings, shall be complete and shall contain all required detailed information as may be reasonably required for satisfactory prosecution of the work.

Prior to submittal for approval, the Contractor shall be responsible for thoroughly checking all drawings whether prepared by him or by his sub-contractors to ensure that they comply with the intent and the requirements of the contract specifications, and that they fit in with the overall building layout.

Examination and/or approval by the Engineer of any drawing or other drawings or other documents submitted by the Contractor shall not relieve the Contractor of his responsibilities

or liabilities under the contract.

The approval of the drawings by the Engineer shall not be construed as a complete dimensional check, but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility for any errors or compliance with requirements of the contract plans and specifications, nor will any discrepancy between shop drawings and contract plans, and specifications constitute a basis for deviation from the requirements of the contract plans, and specifications. The Contractor shall be responsible for the dimensions and design of adequate connections, supports details and satisfactory construction of the work, any fabrication, erection setting or other work done in advance of the receipt of approved drawings shall be done entirely at the Contractor's risk. Approval of the shop drawings shall not be construed as authorising additional work or increased costs to the Owner. Adjustment in the bid price or any extension of time to cover required changes in the shop drawings to comply with the requirements of the contract specifications, shall not be permitted.

The tendered rates/prices for the work shall be deemed to include the cost of preparation, supply and delivery of all necessary drawings, prints, tracings and negatives which the contractor is required to provide in accordance with the contract.

#### **4. Site information**

The Contractor shall visit the construction site and examine himself thoroughly the site condition and satisfy himself as to the nature of the existing roads or other means of communications, the character of the soil and the excavations, the extent and magnitude of the work and facilities for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra for charges made in consequence of any misunderstanding or incorrect information on any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the Contractor in connection with obtaining information for submitting this tender including his visits to the site or efforts in compiling the tender shall be borne by the tenderer and no claims for reimbursement thereof shall be entertained.

#### **5. Setting out**

The Contractor shall set out the works. Owner will provide one permanent mark in the vicinity of the plant for reference. All further laying out work, temporary bench-mark, grid pillars etc. shall be carried out accurately by the Contractor and maintained till the end of the job.

The work of setting out shall be deemed to be a part of general works preparatory to the execution of work and no separate payment shall be made for the same.

#### **6. Materials**

The relevant standards for materials, as well as the testing procedures, have been indicated at appropriate places in the Specifications.

Materials shall be of approved quality and the best of their kind available and shall generally conform to I. S. Specifications. The Contractor shall order all the materials required for the execution of work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work.

All material brought on the site of work by Contractor meant to be used in the same, shall be

as per the specification and to the approval of the Engineer.

The Contractor shall obtain the Engineer's approval for samples of all materials to be used in the works and shall deposit these samples with him before placing an order for the materials with suppliers. The materials brought on the works, shall conform in every respect to their approved samples, fresh samples shall be deposited with Engineer whenever type or source of any material changes.

The Contractor shall check each fresh consignment of materials as it is brought to the site of works to see that they conform in all respects to the specifications of the samples approved by the Engineer, or both

The Engineer will have the option to have any of the materials tested to find out whether they are in accordance with the specification and the Contractor will bear all expenses for such testing.

Any materials that have not been found to be conform to the specification will be rejected forthwith and shall be removed from the site by the Contractor at his own cost.

The Engineer shall have power to cause the Contractor to purchase and use such materials from any particular source, as may in his opinion be necessary for the proper execution of the work.

### **6.1 Sampling and Testing of Materials**

- a) The contractor shall submit samples of such materials (before going for bulk supply, bulk supply shall be taken up after obtaining written approval of the said samples) as may be required by the consultant/ United India Insurance Company. for Quality Assurance and shall carry out the specified tests directed by the consultant/ United India Insurance Company. at the site or at the supplier's premises or at a laboratory approved by the consultant/ United India Insurance Company.
- b) Samples shall be submitted and tests carried out sufficiently early to enable further samples to be submitted and tested if required by the consultant / United India Insurance Company. for Quality Assurance.
- c) Final specifications of the building materials, to be used for renovation work, should be based on laboratory tests to ensure that they comply with the original materials.
- d) The contractor shall give the consultant / United India Insurance Company. seven days' notice in writing of the date on which any of the materials will be ready for testing or inspection. The consultant/ United India Insurance Company. shall attend the test at the appointed place within seven days of the said date on which the materials are expected to be ready for testing or inspection according to the contractor, failing which the test may proceed in his absence unless instructed by the consultant/ United India Insurance Company. to carry out such a test on a mutually agreed upon date.
- e) The contractor shall in any case submit to the consultant / United India Insurance Company. within seven days of every test such number of certified copies (not exceeding six) of the test readings as the consultant / United India Insurance Company. may require.
- f) The provisions of this clause shall also apply to materials supplied under any

nominated subcontract.

## **7. Storage of materials**

The Contractor shall store all the materials in a proper manner to avoid contamination and deterioration, at places at site approved by the Engineer and protect from sun, wind, rain or other natural causes. Should the place where material is stored by the Contractor be required by the Owner for any other purpose, the Contractor shall forthwith remove the material from that place at his own cost and clear the place for the use of the Owner.

The Contractor shall make his own arrangement for storing water, if necessary, in drum or tanks or cisterns, to the approval of the Engineer. Care shall be exercised to see that water is not contaminated in any way.

## **8. Workmanship**

The work involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the Engineer.

All works shall be true to level, plumb and square and the corners, edges and arrises in all cases shall be unbroken and neat.

Any work not to the satisfaction of the Engineer or his representative will be rejected and the same shall be rectified, or removed and replaced with work of the required standard of workmanship at no extra cost.

## **9. Standards**

- a) Detailed and Technical specifications prepared by the consultant / United India Insurance Company. has to be followed.
- b) The latest specifications, as prepared and published by Central Public Works Department, Govt. of India, shall be construed to be a part of the tender and these shall be followed only if relevant or specific specifications are not provided by consultant/ United India Insurance Company.
- c) Detailed and Technical specifications prepared by the consultant / United India Insurance Company. has to be followed in respect of all materials, workmanship.
- d) The latest specifications, as prepared and published by Central Public Works Department, Govt. of India and the consultant shall be followed for various tests to be performed and the acceptance criteria.
- e) Where Specifications are still not found, the latest provisions of National Building Code of India / Indian Standards (IS) / IRC / MORTH / CPHEEO shall hold good.
- f) The requirement of these specifications shall be fulfilled by the Contractor within his tendered rates. The items quoted shall be deemed to have taken these specifications into account.
- g) At the request of client, the contractor has to provide a certificate stating that the materials supplied comply in all respects with the standard;

the contractor shall obtain the certificate and forward it to the Project Manager.

- h) If no standard is indicated, the relevant Indian Standard, if any, shall apply. In case of discrepancy between the Technical Specification and the Standards referred to herein, the Technical Specification shall govern.

#### **10. Managing Work yard**

- a) Managing lime mortar on site as per the direction of project consultant/ engineer in charge.
- b) Cleaning and proper storage of tools & equipment at the end of the day.
- c) Storing of raw materials at the end of each day.
- d) Cleaning of site and disposal of construction waste and removal of tools.
- e) Lock/ Block all points of entry after working hours.
- f) Ensure adequate safety of labours on site is taken care of. Provide for protective goggles, gloves, gum boots, safety belt, hard hat/ helmet, etc.
- g) Adequate precautions for electrical and flammable equipments should be ensured.
- h) Where ever required, keep a fire extinguisher on site.
- i) Ensure a first aid kit is always available on site.
- j) Site order book should be maintained and followed by the contractor/site supervisor. This document will contain all the instructions given by the consultant / Engineer in charge.

#### **11.PRECAUTIONS AND PROTECTIVE MEASURES BEFORE STARTING DEMOLITION WORK**

The following precautions and protective measures shall be taken before commencement of demolition work:

- 11.1 On every demolition job, danger signals shall be conspicuously posted all around the structure and all doors, openings giving access to structures shall be kept barricaded or manned except during the actual passage of workmen or equipment. However, provision shall be made for at least two independent exits for escape of workmen during any emergency.
- 11.2 Walkways and passageways shall be provided for the use of the workmen who shall be instructed to use them and all such walkways and passageways shall be kept adequately lighted, free from all debris and other materials.

- 11.3 Where in any work of demolition it is imperative, because of existing danger, to ensure that no unauthorized person shall enter the site of demolition outside working hours, a watchman shall be employed. In addition to watching the site he shall also be responsible for maintaining all signs, notices, lights, barricades, etc.
- 11.4 During nights, red lights shall be placed on or about the barricades.
- 11.5 The power on all electrical service lines shall be shutoff and all such lines cut nor disconnected at or outside the property line. The only exception would be any powerlines required for the demolition work itself. Prior to cutting of such lines, the necessary approval of the Authority shall be obtained.
- 11.6 All mains and meters of the building shall be removed or protected from damage.
- 11.7 All gas, water, steam and other service lines shall be shutoff and capped or otherwise controlled at or outside the property line.
- 11.8 If a structure to be demolished has been partially wrecked by fire, explosion or other catastrophe, the walls and damaged roofs shall be shored and braced suitably.
- 11.9 Construction sheds and tool boxes should be so located as to protect workers from injuries of falling objects, wall, etc.
- 11.10 A warning device should be installed in the area to be used to warn the workers, in case of danger.
- 11.11 Screens shall be placed, where necessary, to prevent flying pieces from injuring the fellow workmen.
- 11.12 No demolition work shall be carried out during storm or heavy rain.
- 11.13 No demolition work shall be carried out at night specially when the building or structure to be demolished in an inhabited area.
- 11.14 All necessary safety appliances shall be issued to the workmen and their use explained. It shall be ensured that the workers are using all the safety appliances while at work.
- 11.15 The safety appliances should be as follows:
- a) Goggles made of celluloid lens to be worn at the time of demolition of floors, walls, tearing of plaster, etc, especially when equipment like jack hammers are used for demolition work, to protect the eyes from flying pieces, dust, dirt, etc, that may be blown up by wind.
  - b) Leather or rubber gloves worn during demolition of RCC work or removing steel work, where the hands of workers are likely to be injured.
  - c) Safety belts while working at higher level to prevent falling from the structure.
- 11.16 First-aid equipment shall be available at all demolition works of any magnitude. Also, by prior arrangement, a qualified doctor be available at call.
- 11.17 When there is a possibility of fire breaking out, appropriate portable first-aid fire appliances (see IS 2 190: 1992) shall be kept at hand.



- 11.18 The removal of a member may weaken the side wall of an adjoining structure and to prevent possible damage, these walls shall be supported until such time as permanent protection is provided. In case of any danger is anticipated to the adjoining structure, the same shall be got vacated to avoid any danger to human life.
- 11.19 Ladders, when used, shall conform to IS 3696 (Part 2): 1991. Ladders or their side rails shall extend not less than 1 m above the floor or platform to which the ladder gives access. All ladders shall be secured against slipping out at the bottom and against movement in any direction at the top.
- 11.20 All exterior wall openings which extend down to the floor level shall be barricaded to a height not less than 1 m above the floor level. All floor openings and shafts not meant as material chutes shall be floored over and endorsed with ground rails and toe boards.
- 11.21 All existing fixtures/services required during demolition operations shall be well protected with substantial covering to the satisfaction of the Authority.
- 11.22 For the safety of all labour directly or indirectly employed in the work the contractors shall, in addition to the provision of CPWD safety code and directions of the Engineer-in Charge, make all arrangements to provide facility as per the provision of Indian Standard Specifications (Codes) listed below & nothing extra shall be paid on this account.

1.	IS 3696 Part I	Safety Code for scaffolds and ladders.
2.	IS 3696 Part II	Safety Code for scaffolds and ladders Part II ladders.
3.	IS 764	Safety Code for excavation work.
4.	IS 4138	Safety Code for working in compressed air.
5.	IS 7293	Safety Code for working with construction machinery.
6.	IS 7969	Safety Code for storage and handling of building materials.
7.	IS 4130	Safety code for demolition of buildings.

