विनयलता एस.
VINAYALATHA S.
कुलसचिव
REGISTRAR

गणितीय विज्ञान संस्थान
THE INSTITUTE OF MATHEMATICAL SCIENCES
(परमाणु ऊर्जा विभाग, भारत सरकार का एक स्वायत्त संस्थान)
(An Autonomous Institution under Dept. of Atomic Energy, Govt of India)
CIT CAMPUS, TARAMANI, CHENNAI - 600113

TECHNOLOGIES FOR NEW INDIA@75
आज़ादी का अमृत महोत्सव

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Ref : IMSc / Civil / QUT /04-2026-27 15.07.2026

To

Sub: Annual Maintenance of Cleaning of under ground sump, Over head R.C.C. Tank and Plastic tank in Institute Campus & Guest house Campus at Taramani and Off Campus at Thiruvanmiyur & Pallavaram, Chennai. – Inviting sealed quotations – Reg.

Sir/Madam,

Sealed Quotations are invited by the Registrar, IMSc, Taramani on behalf of the Director, IMSc for **"Annual Maintenance of Cleaning of under ground sump, Over head R.C.C. Tank and Plastic tank in Institute Campus & Guest house Campus at Taramani and Off Campus at Thiruvanmiyur & Pallavaram, Chennai."** You are requested to fill up the same and sent to us so as to reach on or before **24.07.2026** at 15.00 hrs at Main building, IMSc, in a sealed cover super scribing the quotation no. The Institute reserves the right to reject any or all the quotations or to allot parts of the work to different agencies without assigning any reason.

Vinayalatha. S
15-7-2026

Registrar,
For and on behalf of the Director, IMSc

Tenderers are advised to take note of the following points into consideration while quoting

1. E - mail/ fax quotations will not be accepted.
2. The rates are inclusive of all taxes, labour charges and materials etc. nothing will be paid extra.
3. The period is to be **01 (One) Year.**
4. The payment shall be made after completion of the periodical cleaning of 1st term & 2nd term and as per the actual measurement at site.
5. Late quotations will not be considered.
6. The tenderer shall be submitted the **EMD along with the tender.**

Enclosed : Tender book with blank Schedule.

THE INSTITUTE OF MATHEMATICAL SCIENCES

C.I.T CAMPUS , TARAMANI

Name of Work : Annual Maintenance of Cleaning of under ground sump, Over Head R.C.C. Tank and Sintex tank in Institute Campus, Guest house Campus, and Off Campus at Thiryvanmiyur & Pallavaram,Chennai.

Note: The rates quoted by the tenderer in the schedule shall be inclusive of Goods and Service Tax (GST) of 18% or any other Tax applicable. GST or any other tax applicable in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same.

Estimated Amount in Rs. 2.10 lakhs

Schedule of Quantities

Sl. No.	Description of item	Qty	Per	Rate		Amount	
				Rs.	P.	Rs.	P.
1	Cleaning of **Over Head R.C.C. Tank (independent staging)** including disposal of slit and rubbish, all as per direction of Engineer-in-Charge. The cleaning shall consist following operations:- (i) Tank shall be emptied of water by pumping & bottom shall be cleaned of silt and other deposits. (ii) Entire surface area of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with water. (iii) Chlorination of RCC internal surface by liquid chlorine. (iv) The treated surface shall be dried using air jetting and all loose particles shall be removal from the surface. (v) Finally the surface shall be treated with ultraviolet radiation etc. as per direction of Engineer-in-Charge.	208,000.00	Liter				
2	Cleaning of **under ground sump, (independent staging)** including disposal of slit and rubbish, all as per direction of Engineer-in-Charge. The cleaning shall consist following operations:- (i) Tank shall be emptied of water by pumping & bottom shall be cleaned of silt and other deposits. (ii) Entire surface area of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with water. (iii) Chlorination of RCC internal surface by liquid chlorine. (iv) The treated surface shall be dried using air jetting and all loose particles shall be removal from the surface. (v) Finally the surface shall be treated with ultraviolet radiation etc. as per direction of Engineer-in-Charge.	1,040,000.00	Liter				

Schedule of Quantities							
Sl. No.	**Description of item**	**Qty**	**Per**	**Rate**		**Amount**	
				Rs.	**P.**	**Rs.**	**P.**
3	Cleaning of **water storage tank (inside surface area)** upto 5000 litre (Plastic tank) at terrace capacity at all heights with coconut brushes, duster etc., removal of silt, rubbish from the tank and cleaning the tank with fresh water disinfecting with bleaching powder @ 0.5gm per litre capacity of tank including marking the date of cleaning on the side of tank body with the help of stencil and paint and disposing of malba all complete as per direction of Engineer-in-Charge. (The old date already written on tank should be removed with paint remover or black paint and if date is not written with the stencil or old date is not removed deduction will be made @ Rs. 0.10 per litre) (if during cleaning any GI fittings or ball cock is damaged that is to be repaired by contractor at his own cost and nothing extra will be paid on this account)	118,000.00	Liter				
				Total Amount in Rs.			

Rupees in words:

Signature of the Tenderer :

Address with seal:

1. The Earnest Money Deposit **(EMD) amount is 2%** of the quoted amount.

2. EMD in the form of Deposit at call receipt or Demand Draft or Bankers cheque drawn in favour of **The Institute of Mathematical Sciences payable at Chennai.**

3. Security Deposit 2.5 % of tendered value

4. The successful bidder EMD will be adjusted for the security deposit, and the balance of 0.5% will be deducted from the bill. This amount is interest free and shall be refunded on completion of the of the maintenance work.

EMD Details

D.D no:

Date:

Amount:

Bank:

Branch:

THE INSTITUTE OF MATHEMATICAL SCIENCES, CHENNAI

Name of tender: Annual Maintenance of Cleaning of under ground sump, Over Head R.C.C. Tank and Plastic tank in Institute Campus & Guest house Campus at Taramani and Off Campus at Thiruvanmiyur & Pallavaram, Chennai.

GENERAL INFORMATION FOR THE GUIDANCE TO TENDERERS

1. The cleaning process is to be done in following methods:

(i) Mechanical Dewatering:

Tank shall be emptied of water by pumping & bottom shall be cleaned of silt and other deposits.

(ii) Sludge removal:

Entire surface area of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with water.

(iii) High pressure Jet

The treated surface shall be dried using air jetting (High pressure pump) and all loose particles shall be removed from the surface.

(iv) Anti Bacterial Spray:

Chlorination of RCC internal surface by liquid chlorine.

(v) Vacuum Cleaning & UV radiation:

Finally the surface shall be cleaned by vacuum machine and treated with ultraviolet light

2. The designated tanks shall be cleaned immediately as per the terms and conditions specified in the tender document

3. The rate shall include all applicable taxes, royalties, loading and unloading charges etc..

4. The rate shall be valid for a period of 12 months.

5. The tenderer shall be submitted the **EMD along with the tender.**

TENDER TERMS & CONDITIONS

1. Periodic cleaning of UG Sump, OH Tank, and Sintex Tank shall be conducted every six months. In case of an emergency, the schedule may be adjusted, and the Institute will be informed accordingly

2. The contractor shall maintain a cleaning job card for each tank and submit a detailed report to the Institute officials upon completion of the cleaning work

3. The contractor shall obtain necessary entry pass/seal in the delivery challan from the Entry gate security at IMSc Campus located in Taramani, Thiruvanmiyur and Pallavaram campuses.

4. Adequate safety measures should be taken care while driving the vehicle inside IMSc campus.

5. The tender shall be awarded to the lowest bidder.

6. The scope of work includes cleaning of underground sumps, overhead tanks, and plastic tanks located at various sites within the IMSc campus and its off-campus locations at Thiruvanmiyur and Pallavaram.

7. If the successful tenderer (lowest bidder) fails to perform the cleaning services as required by the Institute, they will be liable for blacklisting, debarring them from participating in future tenders with the Institute

8. The Institute reserves right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tenders.

9. **Proof of similar works, specifically cleaning of tanks and sumps, executed for Central Government/Central Autonomous Bodies/Central Public Sector Undertakings or reputed organizations, should be enclosed along with the tender**

10. The Director, IMSc will reserve the right to forfeit the security deposit during the validity of contract if there is any breach of service/contract from the Service provider viz., non-cleaning in time, improper cleaning.

11. Institute will reserve the right to terminate the contract/service by giving a notice of one month to the Service provider, in case the service is found unsatisfactory or any other reason. in case service provider/contractor wants to terminate the contract he will have to serve notice period of three months failure to do so will entail forfeiture of security deposit and blacklisting the contractor from participation in future tenders of IMSc of any categories of tenders.

12. The Contract/service will be valid for a period of **12 months** subject to review.

13. Tenure of the contract / service may be extended upon the mutually agreed terms and conditions between the service provider and IMSc, if necessary.

14. The rates quoted shall be inclusive of waiting, unloading, and transportation time, considering the tank's location on the 2nd and 3rd floors of various buildings

15. The contractor is required to follow Institute security procedures for the vehicle's Entry & Exit at the premises.

16. An authorized representative of the Institute reserves the right to inspect and verify the cleaning process at any time to ensure adherence to the required standards

17.If the contractor is found to be providing unhygienic cleaning services during the contract period, the Institute reserves the right to terminate the contract without prior notice. In such an event, IMSc also retains the authority to forfeit the security deposit without further notice to the contractor.

18. The Institute official will coordinate with the contractor to schedule the cleaning date and maintain records. The contractor shall maintain a cleaning register, updating details periodically and obtaining signatures from the Institute official as confirmation.

19. The timing for cleaning in different buildings will be mutually agreed upon between the Institute and the contractor

20. The Contractor shall submit the bill in the prescribed format at the end of every cleaning, accompanied by a detailed cleaning report chart

21. **The successful bidder EMD will be adjusted for the security deposit, and the balance of 0.5% will be deducted from the bill. This amount is interest free and shall be refunded on completion of the work.**

22. It is the responsibility of the Contractor to adhere to all laws, rules and regulations imposed by State Govt., or any such law making body, Institute shall not be responsible in case any relevant law is breached.

23.The Institute shall not be held responsible for any damage to vehicles or injury to personnel (including the contractor's staff) or third-party damages that may occur during tank cleaning operations.

****

UNDERTAKING

I have read the terms and conditions of the tender mentioned in this document and agree to abide by all the terms and conditions.

Date:

Signature of the Contractor

Communication Address

Contact Number:

Email ID:

SECTION – III : SPECIAL CONDITIONS

1. LOCATION:

The proposed site for this work is in the campus of the Central Institute of Technology, Taramani, Chennai – 600 113, adjacent to Film Institute of Tamil Nadu.

2. SITE INVESTIGATION:

The contractor acknowledge that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labour, water, electric power, roads and uncertainties of weather, or similar physical conditions of the site, the confirmation and conditions of the ground the character, the quality and quantities of surface and sub-surface materials to be encountered, including the subsoil water levels, the character of equipment facilities needed preliminary to and during the progress of the work, and all other matters upon which information is reasonably obtainable and which can in any way affect the work or his cost there of under this contract. Any failure of the contractor to acquaint himself with all the available information concerning these conditions will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with drawings and specifications. The contractor shall note that any clarifications regarding specifications, conditions of contract, schedule of quantities, scope of work, etc., are required, he should contact the office of the Engineer. No claim on account of ambiguity in any respect will be entertained.

3. SCOPE OF WORK:

The tenderer should also note that other contractor will be working in the vicinity and this work will have to be carried out in proper co-ordination with them. The tenderers shall also note that they shall have to clear the site of vegetation, debris etc. before commencement of the work and that no extra payment is permissible on account of clearance of site, removal of debris etc. coming in the way of construction work.

The work to be done under those specifications consists of furnishing all labour, materials, tools, equipment and services and performing all work (except work, equipment and materials specified to be performed or furnished by the Institute) required to execute the work specified in the tender, and all other work required to satisfactorily complete construction in strict accordance with the specifications and drawings enclosed.

It is intended that the drawings and specifications include everything requisite and necessary to finish the entire work properly.

Not withstanding the fact that every item necessarily involved may not be specifically mentioned. All work when finished shall be delivered in a complete and undamaged state.