## **B. GENERAL SPECIFICATION FOR MATERIAL**

All material required for the works shall be procured and supplied by the contractor himself. The material shall be of good quality and conforming to relevant BIS. The materials which are classified for ISI marking should be supplied with ISI marking only.

### **1. Cement**

1.1 The entire quantity of cement and steel required for the work will be procured by the contractor. The contractor is responsible for all transport and storage of the material and shall bear all related cost. The employer shall be entitled at any reasonable time to examine the cement and steel supplied by the contractor.

1.2 The cement procured by the contractor shall comply with the requirements of IS 269/1976 with the latest revision thereof for ordinary Portland cement and IS 3112/1989 with

the latest revision thereof for 43 grade ordinary Portland cement. It shall be of the best normal setting quality unless specially rapid hardening or quick setting quality if expressly instructed by the Engineer to be supplied. Each bag shall bear ISI certification mark and as per specification no.10. of TNBP volume I.

1.3 The steel bars shall comply with the requirements set forth in the IS 432 part I, IS 1139, IS 1786 as the case may be with the latest revision thereof and the test as described for ultimate tensile strength bond test and elongation test.

All reinforcing steel shall be clean and free from oil, grease, loose scales or rust or other coatings of any character which would reduce or destroy the bond. Each bundle containing the bars shall bear the ISI certification mark.

1.4 All cement / steel shall be tested in nearby laboratories of Government Polytechnic, or Government engineering college or Regional Testing Laboratory by the Employer. Two samples should be taken by the Engineer in charge in the presence of the contractor or his authorized representatives or the technical personnel employed by the contractor as in the agreement. The contractor shall without extra cost provide samples and cooperate in the testing of the cement/steel. One sample shall be got tested and the other sample shall be retained by making clear identification in the sample by the Engineer in charge so as to identify at a later date. The cost of such test shall be borne by the contractor.

1.5 All cement shall be procured in bags and shall be stored in a dry place for which the contractor shall be responsible. Consignment of bagged cement shall be properly stacked in a manner which will permit easy access for inspection and definite identification. Cement shall be used in approximately in the chronological order in which it is received, but cement that has been stored for a period longer than 4 months from the date of initial sampling shall not be used unless it has been retested at the expenses of the contractor and passed by the Engineer in charge as good quality on the retest. Cement aged more than 180 days from the date of initial sampling shall be rejected.

1.6 Cement which has become caked or perished shall on no account be used on the works and shall be rejected. Although the engineer may have passed any consignment, he shall however have the power at the subsequent time to reject such consignment if he finds that any deterioration in the quality thereon has taken place.

1.7 A record of the quantity of cement/steel procured with the name of dealer till number and date shall be maintained by the contractor. This should be produced for examination by the Engineer in charge at any time. The age of the cement shall be reckoned from the date of manufacture and it shall be verified by the Engineer in charge.

1.8 The rejected consignment of cement and steel should be removed from the site within two days.

The water used in making and curing of concrete, mortar and grout shall be free from objectionable quantities of silt, organic matter, injurious amounts of oils, acids, salts, and other impurities etc., as per I.S. specification No.456-1978.

The Engineer-in-Charge will determine whether or not such quantities of impurities are

objectionable.

Such determination will usually be made by comparison of compressive strength, water requirement, time of set and other properties of concrete made with distilled or very clean water and concrete made with the water proposed for use. Permissible limits for solids when tested in accordance with I.S. 3025-1964 shall be as tabulated below.

**Permissible limit for Solids:**

	<b>Maximum permissible limit</b>
1. Organic	200 mg / litre
2. Inorganic	3000 mg / litre
3. Sulphates (as SO <sub>4</sub> )	500 mg / litre
4. Chlorides (as CL)	2000 mg / litre for plain concrete work and 1000 mg / litre for R.C.C. work
5. Suspended matter	2000 mg / litre

If any water to be used in concrete, mortar or grout is suspected by the Engineer-in-Charge of exceeding the permissible limits of solids, samples of water will be obtained and tested by the Aggregates

2.1 Sand shall generally conform to the grading of sand given in clause 4 of I.S.2116-1189 as detailed below in Table 4(b).

**Table 4(b):** Grading of Sand for use in Masonry Mortars:

<b>I.S. Sieve Designation</b>	<b>Percentage passing by Mass</b>
4.75 mm	100
2.36 mm	90 to 100
1.18 mm	70 to 100
600 Micron	40 to 100
300 Micron	5 to 70
150 Micron	0 to 15

2.2 A sand whose grading falls out-side the specified limits due to excess or deficiency of coarse or fine particles may be processed to comply with the standard by screening through

a suitably sized sieve and/or blending with required quantities of suitable size and particles.

2.3 The cost of sand for masonry will not be measured and paid separately and the cost of sand including the cost of stripping, transporting and storing and royalty charges shall be included in the unit price per cubic meter bid therefore in the relevant item of work in the bill of quantities for which this and is required.

2.4 The maximum quantities of deleterious material in the aggregates, as determined in accordance with IS 2386 (part II)/1963 shall not exceed the limits given in table I of IS 383. Unless otherwise specified all coarse aggregate in RCC shall be graded aggregate of 20mm nominal size. All aggregates shall be stored in hard impervious surface to ensure exclusion of all foreign material and as per IS 4082/1977 and specification no.5 of TNBP volume I.

2.5 Aggregates having a specific gravity below 2.6 (saturated surface dry basis) shall not be used without the special permission of the Engineer.

## **2. Admixtures**

Only where a beneficial effect is produced shall any admixture be used and that too after test has been carried out to convince the Engineer that no harmful effect will be produced by the use of such admixture and after approval by the Engineer. The admixture shall conform to IS 9103/1972.

## **3. Form work and centering**

Steel/wooden form centering shall be used. If wooden form work is used, it shall consist of planks not less than 40mm thick and strong props. This shall be provided with clause 10 of IS 456/2000 and specification no.30.8 of TNBP. The timber for form works shall be best hard wood and got approved by the Engineer in charge. This shall be deemed to be included in the items of contract even otherwise specified.

## **4. Separator (cover block)**

For bottom cover of beams, slabs etc., separators of pre-cast cement mortar blocks of suitable size with wire embedment as directed shall be used and tied to the reinforcement. Between layers of reinforcements, separators consisting of pieces of bars of suitable diameters shall be used. The required cover shall be provided as per clause 24-4 of IS 456/2000

# **CIVIL WORKS**

## **1. General :**

1.1 Tamilnadu Building Practice (TNBP) shall be strictly followed for carrying out different items of work for which no standard specifications are available, and no alternate specification have been given under the description of works.

1.2 Where any provision of the TNBP is repugnant or at variance with any provision under

BIS or description of work, technical specifications and conditions of contract, the provisions of the latter shall be deemed to supercede the provision of the TNBP.

## **2. Earthwork:**

### **2.1 Specification**

Tamil Nadu Detailed Building Practice (specification no.23 to the extent applicable) shall be followed for earthwork excavation.

### **2.2 Conveyance:**

The excavated earth, blasted rubble etc., shall be conveyed and deposited in suitable places as directed by Engineer in charge within 150m of plant site on one side of the trench only.

### **2.3 Disposal of surplus earth:**

The excavated soil which is surplus to that required for refilling and after allowing for settlement will have to be removed, spread and sectioned at places shown on the site during execution for purpose of widening or leveling the road. Sectioning is to be done as detailed in TNBP. The cost of removal of surplus earth after spreading/leveling/sectioning at site approved by the Engineer in charge to the disposal site will be measured under the relevant item of work in BOQ.

### **2.4 Shoring, Strutting and Bailing out water**

The rate for excavation of trench work shall include charges of bailing out water wherever necessary and no extra payment will be made for any of these contingent works. While bailing out water, care should be taken to see that the bailed out water is properly channelized to flow away without stagnation or inundating the adjoining road surfaces and properties.

For shoring and strutting, the rate for excavation for the first 2m depth from GL shall include. Shoring and strutting beyond 2m depth from GL, payment will be made as per respective item in BOQ.

## **3. Concrete:**

### **3.1 Specification**

Concrete for use in the works shall generally comply with TNBP (specification no.30) and the relevant BIS. The concrete mix shall be in specified proportions satisfying the maximum aggregate size, water cement ratio and required cube strength and workability as per IS 456-2000. Such concrete must be adequately vibrated to form solid mass without voids. The entire concreting works should be done only with the prior approval and the presence of Engineer in charge.

### **3.2 Mixing of concrete**

The concrete shall be proportioned as far as cement and aggregate are considered by

volume. The amount of water required being measured either by weight or volume the adjustments must be made to frequent intervals at the discretion of the Engineer or his assistant to account for the moisture content of the aggregates. The mixing operation shall be performed only in a mechanical concrete mixer and shall continue until the whole batch of uniform consistency and colour. The mixing of concrete shall be done in accordance with clause 8 and 9 of IS 456-2000.

### **3.3 Transporting, Placing and Compacting Concrete**

3.3.1 Transportation, placing and compaction of concrete mix by mechanical vibrators shall be done in accordance with clause 12 or IS 456-2000. It is imperative that all concreting operations be done rapidly and efficiently with minimum re-handling and adequate manpower shall therefore be employed to ensure this.

3.3.2 The forms shall be first cleaned and moistened before placing concrete.

3.3.3 The mix should not be dropped from such a height as it may cause segregations and air entrainment. When the mix is placed in position, no further water shall be added to provide easier workability.

3.3.4 No concrete mix shall be used for the work if it has been left for a period exceeding its initial setting time before being deposited and vibrated into its final position in the member.

3.3.5 While one concrete is being placed in position it shall be provided generally complying with clause 12.4 of IS 456-2000 and as directed by the Engineer in charge. The efficiency of tempering and consolidation will be judged by complete absence of air pockets, voids and honey combing after removal of form works.

### **3.4 Curing**

3.4.1 Curing shall be done to avoid excess shrinkage or harmful effect to the members generally complying with clause 12.5 of IS 456-2000.

3.4.2 The method adopted shall be effective and any special method used must be approved by the Engineer and be subject to complete supervision.

3.4.3 Any deficiency in concreting such as cracking, excessive honey combing, exposure of reinforcement or other fault which entail replacement of the defective part by fresh concrete and whatsoever remedy reasonable required without hampering the structural safety and architectural concept, all at the cost of contractor.

### **3.5 Removal of Form Work.**

3.5.1 Removal of form work shall be done as per TNDSS and as per IS 456-2000 and as directed by the Engineer in such a manner that no damage is caused to the concrete work.

### **3.6 Testing of concrete**

3.6.1 During the course of construction works, preparation of test specimens, curing and casting of concrete shall be done in accordance with IS 1199 and IS 516 to ascertain the

strength requirements and acceptance criteria indicated in IS 456-2000. The contractor shall provide all apparatus, labour and arrange to test the cubes at his own cost at the test laboratory decided by the Employer.

3.6.2 In addition to the above test, any other test which may if desired by the Engineer in charge be carried out from time to time as per relevant specifications at the cost of contractor. In case the concrete does not meet the strength required, all corrective measures shall be taken at once at the contractor's cost.

3.6.3 The inspection and testing of structures shall be done in accordance with clause 16 of IS 456-2000.

## **C. GENERAL CONDITIONS OF CONTRACT**

### **I. PREFACE**

Intent and reference to Tamil Nadu Building Practice

#### **1. It is intended by this Tamil Nadu Practice to describe.**

(a) the character of the materials to be used;

(b) the method of execution of work and

(c) the contractor's responsibilities to the Public, Government and his workmen and general contract conditions which are to be accepted by every contractor who executes work entrusted to him by the Department.

1.1 Wherever the term "Standard Specifications" or "Specifications" or to the abbreviation T.N.B.P. No: or TNBP is used in the specifications or in estimates or contract documents, it shall refer to the relevant, specification in the Tamil Nadu Building Practice.