4. LAYOUT AND STAKING OUT BASE LINES AND LEVELS:

The contractor shall layout his work from base lines and grades established by the Institute, and shall be responsible for all measurements in connection therewith. The contractor shall, at his own expense furnish all stakes, templates, platforms, equipments, ranges and labour that may be required in setting and cutting or laying out any part of the work. The contractor shall be held responsible for the proper execution of the work to such lines and grades as may be established or indicated on the drawings and specifications. The contractor shall take benchmarks, lines and levels. The contractor is to construct and maintain proper benches at the intersections of all main walls, columns, etc. in order that the lines and levels may be accurately checked at all times, theodolite, levels, prismatic compass, chain, steel and metallic tapes and all other surveying instruments found necessary for the work shall be provided by the contractors for use at site in connection with this work.

5. DRAINAGE ARRANGEMENTS AROUND PROPOSED SITE OF CONSTRUCITON:

The contractor shall control the grading in the vicinity of the buildings and trenches, so that surface water is prevented from running into excavated areas. The contractor shall also be responsible to see that no area around his works becomes flooded during rainy season because of his piles up materials, etc., and subsequently flood other buildings. At the discretion of the Engineer the contractor shall take steps to prevent flooding. It shall be the contractor's responsibility to keep areas around his work dry. The cost of repairing damages, if any, to the work under execution or to any Government property in and around the site shall be entirely borne by the contractor when such damages are due to non-compliance with the above conditions.

6. APPROACH ROAD:

The Contractor will be required to construct suitable approach roads leading to the construction site from the main road and maintain the same at his own cost.

Contractor shall be permitted to use the existing roads in the establishment area for the purpose of transporting labourers and materials etc. The Engineer, however, will not undertake to provide any approach roads to the site of work. It shall be entirely the responsibility of the Contractor to provide and maintain such temporary approach roads at his own cost for the purpose of movement of men, materials and equipment.

Layout of such approach road shall be submitted to Engineer for his approval before undertaking the construction of the same. Such approach roads shall be made available to other agencies carrying out the work in the same area in consultation with the Engineer of the works without any extra cost.

7. SPECIFICATION AND DRAWING:

a) The work shall conform to the contract specifications enclosed.

b) The work shall also conform to the enclosed drawings, and to such other drawings relating thereto as may be furnished from time to time during construction by the Engineer in explanation of details of modifications, including such modifications as the Engineer may consider necessary to meet conditions found during the progress of the work.

c) 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.

d) Prior to the execution of the work, the Contractor shall check all drawings and shall immediately report all errors, discrepancies and/or omissions discovered therein to the Engineer. All such errors discrepancies and/or omissions will be adjusted by the Engineer. Any adjustment made by the Contractor without prior approval of the Engineer shall be at his own risk and the settlement of any complications arising from such adjustment shall be made by the Contractor at his own expenses.

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.

e) In the absence of any specification for any work or material, relevant Indian Standard specifications will apply. In the case of any class of work for which no specifications have been given, such works shall be carried out in accordance with the specification and requirement given by the Engineer.

8. SHOP DRAWINGS:

a. The drawings consisting of such detailed drawings as are not included in the contract drawing 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.

b. Drawings to be furnished by the contractor shall be included in the bid price of this work. Approval of the shop drawings shall not be construed as authorizing additional work or increased costs to the department. Adjustment in the bid price or any extension of time to cover required charges in the shop drawings to comply with the requirements of the contract specifications shall not be permitted.

c. 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 intend and the requirements of the contract specifications and that they fit in with the overall building layout.4 Drawings found to be inaccurate or otherwise in error will be returned for correction by the Contractor to his sub-contractors prior to submittal.

d. The Engineer will review and return three copies of each drawings to the Contractor, marked either 'APPROVED (OR) NOT APPROVED'. Then each copy of the approved drawings will be identified as having received such approval by being stamped and dated. If the drawings are approved as noted, the Contractor shall make the indicated corrections immediately and may proceed with the work as though the drawings had been approved. If unapproved, the Contractor shall make all required corrections, immediately and resubmit drawings as above until they are approved or approved as noted.

e. After the Contractor has made the corrections to unapproved drawings, the Contractor shall submit six copies of each drawings to the Engineer who will return three approved copies to the contractor.

f. The approval of the drawings by the Engineer shall not be considered 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. 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.

9. PROGRESS AND COMPLETION:

The entire work shall be completed within the period as specified in the Tender schedule elsewhere including monsoon period from fifteenth day after the date on which the written order to commence the work is issued.

a) The Contractor shall furnish sufficient forces, construction plant and equipment, and shall work such hours, including night shifts and overtime operations, as may be necessary to ensure the progress of the work in accordance with the attached construction schedule and its completion within the time specified in this contract. If in the opinion of the Engineer, the Contractor refuses or fails to comply with his obligations set forth in the preceeding sentence, the Contractor shall take such steps as may be necessary to improve this progress and the Engineer may require him to increase the number of shifts and/or overtime operations, days of work, size of forces and/or the amount of construction plant. All such action taken by the Contractor pursuant to the direction of the Engineer shall be without additional cost to the Institute.

Failure of the Contractor to meet his obligations set-forth in the paragraph above, under this provision shall be ground for determination by the Engineer that the Contractor does not progress the work with such diligence as will ensure completion within the time specified. Upon such determination the Engineer shall take necessary steps to increase the labour forces, amount of construction plant, etc., as he deems fit to ensure completion of works in accordance with the schedule at the Contractor's expense.

b) It shall be the responsibility of the Contractor to mark the actual progress of the works in progress report form at the end of every two weeks, and the calculated progress for the job as a whole, and shall submit three copies to the Engineer.
The time allowed for carrying out the work as entered in the tender shall be strictly observed by the Contractor and shall be deemed to be the essence of the contract on the part of the Contractor and shall be reckoned from the fifteenth day of the date on which the work order to commence the work is issued to the Contractor and all work shall be completed in accordance with the construction schedule attached to the specifications. Monsoon or inclement weather will not be considered reason for extension of time. The Contractor shall submit a time schedule keeping the phasing of the work generally in line with the construction schedule for the approval of the Engineer and such an approved programme shall be strictly adhered to by the Contractor.

10. SEQUENCE OF WORK:

The Contractor shall execute the finishing work as per the sequence given by the Engineer from time to time. It shall be the Contractor's responsibility to transport all equipment and materials to the job site at his own expenses. The Contractor shall use only established roadways for construct and use such temporary roadways or necessary and approved by the Engineer. When it is necessary to cross kerbs or sidewalks, protection against damage shall be provided by the Contractor. Any damage caused to roads, kerbs, sidewalks, or other load bearing facilities shall be repaired by the Contractor at his own expenses.