1.2 The. Abbreviation "I.S." shall mean "Indian Standard-".

#### **2. Applicability of the Tamil Nadu Building Practice.**

2.1 It shall be unnecessary to include in any contract documents a specification for any item of work which is defined in the tender notice or in the contract schedule of work to be done by a Tamil Nadu Building Practice number (TNBP No.) The fact that the item is defined as specification, shall mean that the contractor is to execute the work according at such specification modified as may be necessary by an addendum specification for that particular item of work. In the absence of specification for any work or material in the T.N.B.P. such. work should have carried out in accordance with the instruction given by the Client engineer.

2.2 THESE GENERAL CONDITIONS OF CONTRACT SHALL APPLY TO ALL AGREEMENTS ENTERED INTO BY CONTRACTORS WITH THE MANAGING

DIRECTOR TIRUPPUR and shall form an inseparable condition of contract, and it shall not be necessary to append a copy of the same to the agreement.

**3. Contractor to sign in the Division (or the sub-Divisional) copy of the T.N.B.P.**

- 3.1 Every contractor who executes work for the Public Works Department or the Highways Board and Rural Works Department shall carefully study the schedule for work to be done and his drawings, obligation under the "General Conditions of Contract" which apply to all agreements, and he shall sign in the Municipality copy of the T.N.B.P. (or the Sub-Divisional copy if so arranged by the Client engineer) as evidence that he understands clearly the conditions of contract governing his agreement and accepts the same. It shall not be necessary for the contractors to sign the Municipality copy of the T.N.B.P. for every contract awarded to him, but his signature therein will be evidence that he accepts the conditions of contract (which include the standard specifications) as detailed in the T.N.B.P. for every contract into which he enters. It shall also be the contractor's responsibility by frequent perusal of the Municipality copy to become conversant with sanctioned alterations or additions made to the T.N.B.P. as soon as they are made. A separate volume of addenda to the T.N.B.P. will be maintained in the Municipality as the case may be in which will be entered all sanctioned corrections and additions. This must also be studied and signed by every contractor before executing an agreement. Interleaving correction slips will not be made for his purpose. The contractor should purchase copy of, the T.N.B.P. for his reference while executing work.

**4. Sub-specifications:**

- 4.1 Works of similar nature having many common clauses in their specification are grouped under one specification number with a "General" preface thereto, and the sub-specification are therefore given an alphabetical affix.

**5. Additions and alterations to the T.N.B.P.**

- 5.1 Additions and alterations to the T.N.B.P. will be incorporated in the addenda volume as authorized by the Chief Engineer.

**6. Powers of Client engineers to supplement or alter the T.N.B.P.**

- 6.1 Client engineer may alter the specification for any particular which is within their respective powers of sanction, when such alteration is found necessary by attachment of a correction sheet to the contract form, bearing the T.N.B.P. Number, the corrections and the signature of the Client engineer as the case may be, together with the signature of the contractor. Similarly, additional specifications, for items for which there are no standard specifications will be made by attachment to the contract documents of addendum specifications sheet bearing the signature of the Client engineer as the case may be and the signature of the contractor.

**II. DEFINITIONS AND INTERPRETATIONS.**

**1. Definition of terms:**



1.1 Wherever the words and expression defined in this clause or pronouns used in their status occur in contract documents which includes the T.N.B.P, they shall have the meanings hereby assigned to them except where the context otherwise requires:

(a) "Client engineer" means the Client engineer for the time being in charge of the concerned work under execution or such other departmental assistants or subordinates to whom the Client engineer may have delegated certain duties, acting severally within the scope of the particular duty entrusted to them.

(b) No delegation by Client engineer which affects agreements. It is however, to be distinctly understood that the Client engineer or the higher authority who is vested with the powers of acceptance of the particular agreement under reference will make no delegation of powers to such assistants or subordinates which in any affects the agreement and its contract condition when such agreement is to be or has been accepted by the "Client engineer" or by the other higher authority respectively- The duties of such assistants or subordinates will be solely duties of supervision to ensure compliance with contract conditions.

(c) "Contractor" means the particulars persons, firm or corporation with whom an agreement has been made by the Client engineer or higher authority as the case be, for executing work defined in the concerned agreement, and for purposes of instructions regarding compliance with contract conditions, it shall include the contractor's authorized agent, who is maintained on the work by the contractor.

(d) Works or work means the works by or by virtue of-the contractor contracted to the executed whether temporary or permanent and whether original, altered substituted or carriage or additional or connected, with the supply repairs or carriage of tools and plant and supply or manufacture of other stores.'

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

2. **Evidence of experience** -Tenderer shall, if required, present satisfactory evidence to the Client engineer that they have been regularly engaged in constructing such works, as the proposed to execute and that they are fully prepared with the necessary capital, machinery and materials to begin the work promptly and to conduct it as required by the T.N.B.P. and the other specifications for the particular work If tendered for, in the event of their tender being accepted,

3. **Legal address Notices:**

3.1 Tenderers should give in their tender their place of residence and postal address. The delivering at the above named place or posting in a post box regularly maintained by the Post Office Department or sending by loiter registered for acknowledgement of any notice, letter or other communication to the contractor shall be deemed sufficient service thereof upon the contractor is writing as maybe changed at any time by an instrument executed by the contractor, and delivered to the Client engineer.

3.2 Nothing contained in the agreement and his contract conditions shall be deemed  
10 prejudice render inoperative the service of any notice, letter or other  
communications upon the contractor personally.

## STATEMENT OF APPROXIMATE QUANTITIES IN SCHEDULE - A

1. The quantities mentioned in tender notices and in agreement schedule A are worked out from the relevant drawings in office and may or may not be the actual required for execution. The Client engineer does not expressly or by implication agrees that the actual amount of work to be done will correspond therewith but reserves the right to increase or decrease the quantity of any class or portion of the work as he deems necessary.
2. Tenderer must satisfy themselves by a personal examination of the site of the proposed work by examination of the plans and specifications and by other means as they prefer as to the accuracy and sufficiency of the statement of quantities and all conditions affecting the work and shall not any time after the submission of their tender, dispute or complain of such statement of quantities or assert, that there was any misunderstanding in regard to the nature or amount of the work to be done nor in consequences apply for extension of time for completion beyond the agreement date.

### **3. Approximate not to mean deviation from drawings and specifications:**

- 3.1 This declaration of the approximate nature of the statement of quantities in Schedule. A does not, however, in any way imply that the quantities will be increased for departure by the contractor from strict compliance with sanctioned drawings and specifications to suit his own convenience or reduce his costs.

### **4. To compare tenders:**

The quantities in Schedule A are given for a uniform comparison of lump-sum tenders.

## III. DRAWINGS AND SPECIFICATIONS

### **1. Purpose:**

- 1.1 The contract drawings if any, read together with the contract specifications are intended to show and explain the manner of executing the work and to indicate the type and class of materials to be used.

### **2. Conformance:**

- 2.1 The works shall be carried out in accordance with the drawings and specifications which form part of the contract and in accordance with the details and instructions, supplementing or explaining the same as may from time to time be given by the Client engineer.

2.2 If the work shown on any such further drawings or details, or other work necessary to comply with any such instructions, directions or explanations be in the opinion of the contractor, of a nature which the schedule rate in the contract does not legitimately cover he shall before proceeding with such work, give notice in writing to this effect to the Client engineer. In the event of the Client engineer and contractor failing to agree as to whether or not there is any excess rate to be fixed and the Client engineer deciding that the contractor is to carry out the said work, the contractor shall accordingly do so, and the question whether or not there is any excess and if so the amount there of, shall failing agreement, be settled by an arbitrator as provided in the arbitration clause, unless the subject is one which is left to the sole discretion of the Client engineer under the clauses of these conditions of contract and the contractor shall be paid accordingly.

2.3 It shall be the responsibility of the contractor to give timely notice to the Client engineer regarding anything shown on the drawings and not mentioned in the specification, or mentioned-in the specifications and not shown in the drawings or any error or discrepancy" drawings or specifications and obtain his orders thereon. Figure dimensions are to be taken and not those obtained from scaling the drawings. In any discrepancy between drawings and specifications, the latter shall prevail. In any such cases or in case any feature of the work is not fully described and set forth with the drawings and specifications the contractor shall forthwith apply to the Client engineer for such further instructions, drawings or specifications as he requires it, being understood that the subject to be dealt with under the building procedure of best modern practice. The Client engineer will furnish the further instructions, drawings or specifications if in his opinion; they are required by competent workmen, for the proper execution of the work.

### **3. Variations by way of modifications omission or additions.**

3.1 For all modifications, omissions from or additions to the drawings and specifications, the Client engineer will issue revised plans, or written instructions or both, and no modifications, omissions of additions shall be made unless or authorized and directed by the Client engineer in writing.

3.2 The Client engineer shall have the privilege of ordering modifications, omissions or additions at any time before the completion of the work and such orders shall not operate to annul these portions of the specifications with which said changes do not conflict.

3.3 The contractor shall submit to the Client engineer a statement giving details of the claims for any additional work with 30 days of the order of the work and no claim for any such work will be considered which has not been included in the statement.

#### **4. Copies of drawings and specifications:**

4.1 One copy of the available drawings and specifications (apart from the T.N.B.P. a copy of reference) shall be furnished free of cost to the contractor for his own use. Such copies and copies of supplementary details furnished by the Client engineer shall be kept by the contractor on the work until the completion thereof, and the Client engineer shall at all times have access to them.

#### **5. Signed drawings -No authority to the contractor.**

5.1 No signed drawing shall be taken as in itself and order for variation, unless either is it entered in the agreement schedule of drawings under proper attestation of the contractor and the Client engineer, or unless it has been sent to the contractor by the Client engineer, with a covering letter confirming that the drawing is an authority for variation of the contract under reference.

### **IV. MATERIALS AND WORKMANSHIP**

#### **1. To be the best quality:**

1.1 All materials, articles and workmanship shall be the best of their respective kind for the class of work described in the contract specification and schedule, materials being obtained from sources approved by the Client engineer. The word "best" as used in these specifications shall mean, that in the opinion of the Client engineer there is no other superior quality of materials or finish of articles on the market and that there is no better class of workmanship available for the nature of the particular item described in the contract schedule. The contractor shall, upon the request of the Client engineer, furnish him with the vouchers to prove that the materials are such as are specified.

1.2 Samples of materials shall be furnished at the contractor's expenses to the Client engineer when called for in the tender notice or ordered to be furnished by the Client engineer prior to execution of any work.

#### **2. Conventions for proportions:**

2.1 Wherever the proportions are written by figures without further description and where the meaning is otherwise clear as to which figure is intended to apply to each material, then the usual conventions will be understood to apply to each material then the usual conventions will be understood to apply.

#### **For example:**

1.2. Means 1 lime (or cement in accordance with the context) and 2 sand;

1.2.4. Means 1 lime (or cement in accordance with the context) 2 sand and 4 broken stone (or other aggregate in accordance with the context).

### **3. Measurement and mixing:**

**3.1** In the case of loose materials such as lime sand, cement, broken stone, surki, mortar, etc the proportions demanded by the specifications must be measured in properly constructed measuring boxes or weighed or in such other manner as shall be instructed by the Client engineer. Measurement is not to be done in loose heaps when intimate mixtures such as mortar, concrete, etc., are to be formed. The mixing must always be done on closely constructed platforms. So that there will be no leakage of 'any of the materials through the floor of the platform and also that no foreign materials can be incorporated during the mixing. These platforms must be approved by the Client engineer. The cost of such measuring boxes and platforms and all the work referred to herein shall be borne by the contractor.

### **4. Data:**

**4.1** The materials and labour utilized in the execution of work by the contractor shall not be less than that given in the Tamil Nadu P.W.D. Standard Data for the relevant item.

**NOTE:** In case the contractor considers that the materials and labour provided in the T.N.P.W.D. standard data for the execution of particular items of work are in excess, the contractor may furnish detailed data for such items along with tender with reason for variations from P.W.D. Standard Data.

### **5. Layout of materials stocks:**

**5.1** The contractor shall deposit materials for the purpose of the work on such parts only on the ground as may be approved by the Client engineer. He shall submit for the approval of the Client engineer before starting work, a detailed site survey clearly indicating positions and areas where materials shall be stacked and sheds built.

### **6. Source of purchase of materials and stores**

**6.1** The Client engineer shall, during the progress of the work, have power to cause the contractor to purchase and use such materials or supplies from Government brick fields, stores or other sources as may be specified in the contract for the purposes therein specified.

### **7. Contractor liable for materials supplied by Government.**

**7.1** The contractor shall be responsible for all materials and other articles and things which may be supplied by Government from the time he takes delivery thereof, and shall use them only for the purposes of this contract and shall make good any loss, damage, wastage or undue wear and tear that may take place from whatever cause and pay to Government for such loss, damage, wastage or undue wear and tear such sum as the Client engineer may determine.

**7.2** If at any time subsequent to the execution of the agreement Government materials other than those specified in the Agreement are to be supplied to the contractor for use on the work, they will be charged at the market value prevailing at the time of supply or stock issue rate whichever is greater. The contractor will be informed in writing the rate which he demands for finished work in view of the fact that he is to use Government materials.

### **7.3 Storage charges**

Govt. do not undertake to take over from contractors whether before or after the completion or determination of contract surplus materials which were originally procured by the contractors themselves or were issued to them and charged to their accounts. Such materials are the property of the contractor and can be taken over by Govt. if required for use on the works in progress only by special arrangement at the prevailing market rates viz., the rate at which the article or articles of a similar description can be procured at a given time at the stores Godown from public market suitable to the division for obtaining a supply therefore of the materials were originally supplied by the Govt. Price allowed to the contractors on requisition should not exceed the amount charged to the contractors excluding the element of storage charges if any. Contractors are however not at liberty to remove from the site of work, without the written permission of the Managing Director, materials, which have been issued to them for use on works.

## **8. Test inspection and rejection of defective materials and works: -**

**8.1** The contractor shall provide proper facilities at all for the testing of materials and inspection of the work by the Client engineer, and the Client engineer shall accordingly also have access at all times to the places of storage or manufacture where materials are being made for use under the contract to determine that manufacture is proceeding in accordance with the drawings and specifications.

**8.2** The contractor shall, upon demand, also forward for the Client engineer's inspection, test certificate supplied by the vendors, when he is purchasing consignments of cement, steel and other materials in respect of which such certificates are usually available.

**8.3** The Client engineer shall have power to reject at any stage, any work which he considers to be defective in quality of material or workmanship and he shall not be debarred from rejecting rough materials by reasons of his having previously passed them in an unworked condition. Any portion of the work or materials rejected or pronounced to be inferior or not in accordance with the drawings and specifications, shall be taken down and removed from the work site at the contractor's expense, within 24 hours after written instructions to that effect have been given by the Client engineer. Replacement shall at once be made in accordance with the specifications and drawings at the contractor's expense.

**8.4** In case of default on the part of the contractor to carry out such orders the Client engineer shall have power to employ and pay. Other persons to carry out the orders at the contractor's risk and all expenses consequent thereon and incidental thereto shall be borne by the contractor.

**8.5** In lieu of rejecting work not done in accordance with the contract, the Client engineer may allow such work to remain and in that case shall make such allowance for the difference in value, as in his opinion may be reasonable.

**8.6** Works opened for inspection The Contractor shall at the request of the Client engineer within such time as the Client engineer shall name open for inspection any work covered up; and should the contractor refuse or neglect to comply with such a request, the Client engineer may employ other workmen to open up the same. If the said work has been covered up in contravention of the Client engineer's instructions or if on being opened up, it be found not in accordance with drawing and specifications of the written instructions of the Client engineer the expenses of opening it and covering it up again, whether done by the contract or such other workmen, shall be borne by. or recovered from the contractors. If the work has not been covered up in contravention of such instructions or if on being opened up it be found i.e. he in accordance with the drawings and specifications or the written instructions of the Client engineer, the expenses aforesaid shall be borne by Government and shall be added to the contract sum. provided always that in the case of foundations, or any other urgent works so opened up and requiring immediate attention the Client engineer shall, within reasonable time after the receipt of a notice from the contractor that the work has been opened, make or cause the inspection thereof to be made, and at the expiration of such time if such inspection shall not have been made, the contractor may cover up the same, and shall not be required to open it up again inspection except at the expense of Government.

## **9. Defects, shrinkages, etc., after completion.**

**9.1** Any defects, shrinkage or which may appear within from the corn pie works arising in the opinion of the Client engineer from faulty materials or workmanship not in accordance with the drawings and specification instructions of the Client engineer shall open the directions in writing of the Client engineer and within such reasonable time as shall be specified therein, be amended and made good by the contractor at his own cost unless the Client engineer shall decide that the contractor ought to be paid for the same at the rates agreed on such reduced or other rates as the Client engineer may fix and in case of default, the Client engineer may employ (and pay other persons to amend and make good such defects, shrinkage or other faults or damage. and all expenses consequent thereon and incidental thereto shall be borne by the contractor.



9.2 Provided that in the event of Government taking over portions of the works as and when they are completed the liability of the contractor under this clause shall extend to a period of years from the date of final taking over of the work irrespective of the actual dates on which portions the works were taken over,

**10. Client engineer's decision:**

**10.1** To prevent disputes and litigation, it shall be accepted as an inseparable part of the contract that in matters regarding materials workmanship, removal of improper work, interpretation of the contract drawings and contract specifications, mode of procedure and the carrying out of the work, the decision of the Client engineer shall be final and binding on the contractor and in any technical question which they arise touching the contract the Client engineer's decision shall be final and conclusive.

**11. Dismissal of Workmen:**

**11.1** The contractor shall employ in and about execution of the works only such persons as are careful, skilled and experience in their several trades and callings and the Client engineer shall be at liberty to object to and request the contractor to remove from the works any person employed by the contractor in or about the execution of the workshops in the opinion of the Client engineer misconducts himself or incompetent or negligent in the proper performance of his duties and such persons shall not be again employed upon the works without the permission of the Client engineer.

**V. GENERAL OBLIBATIONS**

**1. Contractor's mistri or agent and contractor's staff:**

**1.1** The contractor shall in his own absence keep constantly on the works a competent mastery or agent and any directions or explanations given by the Client engineer or his representatives to suet" mastery or agent shall be held to have been given to the contractor.

**1.2** The contractor shall further provide all staff which necessary for the proper supervision, execution and measurement of the work to ensure full compliance with the term of the contract.

## **2. Government misteries or agents:**

- 2.1 The Government may be represented on the work by an agent clerk of the works, or mastery who is not borne on the Official or officers and subordinates of the Regional Executive. He (if appointed) shall, in the absence of the Client engineer, furnish the contractor with the Client engineer's or his representative's instructions of the works and the contractor shall duly comply with such instructions and directions and shall on the written requisition of the mastery Clerk of works or agent, stay the-further progress of any portion of the works which in his judgment is being constructed with unsound or improper mastery or workmanship, until the opinion and determination of the Client engineer shall be obtained thereon, but such mastery, clerk of works or agent is to have no power whether to order any extra works or deviation from the specification and drawings.

## **VI. INCLUDED IN CONTRACT RATES**

### **1. Defining contract schedule rates:**

The rate entered in a contract schedule for any class of work shall be for finished work in site and shall include all contingent expenses whether direct construction expense involved in the building in place in accordance with the drawings and specifications or whether they be expenses imposed by an outside authority such as a local body. Such contingent expenses snail not entitles the contractor to claim an extra in respect thereof.

### **2. CARRIAGE.**

2.1 Rate's for finished work shall always include the cost of conveyance and all leads, lifts, loading, unloading and stacking in the manner and at the place ordered by the officer in immediate charge of the work, unless circumstances necessitate provisions for a separate schedule item, in which class such will be specified in the tender notice or schedule.

2.2 Wherever the term "Carriage" or "Conveyance" is used in a schedule item, it shall in the absence of other schedule provisions or modifying description, in the specification, be taken to include all leads, lifts, loading, unloading and stacking in uniform stocks to the satisfaction of the Client engineer with careful attention to close packing in casa of materials which are to be measured in stacks as a basis of payment for finished work.

**NOTE- 1.** In the case of important leads and lifts as may occur in river conservancy and other such works, where lifts over flood banks and long leads may be involved, it is usual to make separate schedule item provision with a specification defining the exact work to be done for each tendered rate.

**NOTE - 2.** Payment for carriage will originally be by bulk or weight at a rate between specified places and on the basis of the method adopted in the standard schedule of rates for carriage of materials. The distances will be measured by the nearest practicable arid cheapest routes, whether metaled or unmetalled road or cart track.

- 2.3 when carts or vehicles of any sort are engaged by the day, the quantity of materials to be conveyed, the distance to be travelled and the number of trips to be made shall, if he considers necessary be fixed by the Client engineer.
- 2.4 The contractor is responsible for making good all loss in transporting materials entrusted to him or his agents, whether caused by wastage, breakage, theft or any other cause.
- 2.5 No payment shall in any case be made on the return trips with carts. Where there are loads also for the return trips the agreement rates should allow for the reduced cost thereby on each set of materials so conveyed,

### **3. Construction plant.**

- 3.1 The contractor shall include in his tendered price and shall provide and install all necessary construction plant and shall use such methods and appliances for the performances the operations connected with the work embraced under the contract as will secure a satisfactory quality of work and rate of progress which, in the opinion of the Client engineer will ensure the completion of the work within the time specified. If at any time before the commencement, during the progress of the work or any part of it such methods or appliances appear to the Client engineer to be insufficient or inappropriate for securing the quality of the work required or the said rates of progress, he may order the contractors to increase their efficiency or to improve their character, and the contractor shall comply with such orders, but the failure of the Client engineer to demand such increase of efficiency or improvement shall not relieve the contractor from his obligation to secure the quality of work and the rate of progress required by the contract and the contractor alone shall be responsible for the efficiency and safety of his plant, appliances and methods.
- 3.2 It is however open to the Client engineer to lend or supply to the contractor any tools, implement materials and machinery that the Client engineer may consider desirable but for any such tools, implements materials and machinery that may be lent or supplied to contractor by Government the contractor shall may be so lent or hired to the contractor shall be the Regional Executive Engineer before the final bill or work is paid and any shortage or damage shall be such rate as may be determined by the Regional Executive Engineer after making such allowance as he may consider suitable for fair wear and tear.

### **4 Scaffolding instructions:**

- 4.1 All requisite scaffolding shall be provided at the contractor's expense and shall be double, i.e. it must have two sets of upright supports care must be taken to ensure the safety of the work people and the contractor must comply with such instructions as the Client engineer may issue to ensure safety. The contractor will be entirely responsible for any damage or injuries to persons or property resulting from ill erected scaffolding, defective ladders, or otherwise arising out of his default in this respect. The contractor's attention is also invited to the "safety code".

## **5 Temporary structure:**

5.1 The contractor shall erect and maintain at his own cost temporary weather proof sheds at such places and in a manner approved by the Client engineer for keeping materials under cover. The contractor shall also provide and maintain at his own expenses such temporary fences, guards, bridges and roads as may be necessary for the execution of his contract work or for safeguarding or accommodating the public if the Client engineer shall order any departure he shall comply with such orders as the Client engineer may issue to safeguard or accommodate the public, sheds for housing workmen shall be provided at the contractor's expenses if, in the opinion of the Client engineer, such are necessary or desirable.

## **6 Water and lighting**

6.1 The contractor shall pay all fees and provide water and light as required from Regional Executive mains or other sources and shall pay all charges therefore (including storage tanks, meters, etc.) for the use of the work and workmen unless otherwise arranged and decided on, in writing with the Client engineer. The water for the works shall be, so far as practicable, free from earthy vegetable, or organic matter and from salts or other substances likely to interfere with the setting mortar otherwise proved harmful to the work

## **7 Sun protection keeping dry and pumping**

7.1 The contractor shall at his own expense arrange all requisite protection of the work and materials against sun or rain effects and shall keep all portion of the work free from water to the satisfaction of the Client engineer and shall use his own plant for the purpose unless otherwise specifically provided in the contract specification.