11. CO-OPERATION WITH OTHER CONTRACTORS:

The Contractor shall afford all facilities and give complete co-operation for the execution of various other works, if required to be carried out simultaneously by other agencies while his own work is in progress. The co-ordination will be effected in consultation with the Engineer of the work. Other Contractors are also likely to be authorized by the owners to work in the same area during the construction stage for work such as (i) Electrical (ii) Air-conditioning (iii) Services and (iv) Public health and other miscellaneous works.

The Contractor shall afford all facilities

For the installation of embedded parts, sleeves with its accessories in slabs, beams or walls by the other agencies, before the reinforcement is placed. Necessary outlets in the shuttering will have to be provided by the civil contractor for this purpose for which no extra payment will be admissible.

For the installation of various service lines in the walls, floors, slabs ducts etc.,

The Contractor shall afford all facilities for using scaffolding etc., by the other Contractors.

No extra claims on account of facilities provided for carrying out the work mentioned above will be entertained.

12. INSPECTION:

The work shall be conducted under the general discretion of the Engineer and is subject to inspection by his appointed Inspectors to ensure strict compliance with the terms of the contract. No failure of the Engineer or his designated representative during the progress of the work to discover or to reject materials or work not in accordance with the requirement of this contract shall be deemed an acceptance thereof, or a waiver of defects therein, and no payment by the Engineer, or partial/entire occupancy of he premises, shall be construed to be an acceptance of work or materials which are not strictly in accordance with the requirement of this contract. No change whatsoever to any provision of the specifications shall be made without written authorization from the Engineer.

13. SUPPLY OF MATERIALS:

The materials to be supplied by the Institute and their issue rates are given in schedule of supply of materials and the Contractors have to make their own arrangements for the carriage of the same from departmental stores to the work site. While every attempt will be made to supply sizes as detailed in the drawings other suitable sections may be offered to suit the design. No extra payment would be admissible for the use of alternative sections. Materials not covered by the Schedule of supply of materials and available for issue which the Institute may be supplied at the discretion of the Engineer at rates to be fixed by him and inclusive of storage and supervision charges.

14. DELAY IN PROCUREMENT OF MATERIALS:

Although every effort will be made by the Institute to secure the permits and authorization for controlled materials, including cement and steel, yet with delay in the supply of these materials will not entitle the Contractor to any compensation whatsoever. In case the materials included in schedule of supply of materials are not supplied by the Institute and in case the use of such materials is required in the works, the Contractor with prior orders of the

Engineer, for the use of each of such materials/sections, etc., from his own stocks or sources, may use of such materials of approved and tested quality. In all such cases the Contractor shall produce the details of these materials such as quality, quantities including testing certificates and shall be entitled to claim extra payment for such use. The extra payment would be difference between the actual price (to be supported by vouchers) and the issue price.

15. SUBSTITUTE OF MATERIALS:

a) In any section of these specifications where items of material or equipment are specified by brand name, catalogue number or by name of manufacturers the reference is intended to be descriptive and got restrictive and is solely for the purpose of indicating type or quality of item that will be acceptable. An approved equal shall be acceptable whether so specifically stated or not at the discretion of Engineer.

b) The engineer reserves the right to have certain tests and/or analysis made of any proposed substitute material or equipment to determine its acceptability for the purpose specified.

i) Samples of the proposed substitute material or equipment certified by the manufacturer, shall be submitted to the Engineer for test and/or analysis. The quantities of the items in question required for these tests and/or analysis shall be determined by Engineer.

ii) During the progress of the work, the Engineer may, should be deem it advisable, take samples of the substitute item for check test for analysis.

iii) All costs of the tests, check tests and / or analysis made shall be borne by the Contractor, except that where more than two check tests, are requested that the cost of additional tests and/or analysis shall be borne by the Institute.

iv) No proposed substitute for a specified item shall be used in the work of the contract prior to written authorization by the Engineer, such written authorization to state the amount of the adjustment, if any to be made in favour of the Institute.

v) Should the use of authorised substitute materials and / or equipment proposed by the Contractor, require, in the opinion of the Engineer changes or modifications in the design, engineering drawing, specifications or work to be performed under the contract in any way, all of the cost of making such changes or modifications, whether or not considered at the time of the substitute was approved shall be borne by the Contractor. Said costs shall include, but not be limited to, the finishing installation by the Contractor or any additional materials or equipment which in the opinion of the Engineer may be deemed necessary to accommodate the substitute materials and/or equipment in the work.

16. ANY SAMPLES AND DESCRIPTIVE DATA REQUIRED SHALL:

1) Be submitted within the time specified in these specifications or if no time specified, within a reasonable time as determined by the Engineer before use to permit inspection and testing.

2) Be shipped prepaid and delivered as specified in these specifications, or as directed by the Engineer.

3) Be properly marked to show the name of the materials trade name or manufacturer, place of origin name and location of the work where the materials represented by the sample is to be used, and the name of the Contractor submitting the sample.

Failure of any sample to pass the specified requirements for a particular use will be sufficient cause for refusal to consider further for the same use any sample from the same Manufacturer whose materials failed to pass the tests.

17. TESTING MATERIALS:

All Tests relating to the concrete and other items will be carried out by the contractor in an Engineer approved authorized Testing Laboratory at his cost. All materials required for the tests such as aggregates, sand, cement concrete, bricks, Steel and tiles will be supplied by the contractor at his own cost to the site of the laboratory or any other place in nearby premises as directed by the Engineer.

It shall be the responsibility of the contractor to provide number of concrete cube moulds and arrange to cast the cube specimen as per the specifications and as directed by the Engineer. After initial curing, the test specimens shall be delivered to the concrete testing laboratory. The contractor shall also provide necessary equipment, labour for sampling and conducting other field tests like slump test etc. as directed by the Engineer at no extra cost to the Institute of Mathematical sciences.

18. MODE OF MEASUREMENT:

Mode of measurement when not specified in the tender shall be in accordance with the relevant Indian Standard specifications and where not spelt out in I.S.S., the Engineer's decision shall be final and binding on the Contractor.

19. ASSISTANCE FOR TAKING MEASUREMENT:

The Contractor shall provide necessary labour and assistance to the Engineer for checking layout, alignments, levels and other survey works connected with the excavation of work and also for taking measurement for finished works at no extra cost to the Institute of Mathematical sciences.

20. SCHEDULE OF QUANTITIES:

The schedule of quantities is to be read in conjunction with this special conditions, general conditions of contract, specifications, drawings and schedule of supply of materials, detailing materials to be supplied by the Department.

The quantities stated are to be considered approximate only and the unit prices entered in the schedule of quantities shall apply to the actual quantities in the completed work, up to a Deviation as specified elsewhere in the contract value of the work.

Each tender should contain not only the rates but also the value of each item of work entered in a separate column and all the items should be totalled up in order to show the aggregate value of the entire tender. All corrections in the tender schedule shall be duly attested by the dated initials of the tenderer. Corrections which are not attested may entail the rejection of the tender. The tender document should be signed and returned without, detaching any part of the document.

21. SCHEDULE OF RATES:

Rates quoted shall include labour, materials, tools, plant, appliances, transport, equipment, taxes, duties, octroi levies water and power supply, metering and consumption charges, temporary plumbing, cost of storage sheds for materials, Contractor's supervision, overheads and profit, general risks of liabilities and all that is necessary for the satisfactory completion of the job, other than services and materials supplied free by the Government. The rates quoted by the tenderer in the schedule shall be inclusive of sales tax on contract materials. Sales tax on contract turnover as levied by the local state Government authorities, Octroi duty and or other duties levied by the Government or other public bodies. Unless otherwise stated in the schedule of quantities rates for all items shall be for the complete work including supplying and fixing of all materials etc. The Contractor when called for by the Institute, should furnish detailed analysis in support of the rates quoted by him against each item of the tender. The Institute reserves the right to utilize the analysis thus supplied in settling any deviations or claims arising on this contract. The rates shall be firm and shall not subject to the exchange variations, labour conditions or any conditions whatsoever other than what is provided in the contract.

22. PLAN OF OPERATION & CO-OPERATION:

The Contractor for work under the contract shall be required to co-ordinate his work with that of other Contractors performing work at the site and also in the same area. So far as practicable all the Contractor shall have equal rights to use all roads, ground and facilities made available for the joint use of the Contractors. In case of disagreement regarding such use, the decision of the Engineer shall govern.

The Contractor shall afford all facilities and give complete co-operation for the execution of various other works, if required to be carried out simultaneously by other agencies while his own work is in progress. The co-ordination will be effected in consultation with the Engineer of the work. Other Contractors are also likely to be authorized by the owners to work in the same area during the construction stage for work such as (i) Electrical (ii) Air-conditioning (iii) Services and (iv) Public Health and other miscellaneous works.

The Contractor shall afford all facilities

a) For the installation of embedded parts, sleeves with its accessories in slabs, beams or walls by the other agencies, before the reinforcement is placed. Necessary outlets in the Shuttering will have to be provided by the civil contractor for this purpose for which no extra payment will be admissible.

b) For the installation of various service lines in the walls, floors, slabs ducts etc.

c) The Contractor shall afford all facilities for using scaffolding etc. by the other Contractors.

No extra claims on account of facilities provided for carrying out the work mentioned above will be entertained.

It is envisaged that other works such as installation of sanitary, water supply and electrical arrangements, equipment, piping and other works not covered in this contract may have to be carried out by the other agencies in the completed/partial completed portion of the building along with this work. The tenderer shall permit such works to be carried out without any hindrance and fully co-ordinate his activities with other agencies. No compensation or claim for such contingencies shall be entertained.

23.TRAFFIC INTERFERENCE:

The Contractor shall conduct his operations so as to interfere as little as possible with the use of existing roads at or near locations where the work is being performed, when it is necessary to excavate a trench across an existing road, store materials thereon or perform other work which would obstruct traffic, notification of the start of such work or storage of materials, and details of the proposed methods of providing the required facilities for safe and continuous use of roads shall be submitted to the Engineer atleast 48 hours in advance, thereof, and the contractor shall at his own expense, marks such approved temporary provisions as are required to maintain atleast one lane of traffic by bridging the excavation, providing ramps over surface obstructions or providing suitable temporary by-pass around the obstructions. This contract to provide and erect, before construction, substantial barricades, bridging over trenches, ramps side walks, guard rails and warning signs, furnish, place and maintain adequate lights and warning signals and provide flag man, watchman as directed by the Engineer.

24.GOVERNMENT LABOUR LAWS:

The Contractor has to follow strictly the Government labour acts which are in force at present and all necessary facilities and arrangements for labour will have to be made by the Contractor.

25.EARNEST MONEY DEPOSIT:

The amount of the earnest money, which a Contractor should deposit with the tender, is regulated by the following scales. In case of petty works costing Rs. 5,000/- or less the Engineer may, at his discretion, dispense with the condition for calling for earnest money.

For works estimated to cost upto Rs. 10.00 Crores : 2% (Two percent) of the estimated cost.
For works estimated to cost more than Rs. 10.00 Crores Rs.20.00 lakhs plus 1% (One percent) of the estimated cost in excess of over Rs. 10.00 Crores.

The earnest money may be accepted in the following forms:

(i) Deposit at call receipt of a scheduled bank guaranteed by the Reserve Bank of India.
(ii) Banker's Cheque.
(iii) Demand draft.
(iv) FDR.

When amount of earnest money is more than Rs.5 lakhs, part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20.00 lakhs, whichever is less, will have to be deposited in shape prescribed above and balance can be accepted in form of, bank guarantee issued by a scheduled bank.

It should be ensured that the FDR is valid for a period of six months or more after last date of receipt of tenders and that it is pledged in favour of the tender inviting authority.

If the banks are closed on the day of opening of tenders the date of opening of tender shall be postponed suitably.

26.SECURITY DEPOSIT:

A sum of 5% of the gross amount of the bill shall be deducted from each running bill of the Contractor, until it accumulates to security deposit of 2.5% of the tendered value of the work. In addition the Contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as performance security within the period prescribed for commencement of work in letter of award issued to him. However, security deposit may be released against bank guarantee issued by a scheduled bank of its accumulation to a minimum amount of Rs.5 lakhs subject to the condition that amount of any bank guarantee except last one, shall not be less than `.5 lakhs.

27.WITHDRAWAL OF TENDER:

If any tenderer withdraws his tender within the validity period or makes any modification in the terms and conditions of the tender which are not acceptable to the Institute, then the Government shall without prejudice to any other right or remedy be at liberty, to forfeit 50% (fifty percent) of this earnest money absolutely. Further the tenderer shall not be allowed to participate in the re-tendering process of the works.