## **8 Tools and Seigniorage:**

8.1 The contractor shall, unless otherwise specifically stated in the tender notice and subsequently on this basis in the contract be responsible for the payment wherever payable of all import duties, tools octroi duties, seignior ages, quarry fees, etc., on all materials and articles that he may use.

8.2 The contractor shall be solely responsible for the payment of sales tax under the provision of the payment of sales tax under provision of the payment Sales Tax Act, 1939 (Madras Act IX of 1939 as in force for time being and the rates for the various items of the work shall remain unaffected by any change that may be made from time to time in the rate at such tax is payable.

8.3 Notwithstanding anything contained in section 10 of the Indian Traffic Act of 1894. the rates for items involving, the use or supply of articles obtained by the contractor from outside India shall remain unaffected by any changes that may be introduced in Customs duties.

**NOTE:** For works carried out on behalf of the Government of India, Seigniorage fees. etc., referred to in this clause will have to be levied in every case

8.4 No Seigniorage shall be charged where due for materials quarried, from the P.W.D. or other Government quarries. Assistance as necessary will be given to the contractor by the department to obtain access to quarries approved by the Client engineer. No plot rent shall be charged for materials stacked on the Government land during the course of construction provided all such materials are removed within one month after the work is completed.

8.5 Seigniorage charges due for use of private quarries and private land shall be paid by the contractor.

8.6 The contractor shall from his own approach road to the work site for which no extra will be due to him. On completion the contractor shall not be permitted to remove the materials laid for formation of road. If the contractor is allowed to use the existing roads he shall maintain them in good condition at his own cost throughout the period of the contract.

## **9 Setting out works:**

9.1 The contractor shall be responsible for the true and proper setting out of works and for the correctness of the position, levels, dimension and alignment of all parts of the works and for the provision of all materials, staff and labour in connection therewith.

## **10 Cleaning up during progress and delivery:**

10.1 All rubbish shall be burnt or removed from the site, as it accumulates. All floors, stairs, landing windows, surface and soil drains shall be cleaned down and put in a thoroughly complete clean, sound and workman like state to the satisfaction of the Client engineer having first been removed by the contractor. The contractor shall give notice in writing to the Client engineer before the work is finally handed over all rubbish and surplus materials not required by the Client engineer having first been removed by the contractor. The contractor shall give notice in writing to the Client engineer when the work is so ready to be handed over and shall be responsible for its maintenance until it is taken over by the Client engineer.

## **VII. RESPONSIBILITIES AND LIABILITIES OF THE CONTRACTORS.**

### **1. Observance of laws, focal regulations and notices. Attachments:**

1.1 The contractors shall conform to the regulations and by-laws of any local authority and or of any water or lighting companies with those systems the structure is proposed to be connected and shall, before making any variations from the drawings or specification that may be necessitated by so conforming, given to the Client engineer written notice, specifying the variations proposed to be made and the reasons for making them, and apply for instructions thereon. In case the contractor shall not receive such instruction within seven days. he shall proceed with the work conforming to the provisions regulating or by-law in question and any variations in the drawings or specification so necessitated shall be dealt with under clause.

1.2 The contractor shall give all notices required by the said Act, regulation or by-laws and pay all fees in connection therewith unless otherwise arranged and decided on in writing with the Client engineer. He shall also ensure that no attachments are made against materials of work forming part of or for the use of the contract. In every case referred to in this clause the contractor shall protect and indemnify Government against any claim or liability arising from or based on the violation, of any such law ordinance, regulations order, degree, a attachment whether by himself or by his employees.

## **2. Accidents - Hoarding - Lighting observation - Watchmen**

2.1 When excavation have been made or obstacles have been put in public thorough fare or in places where there are any likelihood d accidents, the contractor shall comply with any requirement of law or the subject and shall provide suitable hoarding and watchmen necessary.

2.2 It shall be the contractor's sole responsibility to protect the public and his employees against accident from any cause and he shall indemnify Government against and claims for 'damages for injury to person a property, resulting from any such a claim and shall where the provisions of the Workmen's Compensation Act apply, take step to properly insure against any claims there under.

2.3 On the occurrence of accident which results in the death of any of the workmen employed by the contractor or which is so seriousness as to the likely to result in the death of any such workmen, the contractor shall, within 24 hours of the happening of such accident, intimate in writing to the concerned section officer of the Department the fact of such accident. The contractor shall indemnify Government against al loss or damage sustained by Government resulting, directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties of fines if any payable by Government as a consequence of Government's failure to give notice under the Workmen's Compensation Act or otherwise conform to the provisions of the said Act in regard to such accident.

2.4 In the event of an accident in respect of which compensation may become payable under the Workmen's Compensation Act VIII of 1923 whether by the contractor or by the Government as principal it shall be lawful for the Client engineer to retain out of money due and payable to tile Contractor such sum or sums of money as may, in the opinion of The Client engineer shall be final in regard to all matters arising under, this clause.

2.5 The contractor shall indemnify Government from and against all claims and proceedings for or on account of infringement of any patent rights, design, trade mark, or name of other protected rights in respect of any constructional plant, machine work or material used for or in connection with the works or temporary works, or any of them and from and against all claims, demands, proceedings, damages, cost, charges and expenses whatsoever in respect thereof in relation thereto.

2.6 In respect of all labour directly or indirectly employed in the works for the

performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules framed by the Government from time to time for the provision of health and sanitary arrangements to workers employed by P.W.D. and Highways and Rural Works Department and their contractors Vide Appendix. In case the contractor fails to make arrangements and provide necessary facilities as aforesaid the Client engineer shall be at liberty to make arrangements and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

2.7 In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor at his own expense shall arrange for the safety provisions as per "Safety Code" framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangements and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

2.8 In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement the contractor shall arrange to furnish in triplicate particulars to each working the Performa Vide Appendix XXXVIII b) the end of every month to the Client engineer in charge of the work.

### **3. Blasting**

3.1 Blasting executed by contractors in connection with Government works shall be carried out in the manner described under "Blasting operations Instructions to Contractor of the TNBP.

4. The contractor is to protect the whole of the adjoining and where necessary, the existing premises and all works and all fittings to all buildings or an adjoining the site against the structural and decorative damages caused by the execution of these works and make good in all respects all such damage done or occurring to the same, and leave such reinstatement in perfect order. He is also to make good any damage done to private footways or roadways.

### **5. Permit other Workmen Co-operation Afford facilities**

5.1 The Client engineer shall have full power to send workmen upon the premises to execute fittings and other works not included in the contract for whose operations the contractor is to afford every reasonable facility during ordinary working hours, provided that such operations shall be carried on in such a manner as not to impede the progress of the work included in the contract, but the contractor is not to be responsible for any damage which may happen to or be occasioned by any such fittings or other works, provided he complies with the Client engineer's instructions in connection therewith, and provided that the damage is not caused by himself or his workmen.

5.2 The contractor shall, at all times, cooperate, assist, attention, and afford facilities

for such specialists as may be employed by the Client engineer on other works in connection with the building, allowing them free of charge the use of all plant, light and water installed in the works. The contractor shall cause such special work or protect it as instructed to avoid injury during progress of the works. For failure so to protect, the contractor must make good any damage caused.

5.3 When two or more contractors are engaged on installation or construction work in the same vicinity, the Client engineer shall have authority to direct the manner in which each shall conduct the work so far as it affects other contractors.:

## **6. Holes for water services, gas, electrical and sanitary fittings**

6.1 The contractor shall leave all holes in masonry and floors for the insertion of water services, gas and electrical connections and sanitary fittings in the exact positions indicated by the Client engineer during the progress of the work. These holes must be properly built up in a workman like manner at the contractor's cost, as soon as the fittings have been installed in cases, where the installations as made during the construction of the buildings and where in the opinion of the Client engineer, delays in settlement of accounts will not thereby occur.

## **7. Contractor's risk and insurance**

7.1 The work executed by the contractor under the contract shall be maintained at the contractor's risk until the work is taken over by the Client engineer. The Govt. should not be liable to pay for any. loss or damages occasioned by (or) arising out of fire, flood, volcanic eruptions, earth quake or other convulsion of nature and all other natural calamities, risks arising out of acts of God during such period and that the option whether to take Insurance coverage or not to cover risks, is left to the contractor.

7.2 Provided however, that the contractor, shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, hostilities or warlike operations (before or after declaration of war) rebellion military or usurped power.

## **8. Holidays**

8.1 Subject to any provision to the contrary contained in the contract none of the permanent work shall save as herein after provided be carried on during the night or on Sundays and other holidays without the permission in writing of the Client engineer or of the officer in charge of the work: save when the work is unavoidable or absolutely necessary for the save of life or property or for the safety of the works in which case the contractor shall immediately advice the Client engineer.

# **VIII. MISCELLANEOUS**

## **1. Sand and gravel**

The contractor shall not make any excavations upon the site for the purpose of



obtaining gravel, sand or soil other than that shown or implied by the drawings, except with the previous permission of the Client engineer.

## **2. Old curiosities**

All old curiosities, relics, coins, minerals, etc., found in excavating or pulling down, shall be the property of the Government and. be handed over to the Client engineer. Should any ancient masonry, or other old work of interest be opened up, the Client engineer's attention shall be called to the same before demolition or removal.

## **3. Assignment or sub - lettings**

The contractor shall not without the written consent of the Client engineer, assign the contract nor sub-let any portion of the same. Ordinarily no subletting will be permitted, but in case such should be permitted by the Client engineer, it shall in no way free the contractor from any of his responsibilities under any clause of these "Conditions of Contract" or of the "Articles of agreement".

## **4. Specialties**

The Client engineer, shall, during the progress of the work have powers to select, -nominate or recommend tradesmen or specialists to supply material or execute such portion of the work as he may consider desirable in the interests of the Government.

## **5. Ratification of the orders of the Client engineer**

Should the acceptance of the tenders be beyond the authorized powers of the Client engineer as laid down in the P.W.D. code, the orders and decisions of such Client engineer with regard to the employment of specialists for certain portion of the work as described in the previous clause will be subject to the ratification of the higher authority who accept the tender.

## **6. Powers for sanction of Extension of time**

Should the acceptance of tender beyond the authorized powers of the Client engineer as laid down in TN P.W.D. code, the orders or decisions of such Client engineers with regard to the extension of time for completing the contract will be subject to the ratification of Chief Engineer for all works for which tenders were accepted by the Chief Engineer.

## **7. Powers for termination of LS contract.**

Should the acceptance of tender beyond the authorized powers of the Client engineers laid down in TN P.W.D. code, the orders and decision of such Client engineers with regard to the termination of contract will be subject to ratification of the Chief Engineer for all works for which tenders were accepted by Chief Engineer.

## **8. Order Book.**

An order book shall be kept at the Regional Executive office on the site of the work. As far as possible, all orders regarding the work are to be entered in this book. All entries shall be signed and dated by the Regional Executive officer in direct charge of the work and by the contractor or by his representative. In important cases, the Client engineer will countersign the entries, which have been made. The order book shall not be removed from the work except with the written permission of the Client engineer.

No photographs of the site or of the work of any part thereof shall be taken except with the permission in writing of the Client engineer and no such photographs shall be published or otherwise circulated without the permission, of the Chief Engineer.

## **IX. DATE OF COMMENCEMENT, COMPLETION, DELAYS, EXTENSION, SUSPENSION OF WORK AND FORFEITURE.**

### **1. Date of Commencement and completion**

On notification of possession of the site (or premises) being given to the contractor by letter registered for acknowledgement as provided in clause 9.1. supra, he shall forthwith begin the work, shall regularly and continuously proceed with them, and shall complete the same (except for painting or other work which in the opinion of the Client engineer, it may be desirable to delay) by the date of completion, as defined in the "Articles of Agreement subject nevertheless to the provisions of extension of time mentioned in the next clause. The contractor shall under no circumstances be entitled to claim any damages from Government if he incurs any expenses or liabilities to payment under the contract before the date of commencement defined above. The contractor shall have the right to withdraw from the contract and obtain refund of his security deposit if such intimation of handing over the site is delayed by more than two months from the date of acceptance of the agreement by competent authority.

### **2. Delays and extension of time**

2.1 No claim for compensation on account of delays or hindrances to the work from any because whatever shall lie except as hereinafter defined.

2.2 Reasonable extension of time will be allowed by the Client engineer or by the officer competent to sanction the extension for unavoidable delays, such as may result from causes which in the opinion of the Client engineer are undoubtedly beyond the control of the contractor. The Client engineer shall assess the period of delay of hindrance caused by any written instruction issued by him at twenty-five percent in excess of the actual working period so lost. If at any time the Client engineer is of the opinion that there have been avoidable delays and the contractor fails to maintain the "rate" of progress specified in the article of agreement, it shall be lawful for the Client engineer to impose penalty or order forfeiture from the Deposit sanction the extension of time for such delays, provided however, the penalty and forfeiture shall be governed as per clause 51.2 and 51.3.

- 2.3 In the event of the Client engineer failing to issue necessary instructions and thereby causing delay and hindrance) the contractor the latter shall have the right to claim an assessment of such delay by the Client engineer of the Office. The contractor shall lodge in writing to the Client engineer a statement of claim for any delay hindrance referred to above within fourteen days from its commencement, otherwise no extension of time will be allowed.
- 2.4 Whenever, authorized alterations or additions made during the progress of the work are of such nature in the opinion of the Client engineer as to justify 8" extension of time in consequence thereof, such extension of time will be granted in writing by the Client engineer or other competent authority when ordering such alteration or additions.
- 3 Delays in commencement or progress or neglect of work or suspension of works by the **contractor** and forfeiture of Earnest Money, Security Deposit and withheld amount.
- 3.1 Time shall be considered as the essence of the contract. If at any time the Client engineer, shall be of the opinion that the contractor is delaying commencement of the work, neglecting or delaying the progress of work as defined in the tabular statement... Rate of Progress in the Article of Agreement or the contractor fails to maintain the Rate of Progress in the Articles of Agreement plus any CA tension of time or the contractor shall suspend the works. or sublet the work or a portion thereof without the sanction of the Client engineer or violates any of the provisions of the contract the Client engineer shall so advise the contractor and at the same time demand compliance. If the contractor neglects to comply with such demand within seven days after receipt of such notice, it shall then or at any time be lawful for the Client engineer to impose a penalty or forfeiture on this contractor from the deposit or to determine the contract.
- 3.2 The penalty or forfeiture referred to in Clause 57.1. shall not exceed 10% of the work executed and is imposed in cases where the contractor is allowed to proceed with the whole or part and complete the whole or such part of the works. The penalty or forfeiture imposed by the Client engineer under this clause is however subject to modification or waiver at the absolute discretion of any authority higher in rank than the Client engineer.
- 3.3 It shall be a further right of the Client engineer to give any part of the work to any other contractor at his discretion or have it done departmentally in order to maintain the rate progress and the contract shall then be determined for only that portion of the work given to the contractor or done departmentally. The forfeiture under clause 57.2. will in these circumstances be applied any excess expenditure incurred on this account shall be recovered from the original contractor.
- 3.4 Determination of the contract referred to in Clause 47." shall carry with it the forfeiture at the Security [deposit. After determining the contract, the Client engineer shall have the right to give any part of the work to any other contractor in the unexecuted portion of contract, in which case any expenses which may be incurred in excess of such amount which would have been paid to the original

contractor if the whole work had been executed deducted from any money due to him by Government under this contract or any other account whatsoever. Provided, also that if the expenses incurred by the Government are less than the amount payable to the contractor at his agreed rates the difference will not be paid to the contractor.

3.5 In the event of any of the above clauses being adopted by the Client engineer, the contractor shall have no compensation for any loss sustained by him reason of his having purchased or processed any materials or entered into any engagements or made any advances on account or with a view to the execution of the work at the performance of contract, and in case action is taken under any of the provisions aforesaid, the contractor shall not be entitled to be paid any sum for any work actually performed under the contract unless and until the Client engineer has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

3.6 In the event of the Client engineer putting in force all or any of the powers vested in him under clause 57.4. he may if he so desires after giving a notice in writing to the contractor take possession of the works, and site and such plants and materials thereon (or any ground contiguous thereto) and all such plant and materials as above mentioned shall thereupon be at the disposal of Government absolutely for the purpose of completing the work. After such notices shall have been given, the contractor shall not be at liberty to remove from the site or works or from the ground contiguous thereto any plant or materials belonging to him which shall have been placed thereon for the purpose of the above work. Government shall not be liable to make any payment to the contractor on account of use of such plant for the completion of the works, under the provisions herein before contained. On taking possession of the materials and stores belonging to the contractor or procured by the contractor and intended to be used for the execution of the work or any part thereof the contractor rates to be certified there of shall be final.

Otherwise, the Government may give notice in writing to the contractor to remove any of his plant or materials from the site and not required or any completion of the works, if such plant and or materials are not removed within fourteen days after notice, shall have been so given, Government may remove and sell the same, holding the proceeds less the cost of removal and sale, to the credit of the contractor. The expense, of any such removal and the amount of the proceeds and expense of any such sale. shall be final and binding on the contractor.

## **X. PARTICULARS OF PAYMENT**

### **1. Payment of lump sum basis or by final measurement at unit prices:**

1.1 Final measurements need not be taken unless either the contractor or the Client engineer claims extras to or deductions from, the quantities of Schedule A,

1.2 In case final measurements are claimed, they shall be taken only for those items for which either the contractor or the Client engineer claims final measurements and the quantities of the remaining items in Schedule. A shall be accepted as correct. The lump sum amount mentioned in the agreement will then be varied by adding thereto or deducting there from as the case may be, the difference if any between the amounts mentioned in Schedule A for such items and the amounts arrived at by calculation at contract rates based on the revised quantities for the same, obtained by the final measurements aforesaid.

1.3 It shall be accepted as a condition of the contract that the payment of the final bill to the contractor less the withheld amounts and his acceptance thereof shall constitute a full and absolute release of Government from all further claims by the contractor under the contract.

## **2 Payment for additions and deductions for omissions.**

2.1 No authorized variation shall vitiate the contract, but additions and omissions shall be measured up and dealt with in accordance with clause

2.2 If there is no rate in Schedule 'A' for additional work ordered to be carried out by the Client engineer, when prior to execution of the additional work, shall be worked out in accordance with the methods indicated in 59.3 and with the rate agreed upon a supplemental agreement shall be entered in the proper department's form signed and dated by the contractor and the Client engineer and or any other officer for the time being authorised to accept such agreement and supplemental agreement shall on such acceptance form part of the original agreement. A copy of the supplemental slip shall be given to the contractor.

2.3 The rate for additional works shall be derived from the rate for similar items of work in the accepted agreement,

2.4 In the case of works for which supplemental agreement is to be entered into during the period when the schedule of rates has not changed from the date of execution of the original agreement, then the rates for supplemental agreements may be the prevailing schedule of rates plus or minus tender premium in case the rates cannot be derived from the items in the original agreement, in other case where the schedule of rates has change in the intervening period, the rates prevailing as per the schedule of rates at the time of execution of supplemental items will be adopted with no tender premium over this rate.

2.5 If the rate for a particular item of work is not in the schedule of rates, the prevailing market rates when the work was done shall be adopted.

2.6 If the rates cannot be determined as above, the rates shall be fixed on the cost of labour and materials plus 10 percent thereon, provided the vouchers shall have been delivered to the Client engineer within 7 days after such work is completed. if the Client engineer considers that the vouchers are unduly high, the Client engineer can evaluate work as reasonable and fair and make payment if the value of payment is less than Rs. 1,000. If the value of additional payment

exceeds Rs. 1,000 the contractor shall have the right to submit the matter to arbitration.

2.7 In cases where the Government under the terms of the contract with the contractor are liable to supply and materials, articles or things to the contractor for the performance of his part of the contract, the Client engineer, may at his absolute discretion extend the time which such materials, articles or things may be supplied by the Government and the Government may supply to the contractor such materials, articles or things within the time so extended without any liability on their part to compensate the contractor by reason of the extension of time for the supply of the materials, articles or things.

2.8 In cases where the Government under the terms of the Contract are liable to supply any materials, articles or things to the contractor for the performance by him of his part of the contract and the Government for any reason are unable to supply such materials, articles or things either within the time specified in the contract or within the time extended under clause 59.A. the Client engineer may at his discretion or at the request of the contractor determine the whole or any part of the contract which cannot be performed by reason of the failure to supply such materials, articles or things and the contractor shall not be entitled to claim any damages or compensations in respect of such determination. The contractor shall, however, be paid the value of the work already done by him and the cost of the materials, articles or things if any collected by him upto the date of such determination and left unused on the work- on shall be taken over by the Client engineer either at the contract rates or at values deduced from the through rates deduced in the contract. When the contract is determined at the discretion of the Client engineer, he shall give notice in writing to the contractor and the decision of the Client engineer to determine the contract shall be final and bind on the contractor.

### **3. Explanation**

The expression "Through rates" means the rate for the finished items of work or the all in rates, that is to say, the rates for finished items of work inclusive of the cost of materials and labour.

if, at any time after the acceptance of the tender the Government shall, for any reason whatsoever not required the whole or any part of the work to be carried out, the Client engineers shall give notice in writing of the fact to the contractor. Who shall have no claim to any compensation or other payments whatsoever, who shall on account of any profit or advantage he might have derived from the execution of the work in full but which he did not derive in consequence of the termination of the works. He shall be paid at contract rates, for the work executed by him including any additional works such as clearing of site etc. that may be rendered necessary by such termination. He shall also be allowed a reasonable payment as decided by the authority next higher in rank to the authority which accepted the tender, for any expense incurred by him on account of labour and materials, articles or things collected, but which could not be utilized

on the works as verified by the Client engineer. Such decision shall be final and binding on both the parties and shall not be subject to arbitration.

#### **4. No payment for unsanctioned extras**

It shall be distinctly understood that no payment whatever will be made to the contractor for variations by way of extras, in cases where such variations have been made without the written sanction of the Client engineer.

#### **5. Accounts Receipts and Vouchers**

The contractors shall at any time upon the request of the Client engineer furnish him with all invoices; account, receipts and other vouchers that he may require in connection with the contract.

#### **6. Fraud, willful neglect or default**

No final or other certificate of payment or completion, acceptance or settlement of account shall, in any circumstances, relieve the contractor from his liability for any fraud, or willful neglect or default in the execution of the contract or any willful or unauthorized deviations from drawings, specification, instructions and directions for the time being binding upon him.

#### **7. Unfixed materials**

No payment or advance will be made for unfixed materials when the rates are for finished work in site.

#### **8. Payments and certificates**

Payments will be made to the contractor under the certificates to be issued at reasonably frequent intervals by the Client engineer, within 14 days of the date of each certificate an intermediate payment will be made by the Client engineer of a sum equal to 95 percent of the value of work as so certified and the balance of 5% will be withheld and retained as security for the due fulfillment of the contract.