28.SUB CONTRACTORS:

The Contractor shall within fifteen days, after the date of award of this contract notify the Engineer in writing of the names of all sub-contractors proposed for the work and the extent and character of the work to be done by each. If, for sufficient reason, at any time during the progress of the work, the Engineer determines that any sub-contractor is incompetent or undesirable, who will notify the Contractor accordingly and the Contractor shall take steps immediately to cancel such sub-contract. Nothing contained in this contract shall create any contractual relations between any sub-contractor and the Institute. Subletting by the Contractors on back to back basis is not permitted.

29.SECURITY RULES:

The Contractor shall follow at site all security rules as may be framed by the Institute from time to time regarding removal of materials from site, issue of Identity cards control of entry of personnel and all similar matters.

30.ACCOMMODATION:

The Engineer will not provide any quarters for the accommodation of Contractor's personnel. No land will be made available within the project area for the construction of staff and labour quarters for the Contractor. The Contractors will make his own arrangement for leasing suitable land for housing his personnel and the cost on this account should be included in his rate structures.

The Contractor shall make his own arrangements at his cost for water supply, sanitation, access roads, electrification and general cleanliness of his camps, as required by labour laws in force. All arrangements regarding sanitation, water supply, electric supply and cleanliness shall be tidy and workman like and shall be not approved by the Engineer prior to the construction of the camps, warehouse, shed, shop and office facilities as required by the contractor shall be provided by him at his own expenses, and shall be approved by the Engineer.

After the work is over, all these temporary facilities shall be removed by the contractor at his own expense to the satisfaction of the Engineer, within 30 days from the date of completion of work.

31. TEMPORARY BUILDINGS:

Warehouse, shed, workshop and office facilities as required by the Contractor shall be provided by him at his own expenses. Prior approval of the Engineer shall be obtained in respect of location layout and details, of these buildings. After the work is over these temporary facilities shall be removed by the Contractor at his own expenses to the satisfaction of the Engineer within 10 days from the date of completion. No land for erecting temporary huts for housing the Contractors Labourers will be made available by the Institute. The Contractor will have to make his own arrangements for the same.

32. STORAGE:

All materials shall be stored as to prevent deterioration or contamination by foreign matters and to ensure the preservation of their quality and fitness for the work. If the storage arrangement is not to the Engineer's satisfaction, the Engineer may direct the contractor to make such arrangements as he considers necessary and in the event of non-compliance, he would reserve the right to make proper arrangements departmentally or through other agencies at the Contractor's cost. All materials shall be stored in adequate quantities well in advance to meet the construction schedule.

33. PAST EXPERIENCES:

Contractors shall submit along with the tender details of their past experience in execution of large works, including value of each work and name of clients, place of execution and other relevant information.

34. SITE ORGANISATION:

The Contractor shall furnish a list of plant and equipment that he proposes to bring to site for the execution of the work. He shall also furnish full details of Engineering and Managerial Organisation along with the names and experience of Senior Engineers and Supervisors who will be posted by him for this work.

35. RUBBLE STONE AND AGGREGATES:

The Contractor shall select good quality of rock approved by the Engineers for the purpose of producing aggregates and rubble stone for construction work. Any machine crushed graded stone aggregate conforming to IS will be permitted for all concrete works. It is the responsibility of the tenderer to obtain good quality material to the satisfaction of the Engineer. If the quality of rock is not upto the required standard from one quarry, the tenderer will have to obtain the rock from other sources. The tenderer is not entitled for any extra payment on account of extra lead if any involved.

36. ADDITIONAL SECURITY RULES:

The Contractors may please not that the identify cards shall have the photo's of the personnel concerned control of entry of personnel and all similar matters. The Contractor and his personnel shall abide by all security measures imposed by the Engineer or his duly authorised representative from time to time.

37. EMPLOYEES:

It is to be ensured that all the employee and workers employed by the Contractor and also by the sub-contractor are law abiding citizens, with clean record. Anti-social elements rowdies and persons with adverse police records should not be employed as far as possible on the works.

It is to be ensured by the Contractor that the correct personnel particulars and addresses of the employees and workers employed by the Contractor and sub-contractors are available with them.

38. WATER:

Water charges will be supplied free of cast.

39. ELECTRIC POWER:

The power supply will be supplied free of cast.

40. BREAKUP OF COMPONENTS FOR ESCALATION:

For the purpose of arriving at the amount of escalation referred to in Clause 10CA and Clause 10CC of the General Conditions of Contract (Section IV) the component of cement, steel, materials, labour and POL as indicated in Schedule – F.

41. GST:

TDS @ 2% under GST will be deducted on payment to be made the Contractors for the gross value of work done. And deducted value will be remitted to the concern tax authorities. A TDS certificate for the amount so recovered will be issued by the Institute to the Contractor.

The rates quoted by the tenderer in the schedule shall be inclusive of Goods and Service Tax (GST) or any other Tax applicable. GST or any other tax applicable in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same

42. DEDUCTION OF INCOME TAX:

As per Section 194 (C) of Income Tax Act, as amended by letter No. 275/9E, 72/9- TJ (Circular No.86) dated 19-5-1972 received from Ministry of Finance (Department of Revenue and Insurance), New Delhi, the Income Tax @ 2% (two percent only) and 2.5% (Two point five percent only) surcharge and 2% education cess on IT and surcharge on income tax as applicable on the gross value of the work done will be recovered from the bills. A certificate for the amount so recovered will be issued by the Institute to the Contractor.

43 (a) LABOUR WELFARE CESS:

Labour welfare cess @1% of gross value of work done shall be recovered from each bill paid to the contractor, and the same will be remitted to Tamilnadu Construction workers welfare Board.

44. CONDITIONAL TENDER SHALL BE SUMMARILY REJECTED

Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender or in the time allowed for carrying out the work, or which contain any other condition of any sort including conditional rebate will be summarily rejected. No single tender shall include more than one work, but the Contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes. The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and considering more than fifty paise as rupee one.

45. LIST OF WORKS CARRIED OUT BY TENDERERS:

The tenderer shall also submit along with a tender "a list of works" and also the appropriate cost of each work carried out by him in the past for different Government Department or Public bodies.

46. PLANT ETC. TO BE EXCLUSIVE USE FOR THE WORK:

All painting equipment scaffolding ladders and materials provided by the Contractors shall when brought on to site to be deemed to be exclusively / intended for the construction and completion of the works, and the Contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the consent in writing of the Engineer such shall not be unreasonably withheld.

47. INSTITUTE NOT LIABLE FOR DAMAGES TO PLANT ETC.:

a. The Institute shall not at any time be liable for the loss of or injury to any of the said construction plant and temporary work of materials.

b. If any plant or equipment or machinery purchased out of advances taken from the Institute, such plant, equipment or machinery shall have to be issue by the Contractor at least to the extent of such advance and pledged in the name of the Institute until all such advances shall have been paid to the Institute.

48. URGENT REPAIRS:

If by reason of any accident or failure or other event occurring to, in connection with the works or any part thereof either during the period of maintenance any remedial or other work on repair shall in the opinion of the Engineer be urgently necessary for security and the contractor is unable or unwilling, Engineer at once to do his own or other workmen to such work or repair as may consider necessary.
If the work or repair so done is work which in the opinion of the Engineer, the Contractor was liable to do at his own expenses under the contract, all the costs and charge properly incurred by the Engineer in doing so, shall on demand, be paid by Contractor or may be deducted from any moneys due to which may become due to the Contractor provided always that the Engineer shall be soon after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof in writing.

49. GOVERNMENT LABOUR ACTS/LAWS:

The Contractor has to follow strictly the Government Labour Acts, which are in force at present and introduced from time to time, such as, Acts enforced by Regional Provident Fund Commissioner. Directorate of ESIS and Enforcement Officer of Contract Labour Act, and all necessary arrangement for labour, security insurance will have to be made by the Contactor at his own cost.

50. SUBMISSION OF MAN POWER / MACHINERY LIST ALONG WITH PERFORMANCE GUARANTEE

On successful bidding, the tenderer upon issue of letter of intent along with performance guaranties, the contractor should submit a detailed list of technical/non-technical team proposed to be deployed for the project along with list of tools and plants to be deployed.

ADDITIONAL SAFETY RULES

1.0 The contractor shall follow the safety regulations as prescribed in the tender and Indian Standards. He shall provide necessary safety appliances to his employees as instructed by the Engineer-in-charge / Safety Officer deputed by the Project depending upon the nature of the work.

2.0 In case of an accident resulting in any rest or disability to the workmen the same should be immediately reported to the Safety Officer.

3.0 Any person found under the influence of alcohol or any intoxicating drugs on duty is unfit for duty and should not be allowed to work. His work permit should be confiscated and he should be sent out of the premises of the work.

4.0 Drums or other make shifts must not be used in the place of ladders or work benches or supports on any job.

5.0 First aid kits or boxes and stretchers should be readily accessible at all times with the contractor.

6.0 For all work that cannot be done from the ground level or from part of any permanent structure or from other available means of support, soundly constructed scaffolding's of adequate strength shall be used as a safe means of access to places of work.

7.0 All scaffolding's shall be securely supported or suspended and wherever necessary be properly braced to ensure stability.

8.0 Defective scaffolding's or make shift must never be provided. All scaffolds must be inspected by a competent person in charge before commencement of work.

9.0 Chains, ropes or other lifting materials used for the suspension of scaffolding must be of adequate strength and suitable quality and shall be of tested quality.

10.0 The platforms of a suspended scaffolding shall be sufficiently wide. Suspended scaffolding shall have hand rail of about one meter height from the floor of the platform. Such scaffolding or staging shall be fastened to prevent it from swaying away from the structure.

11.0 All sides of the platform from which a person is liable to fall shall be provided with guard rails to a height of at least one metre with the toe boards of at least 15 cms high so as to prevent the fall of the materials and tools from the platform.

12.0 Every ladder shall be securely fixed at top and bottom. A ladder more than 5 meters long shall have a prop.

13.0 Spacing between the side rails of the ladder shall not be less than 45cms. uniform step spacing shall not exceed 30cms.

14.0 Whenever it is necessary to work at elevated places not adequately protected by railing, safety belts with life lines securely tied to some firm structure or other support which is independent of the equipment on which the person is working, must be worn.

15.0 Nobody should be allowed to work at elevated places without wearing safety belts. As an additional precaution, safety nets made of coir rope or nylon or any other suitable material should be hung at suitable elevation to prevent people and equipment falling below.

16.0 Dropping or throwing materials from roof structures or other elevated places is prohibited.

17.0 Where work is going overhead, the area below should be cordoned. If it is not possible to cordon the area, place caution sign 'CAUTION-MEN WORKING ABOVE' – or depute responsible person to warn passerby.

18.0 Helmets made of fibre glass or any other suitable material must be used by all employees working in shuttering or staging jobs, material handling jobs or where the chances of falling objects are present or where there is the possibility of a person striking against projecting objects, etc.

19.0 All necessary personnel safety equipment such as face masks, safety helmets, safety boots, gloves, safety goggles, etc. as considered adequate by the Engineer-in-charge have to be kept available by the contractor for the use of persons employed at the site of work and maintained in condition suitable for immediate use and contractor shall take steps to ensure proper use of equipment by the workers.

20.0 The contractor shall furnish along with the tender the type of staging, form work, type of access for men, materials and the construction technique he proposes to use for the work.

21.0 The contractor shall use only tubular steel for scaffolding for all heights more than 5metre height as approved by the Engineer.

22.0 The areas where painting work is being done shall be kept adequately ventilated by the agency executing the work and shall meet the approval of the Engineer.

V - POWER AND ELECTRICAL SAFETY

1. The Department will not provide any power supply to the contractor and it is contractor responsibility to get new 415 V, 3 phase, 4 wire LT supply from TNEB for their use of entire construction work till the completion of civil projects with their own cost.

2. The Contractor will make arrangements for receiving the power supply. He will have a distribution switchboard with one number incomer switch with HRC fuses and sufficient number of outgoing feeders, properly with HRC fuses protection. Sub-distribution boards may be provided and wired from the distribution board by the Contractor. Cabling from the meter and supply point to the distribution board will be done by the Contractor. The distribution board and other locations shall be provided with danger boards with skull mark.

3. Single phase loads will be connected such that the loads and the 3 phases are balanced.

4. All distribution boards and sub-distribution boards will be properly grounded with 2 ground connections and each board will have one independent pipe earth electrodes.