Under the certificate to be issued by the Client engineer on the completions of the entire works, the contractor will receive the final payment of all the moneys due or payable to him under or by virtue of the contract except security deposit and the withheld amount equal to 2 1/2 percent of the total value of the work done provided there is no recovery from or forfeiture by the contractor to be made under clause 57. The amount withheld from the final bill will be retained under "Deposits" and paid to the contractor together with the Security Deposit after six months reckoned from the date of completion of work or as soon after the expiration of such period of six months as all defects shall have been made good according to the true intent and meaning thereof whichever shall last happen, in the event the final bill remains unpaid even after the period of six months before said, the Client engineer shall refund the security deposit which includes the E.M.D. and also the withheld amount

on a separate bill if requested or by the contractor in writing. No certificate of Client engineer shall be considered conclusive evidence as to the sufficiency of any work or materials or correctness of measurements to which is not related nor shall it relieve the contractor from his liability to make good defects as provided by the contract. The contractor when applying for a certificate shall prepare a sufficiently detailed bill based on the original figures of quantities and rates in the contract scheduled to the satisfaction of the Client engineer, to enable the Client engineer to check the claims and issue the certificate. The certificate as to such of the claim mentioned in the application as are allowed by the Client engineer shall be issued within fourteen days of the application. No application for a certificate shall be made within fourteen days of a previous application.

- A. Notwithstanding the above clause, the withheld amount of 2 ½ % from the final bill in respect of contract for construction of original building, will be retained by the Govt. for a total period of one year in lieu of six months period referred to in clause.
- B. and will be released after the expiry of one-year period on execution an indemnity bond by the contractor to the satisfaction of the Client engineer for a further period of four years to ensure structural stability of the building.

(G. O. MS. No. 181 PWD 28.1 .86)

When there is complaint from the Labour Department about non-payment of wages to the Labourers employee by the Contractors for the execution of work under agreement, the Client engineer, shall have full powers to withheld the bills claimed by the contractor pending clearance certificate from the Labour Department and to act as per the direction given by the Labour Department.

## **9. Interest and money due to the contractors**

No omission by the Client engineer to pay the amount due upon certificate. shall vitiate or make void the contract nor shall the contractor be entitled to interest upon any guarantee fund or payments in arrears, not upon any balance which may, on the final settlement of his accounts, be found to be due to him.

## **10. Acceptance of final measurements**

The contractor agrees that before payment of the final bill shall be made on the contract, he will sign and deliver to the Client engineer either in the measurement book or otherwise as demanded? valid release and discharge from any and all claims and demands whatsoever for all matters arising out of or connected with the contract and also produce a certificate from the Incomes tax Authorities that all income tax payable by him upto-date has been duly paid provided that nothing in this clause shall discharge or release the contractor from his liabilities under The contract. It is further expressly agreed That Client engineer in supplying the final measurement certificate need not be bound by the proceeding measurements and payments. The final measurements, if any of the Client engineer shall be final conclusive and binding on the contractor.



### **11. Recovery of money from contractor in certain case**

In every case in which provision is made for recovery of money from the contractor. Government shall be entitled to retain or deduct the amount thereof from any money that may be due or may become due to the contractor under these presents and or under any other contract or contracts or any other account what so ever.

### **12. Recovery under Revenue Recovery Act**

Whenever any amount has to be paid by the contractor in view of determination of the contract by virtue of clause 11 or any amount that may be due or may become due from the contractor under these presents and the contractor not responding to the demands for the payment of the said amount, then the Govt., shall be entitled to recover the said amount under the provisions of the Revenue Recovery Act. (G. O. Ms. No.3659 PWD 23.12.70).

### **13. Contractor dying becoming insolvent, insane or imprisoned**

In the event of the death or insanity or insolvency or imprisonment of the contractor or where the contractor being a partnership or firm 'becomes dissolved or being a corporation goes in to liquidation, voluntary or otherwise, the contract may at the option of the Client engineer, be terminated by notice in writing posted at the site of the works and advertised in one issue of the local district Gazette and all accepted and acceptable works shall forthwith be measured up and paid for at the rates provided in the contract schedule where such apply, or otherwise, by most recent schedule 0 rain of the division approved by competent authority '0 the person or persons entitled to receive and give a discharge for the payment.

## **XI. SETTLEMENT OF DISPUTES**

### **1. Arbitrations**

In case of any dispute or difference between the parties to the contract either during the progress or after the completion of the works or after the determination, abandonment or breach of the contract, or as to any matter or thing arising there under except as to the matters left to the sole discretion of the Client engineer under clauses 18,20.25.3, 27, 34, 35 and 37 of "General conditions of contract" or as to the withholding by the Client engineer of payment of any bill to which the contractor may claim to be entitled, the either party shall forthwith give to the other notice of such dispute difference and such dispute or difference shall or be and is hereby referred to the Director of Regional Executive Administration of the nominated Regional Executiveity mentioned in "Articles of Agreement" therein after called the "Arbitrator" in cases when the value of claim is less than & upto Rs.50000. In cases when the value of claim is more than Rs.50000 the parties will seek remedies to the competent civil courts. (G.O. Ms. No.253 pass 24.9.81) The Arbitrators shall give detailed reasons in their findings and conclusion (G.O.Ms.No.1 844 pass off 18.7.86)

Subject as aforesaid to the provisions of the arbitration Act, 1940, or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the Arbitration proceeding under this clause.

Upon every and such reference, the costs of and incidental to the reference and award respectively shall be discretion of the arbitrator. Subject to the condition that the amount of such costs to be awarded to either party shall not, in respect of a monetary claim exceed the percentage set out below of any such award irrespective of the actual fees, costs and expense incurred by either party provided that where a monetary claims disallowed in full they said percentage shall be calculated on the amount of the claim. The arbitrator may determine the amount of the costs be awarded or direct the same to be taxed as between solicitor and client or as party and shall direct by whom and to whom and in what manner the same shall be borne and paid.

The fees for arbitrators shall be levied based on the value of claims referred to for arbitrations. The fees shall be calculated at 5 percent of the first Rs.10000/- and 3 percent of the next Rs. 40000/- (G.O.Ms.No. 1844 pms dt 18.7.86)

Provided that the Government shall not be liable to any claim in respect of any such dispute or differences until the liability and the amount thereof shall have been referred to and decided by the Arbitrator

## **D. SAFETY CODE**

### **General Rules as to Scaffolds.**

1. Suitable scaffolds shall be provided for workman for all works that cannot be safely done from a ladder or by other means. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and the ladder shall be given an inclination not steeper than 0.25 to 1 (0.25 horizontal to 1 vertical) when the ladder is used for carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder.
2. A scaffold shall not be constructed, taken down or substantially altered except (a) under the supervision of a competent and responsible person: and (b) as far as possible by competent workers possessing adequate experience in such work.
3. All scaffolds and appliances connected therewith and all ladders shall
  - a) be of sound materials
  - b) be of adequate strength having regard to the load strain to which they will be subjected and
  - c) be maintained in proper condition
4. scaffolding or staging more than 3.5 meters above the ground or floor shall have a guard rail properly attached bol-braced and otherwise secured at least 0 meters above the floor or platform of such scaffolding or staging extending along the entire length of the outside and ends thereof with only such opening as may be necessary for delivery of materials. Such scaffolding or staging shall be so fast ends as to prevent it from swaying from the building or structure.
5. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use
6. Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.
7. Before installing lifting gear of scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
8. Working platform, gangways and stairways should be so constructed that no part there can be unduly or unequally. If the height of the platform or the stairways is more than 3.5 meters above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fenced as described in (4 above)

9. Every opening in the floor of a building or in a working platform shall be provided with suitable fencing or railing for a minimum height of 0.9 meter to prevent the fall off persons or material.
10. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length while the width between side rails in rung ladder shall in no case be less than 30cm for ladder up to and including 3 meters in length. For longer ladders this width should be increased at least 20mm for each additional meter of length. Uniform step spacing should not exceed 30cm. Adequate precautions should be taken to prevent danger from electrical equipment. No materials on the site of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the Public from accidents and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precautions and to pay any damage and cost which may be awarded in any such suit, action or proceedings to any cost which may with the consent of the contractor be paid to compromise any claim by any such person.

#### **Excavation and trenching:**

11. Trenches-1.2 meters or more in depth, shall at all times be supplied with at least one ladder for each 20 meters in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 0.9 meter above the ground. The sides of the trenches which are 1.5 meters or more in depth shall be stepped back to give suitable slope or hold securely by timber bracing, so as to avoid the danger of sides to collapse.
12. Demolition-Before any demolition is commenced and also during the process of the work.
  - a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
  - b) No electric cable or apparatus used by the operator shall remain electrically charged.
  - c) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
13. All necessary personal safety equipment as considered adequate by the Client engineers shall be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
  - a) Workers employed on mixing asphalted materials cement and lime mortars- shall be provided with protective footwear and protective goggles.

- b) Those engaged in while-washing and mining or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
- c) Those engaged in welding works shall have provided with welder's protective 513-'195.
- d) Those engaged in welding works shall be provided with welder's protective 513-'195.
- e) When workers are employed in sewers and man holes, which are in use, the contractor shall ensure that the manholes covers are opened and are ventilated at least for an hour before the workers are allowed to get into them a holes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
- f) The contractor shall not employ men below the age of 18 years and women on the work of painting, with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken.
  - i). No paint containing lead products shall be used except in the form of paste or ready - made paint,
  - ii). Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
  - iii). Overalls shall be supplied by the contractors to workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
  - iv). When workers are employed in dangerous occupations like work with hot bitumen, drilling operations etc., which are likely to prove dangerous resulting in physical damage and casualty, adequate protection of the workers should be provided.

14. When the work is done near any place. Where there is risk of drawing all necessary equipments should be provided and kept ready for use and all necessary equipments steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatments of all injuries likely to be sustained during the course of the works

15. a) Hoisting machines and tackle including their attachments anchorages and supports shall be good mechanical construction, sound materials and adequate strength and free. from patent defect and shall be kept in good repair and in good working order. Every rope used in hoisting or lowering materials or ass means of suspension shall be of suitable quality and adequate strength and free from patent defect.

b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in control of any hoisting machine, including the scaffold which or give signals of the operator,

c) In the case of every hoisting machine and of every chain ring hook shackle level and pulley block used in hoisting lowering or as a means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all cars referred to above shall be plainly marked with the safe working load, in the case of a hoisting machine Slaving variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any hoisting machine or of any gear referred to above in this-paragraph shall be loaded beyond the safe working load except for the purpose of testing.

16. Motors, gearing, transmissions, electricity wiring and other dangerous parts of hoisting appliance shall be provided with efficient safeguards, hoisting appliance shall be provided with such means as will request to a minimum the risk of the accidental descent of the load. Adequate precautions shall be taken to reduce to a minimum the risk of any part of a suspended load becoming accidentally displaced.

When workers are employed on electrical installations which are already energized, insulation mats, wearing apparel such as gloves, sleeve', and boots as may be necessary should be provided. The workers and carry keys or other materials which are good conductors of electricity.

17. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at workshop. The person responsible for the compliance of the safety code shall be named by the contractor.

18. To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the Labour Officer, Client engineer of the Department or other representative.

19. Notwithstanding the above clauses (1) to (1 8.) there is nothing in these to exempt the contractor from the operations of any other Act of rules in force in the Republic of India.

Model rules for provision of Health and Sanitary arrangements for workers employed by the P.W.D. and Highways and Rural Works Department and their contractors.

## **Amenities to Labours**

The contractor's special attention is invited to relevant clauses of the "General conditions of control" in the Tamil Nadu Building Practice and he is requested to provide at his own expense the following amenities to the satisfaction of the Client engineer.

### **1. Definitions-**

- (i) "Workplace" means a place at which an average fifty or more workers are employed in connection with construction work.
- (ii) "Large work place" at which, at an averaged 500 or more workers are employed in connection with construction work.

### **2. First-Aid –**

- (a) At the work site there shall be maintained in a readily accessible place, first aid appliance and medicines including an adequate supply of sterilized dressing and sterilized cotton wool. The appliances shall be kept in good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours
- (b) At large work places, where hospital facilities are not available within easy distance of the works, first aid posts shall be established and be run by a trained compounder.
- (c) Where large work place is remote from regular hospitals an in-door ward shall be provided with one bed for every 250 employees.
- (d) Where large work places are situated in cities, towns or in their suburbs and no beds are considered necessary owing to the proximity of city or town hospitals, suitable transport shall be provided to facilitate removal of urgent cases to these hospitals. At other work places some conveyance facilities, such as a car shall be kept readily available to take injured persons or persons suddenly taken seriously ill to the nearest hospital.

### **3. Drinking water-**

- (a) Water of good quality fit for drinking purposes shall be provided for the work people on a scale of not less than 15 litres per head per day
- (b) Where drinking water is obtained from an intermittent public water supply each work place shall be provided with storage tank where such drinking water shall be stored.
- (c) Every water supply storage shall be at a distance of not less than 15 meters from any latrine, drain or other source of pollutions. - Where water has to be drawn from an existing well, which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and water proof.

(d) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done atleast once a month.

4. Washing and bathing Places-Adequate washing and bathing places should be provided, separately for men and women such places shall be kept in clean and drained condition. Bathing or washing should not be allowed in or near any drinking water well.

5. Latrine sand Urinals-There shall be provided within the precincts of every work place, latrines and urinals in an accessible place and the accommodation separately for each of thorn, shall be on the following scale or on the scale so directed by the Client engineer in any particular cases.

i) Where the number of persons employed does - 2 not exceed 50.

ii) Where the number of persons employed exceed 50 - 3 but does not exceed 100.

iii) For every additional 100 -3

If women are employed separate latrines and urinals, screened from those for men shall be provided on the same scale.

Except in work places provided with water flushed latrines connected with a water borne sewage system, all latrines shall be provided with receptacle on dry earth system which shall be cleaned atleast four times daily and at least twice during the working hours and kept in strictly sanitary conditions. The receptacles shall be tarred inside and outside atleast once a year.

The excreta from the latrines shall be disposed off at the contractor's expense, in our way pits approved by the local Public Health Authority. The Contractor shall also employ adequate number of scavengers and conservancy staff to keep the latrines and urinals in a clean condition.

6. Shelters during rest: At every work site there shall be provided, free of cost, two suitable sheds one for meals and the other for rest separately for men and women for the use of labourer.

7. Creches:

(a) At every work place at which 50 or more women 'workers are ordinarily employed there shall be provided two huts of suitable size for the use of children under the age of 6 years, belonging to such women, one hut shall be used of infants, games and play and the other as their bed room. The huts shall not be constructed on a lower standard than the following:

i) thatched roofs

ii) mud floors and walls.



iii) Planks spread over the mud floor and covered with matting.

The huts shall be provided with Suitable and sufficient opening for light and ventilation. There shall be adequate provision of sweepers to keep the places clean. There shall be two attendance Sanitary utensils shall be provided Health Officer of the area concerned. The use of the huts shall be restricted to children, their attendants and mothers of the children.

(b) Where the number of women workers is more than 25 hut less than 50, the contractor shall provide at least one hut and one Dai to look after the children of women workers.

(c) The size of creche or creches shall vary according to number of women workers.

(d) The creche or creches shall be properly maintained and necessary equipment like toys, etc. shall be provided.

8. Canteens-A cooked food canteen on a moderate scale shall be provided for the benefits of workers if it is considered expedient.

9. Sheds for Workmen - The contractor should provide at his own expense sheds for housing his workmen. These sheds shall be on a standard not less than the cheap shelter type, to live in which the work people in the locality are accustomed to.

A floor area of about 1 .8 meters x 1 .5 meters for two persons shall be provided. The sheds to be. in rows with 1.3 meters clear space between sheds and 9 meters clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons, each, each unit to have a clear space of 1 2 meters all-round.

## **Additional Conditions of Contract**

1. For more than one work: One technical assistant he employed by the contractor for more than one work situated within one kilo meter, provided that monetary limit prescribed for the nature of Technical staff to be employed is adhered to be one and the same contractor.
2. Other Engineering qualification:  
  
The contractors who possess a degree in mechanical or chemical engineering may also have to appoint technical assistants as in the case of registered contractors with degree in electrical engineering, when they are entrusted with civil works by the department.
3. The contractor should employ sufficient number of qualified licensed plumber with necessary experience and skill in the to the satisfaction of the Client engineer concerned for execution of water supply arid sanitary items of work.
4. The water for the works shall be as for as practicable from earthing vegetable or organic matter and from salts or substance likely to interfere with the setting of mortar proves harmful to the work.
5. All items of work shall be- done in accordance with relevant clauses of TNBP and addenda volume to the TNBP as from time to time
6. The contractor shall be responsible for the safe custody of the departmental materials once they are handed over to the Contractor at the departmental stores. The cost of any material the custody of the Contractor lost, stolen, destroyed or damaged or if rendered unfit for the work will be recover from the Contractor at the issue rate.
7. For finding fineness modules sand and coarse aggregate a hand operated sieve apparatus may be procured along with weighing machine for weighing the aggregate and sand.
8. In the case of any breach of the terms of the contract, the contract will be closed at the risk and costs of the Contractor in addition to the forfeitures of the EMD and Security Deposit.
9. The testing is to be done at the Contractor's cost for all building materials and also for concrete cubes.
10. The work shall be executed and measured as per metric dimension given in the schedule of quantities 6 drawing etc., (F.P. Units where indicated are for guidance only).
11. Unless otherwise specified P.I' the rates quoted by the Contractor shall be for works at all levels of the buildings.
12. Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, length and 'widths except when specifically mentioned in the

item, otherwise nothing extra will be paid on this account.

13. The work shall be carried out as per drawings and designs supplied by the Department and as directed by Engineer-in- Charge.
14. The Contractor has to make his own arrangements for procuring water for construction purpose construction and curing should 1)- done with water free from injurious amounts of deleterious materials, potable water is generally considered, satisfactory for curing and fixing concrete and masonry. However, the water tube used should be periodically tested at Contractors cost for its suitability for using in the construction work and got approved from Department Engineers.
15. Electricity: The contractor should make his own arrangements for obtaining electricity for all types of his use like lighting welding pumping and mosaic and marble polishing etc.,
16. Any damage to work resulting from rains or from any other cause until these work is taken over by the Department after completion will be made good by the contractor at his own cost:

**Price adjustment clause is applicable.**

Price adjustment will apply only when the fluctuation of rates for critical construction materials namely Cement & Steel exceeds by 3% compared to the estimate rates (RBI Index Price). Price adjustment shall be made for both increase and decrease in the cost of materials and shall be calculated on the departmental cost of the work once in a quarter.

Price Adjustment shall be calculated once in a quarter for both increase & decrease in cost of cement and steel as per Index number of whole sale prices in India for cement under table 39 and for steel under table 40 of RBI Bulletin released by the Department of Economics Analysis and Policy, RBI and the quarter reckoned with reference to the quarter in which the date of agreement falls.

This price adjustment shall be calculated in respect of cement and steel based on the department rate adopted in the estimate.

The price adjustment shall also apply for the materials viz. Bitumen & POL, on pass through basis whenever the Indian Oil Corporation revises their prices.

The difference in cost payable to the contractor under this clause will be paid along with the final bill payable to the contractor.

The work is progressing as per the mile stones fixed on physical terms.

Further, If the contractor does a certain excess quantum of work in the second quarter itself, which is expected to be done in the third quarter as per mile stone fixed shall be eligible for price adjustment. Similarly, if the contractor does a certain quantum of work in the third quarter, which should have been done in the second quarter itself, as for mile stone fixed, is not eligible for price adjustment.

This clause shall be applicable for the period from the date of agreement up to the end of agreement period. The agreement period shall include the “actual period” for which the work was “suspended officially” and the extension of time permitted for any of the valid reasons such as, war, natural calamities like, flood, earth quake, other risks arising out of acts of God during the agreement period, work delayed due to the land acquisition process, change in design, change in scope of work etc. in writing by the Tender Inviting for the work.

The Client engineers concerned are empowered to arriving at the price variation and also for making payments / recoveries, under this clause.

The formulas (e) for adjustment of prices are

**(i) Adjustment for cement component**

Price adjustment for increase or decrease in the cost of cement procured by the contractor shall be paid in accordance with the following formula.

$$V_c = 0.85 \times P_c \times R \times (C_i - C_o)/C_o$$

$V_c$  = Increase or decrease in the cost of cement for the work done during the quarter under consideration.

$P_c$  = Percentage of cement used on the work during the period (total quantum of cement shall be calculated based on the provisions allowable as per standard data for each items involved in the work and the percentage of cement used during the period shall be assessed based on the milestone fixed)

$C_o$  = Index number of whole sale prices in India for cement under table 39 or Reserve Bank of India Bulletin released by the department of Economics Analysis & Policy, Reserve Bank of India for the Quarter in which the agreement has been signed.

$C_i$  = Index number of whole sale prices in India for cement under table 39 of RBI Bulletin released by the Department of Economics Analysis and Policy, RBI for the Quarter under reference in which the measurements recorded in the M-Book to which the particular Bill payment is related.

**(ii) Adjustment for steel component**

Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula:

$$V_s = 0.85 \times P_s \times R \times (S_i - S_o)/S_o$$

$V_s$  = Increase or decrease in the cost of steel for the work done during the quarter under consideration.

$P_s$  = Percentage of steel used on the work during the period (total quantum of steel shall be calculated based on the provisions allowable as per structural design calculations approved for each steel members / slab involved in the work and

the percentage of steel used during the period shall be assessed based on the mile stones fixed)

So = Index number of whole sale prices in India for steel under table 39 of Reserve Bank of India Bulletin released by the Department of Economics Analysis and Policy, RBI for the Quarter under reference in which the agreement has been signed.

Si = Index number of whole sale prices in India for steel under table 39 of RBI Bulletin released by the Department of Economics Analysis and Policy, RBI for the Quarter under reference in which the measurement recorded in the M-Book to which the particular Bill payment is related.

**(iii) Adjustment of POL in respect of Machineries use**

$V_f = 0.85 \times P_f \times R \times (F_i - F_o) / F_o$

Vf = Increase or decrease in the cost of POL for the work done during the quarter under consideration.

Pf = The weightage of fuel component on the hire charge of machineries shall be taken as 15% of the total hire charge.

Fo = Cost of POL on the date of agreement

Fi = Cost of POL as per the revision ordered by Indian Oil Corporation

R = Higher charge of the machinery involved for each item of work.

**(iv) Adjustment of POL in Respect of Conveyance**

$V_f = (F_i - F_o / F_o) \times (1/4.50) \times (1 / 5.66)$

Vf = The increase / decrease in cost of fuel due to the revision in cost of fuel (diesel) for the co-efficient 1.60 under column.5 for Sl. No.2 of the conveyance table approved in Schedule of Rates.

Fi = Cost of fuel on the date of agreement,

Fo = Cost fuel as per revision ordered by Indian Oil Corporation.

4.50 = Average kilometer per litre,

5.66 = The load that can be carried by a lorry.

For the works eligible for cost escalation, Tender excess shall not be entertained except in rare cases of non-input related difficulties.

Bonus as an incentive for advance completion of work not less than 10% of agreement period will be considered and 1% on the value of actual quantities of works executed at tendered rates will be paid to the contractor.

## **RATE OF PROGRESS**

Total Period of Completion: 3 Months from the date of Entering into agreement including rainy season Work programmed achieving Milestones.

Name of Work: **Repair and maintenance work at Company owned flat No.6, Kamalabai Street, T Nagar, Chennai 17, United India Insurance Company.**

### **4 Mile Stones**

1 <sup>st</sup> Mile Stone :	20 %	}	of work should be completed in all respects.
2 <sup>nd</sup> Mile Stone :	50 %		
3 <sup>rd</sup> Mile Stone :	85 %		
4 <sup>TH</sup> Mile Stone :	100%		

Liquidated damages will be imposed on the contractor for the lapses / short fall in achieving the rate of progress as per existing schedule. The liquidated damages for the whole of the work are will be filled up at the time of concluding agreement.

### **Amount per day**

For Mile Stone 1	= Rs. 10,000/- per day
For Mile Stone 2	= Rs. 12,000/- per day
For Mile Stone 3	= Rs. 15,000/- per day
For Mile Stone 4	= Rs. 18,000/- per day