5. All electrical equipment like switches, motors and power outlets shall be properly grounded and shall be well protected from weather (rain and dust)

6. Equipment with electric prime movers will be installed in permanent manner as far as possible with fixed cabling.

7. Portable lights and equipment (limited to unavoidable tools like vibrators, drills and polishing machine) will be connected using metal clad sockets and plugs to avoid mechanical damage.

8. **Insertion of wires in sockets will not be permitted.**

9. All portable appliances shall be properly grounded.

10. All portable electrical tools will be tested and certified by authorized staff, Contractor's Electrical Supervisor may be authorized for the work by the Department at its discretion.

11. Cabling and wiring will be run underground with proper mechanical protection or overhead beyond normal human reach so as to avoid hindrance to movement of men and materials. Cable route indicators shall be provided as directed by Engineer-in-Charge wherever cables are run underground.

12. For electrical connections 3 Core Insulated and sheathed cables will be used for single phase and 4 core insulated and sheathed cables will be used for 3 phase wiring. Armored cables will be preferred.

13. Unarmored cables will not be tied to metal supports using metal wires.

14. All wires used shall be healthy and joints shall be minimum. The joints shall be properly insulated and shall be approved by Departmental Engineer. Joints shall be properly supported and positioned above normal human reach. Joints shall not be permitted in wet areas. Loose wiring will not be allowed over floor. Extra length of wires and cables shall be properly coiled and kept in safe position.

15. Electrical works including temporary connections and extensions will be carried out by licensed electricians only. All electrical installations will be energized only after approval by the Department.

16. List of electrical staff to be posed at site will be furnished by the Contractor before the commencement of Contract.

17. Adequate area lights will be provided by the Contractor to ensure safe working.

18. Contractor's qualified staff will maintain the Contractor's electrical installations.

19. The Contractor will allow free access to departmental safety engineers for inspection of electrical connections and distribution systems and abide by their decisions, in the interest of safety of personnel. The contractor also will avail the industrial safety and related training being provided by the department, free of cost and ensure that most of the field staff is trained adequately.

20. THE CONTRACTOR WILL PROVIDE ELCB FOR ALL 3 PHASE AND SINGLE PHASE LOADS, AT HIS MAIN DISTRIBUTION BOARD. THE ELCBS WILL HAVE A SENSITIVITY OF 100 MILLI AMPS.

SECTION III A

SAFETY CODE FOR CONTRACTORS

1.GENERAL SAFETY PROVISIONS

1.1 The Contractor shall take all safety precautions during the execution of awarded work and shall maintain and leave the site safe at all times. At the end of each working day and at all times when the work is temporarily suspended, he shall ensure that all materials, equipment and facilities will not, cause damage to existing property, personal injury or interfere with the other works of the Project or Station. The contractor shall comply with all applicable provisions of the safety regulations, clean up programme and other measures that are in force at the site.

1.2 The Contractor. shall provide and maintain all lights, guards, fencing, warning signs, caution boards and other safety measures and provide for vigilance as and where necessary or as required by the Engineer or by any duly constituted authority for the protection of workers or for the safety of others. The caution boards shall also have appropriate symbols.

1.3 Adequate lighting facilities such' as flood lights, hand lights and area lighting shall be provided by the Contractor at the site of work, 'storage area of materials and equipment and temporary access roads within his working area. The contractor shall obtain written approval of the Engineer to the lighting scheme and place of tapping prior to its installation.

1.4 The contractor shall plan his operations so as to avoid interference with the other Institutional works, other contractors or Sub-Contractors at the site. In case of any interference, necessary coordination shall be sought by the contractor from the Institute for safe and smooth working.

1.5 The Contractor and his sub-contractor, if any shall comply with the instructions given by the Safety Engineer or his authorized nominee regarding safety precautions, protective measures, house keeping requirements, etc. The Safety Engineer with due intimation to Engineer shall have the right to stop the work of the Contractor, if in his opinion proceeding with the work Will lead to an unsafe and dangerous condition. Engineer shall get the unsafe condition removed or provide protective equipment at the contractors cost. The contractor can employ his own safety Engineer or nominate one of his officers for liaison with Institutional Safety Engineer for ensuring compliance of all safety rules. Contractor shall ensure that all his workmen are aware about the nature of risk involved in their work and have adequate training for carrying out their work safely.

1.6 The contractor shall be held responsible for non-compliance of any of the safety measures and delays, implications, injuries, fatalities and compensation arising out of such situations of incidents.

2. TRAFFIC

2.1 The contractor shall conduct his operations so as to interfere as little as possible with the use of existing roads at or near locations where the work is being performed.

2.2 When interference to traffic is inevitable, notice of such interference shall be given to the Engineer well in advance (at least 48 hours) with the details of start of the work and time required, storage of materials, and details of the proposed methods of providing the required facilities for safe and continuous use of roads and obtain his clearance.

2.3 The contractor shall, at his own expense, make such approved temporary provisions as are required to maintain at least one lane of traffic by bridging the excavation, providing ramps over surface obstructions or providing suitable temporary bye-pass around the obstructions. The Contractor shall exercise full care to ensure that no damage is caused by him or his workmen, during the operation, to the existing water supply, sewerages, power or telecommunication lines or any other services or works. The contractor shall be required to provide and erect before construction, substantial barricades, guard-rails, and warning signs. He shall furnish, place and maintain adequate warning lights, signals, etc., as required by Engineer.

3. SAFE MEANS OF ACCESS

3.1 Adequate and safe means of access and exit shall be provided for all work places, at all elevations. Using of scaffolding members (avoiding a ladder) for approach to high elevations shall not be permitted.

3.2 Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short duration work as can be done safely from ladders. Ladder shall be of rigid construction having sufficient strength for the intended loads and made either of good quality wood or metal and all ladders shall be maintained well. For safe working condition an extra mazdoor shall be
engaged for holding the ladder if ladder is not securely fixed. If the ladder is used for carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder. The ladder shall be given an inclination
not steeper than 1 in 4 (1 horizontal and 4 vertical). Ladders shall not be used 'for climbing & carrying materials in hands. While climbing both the hands shall be free.

3.3 Scaffolding or staging more than 3.5m above the ground OI" floor, swung or suspended from an overhead support or erected with stationary support shall have a standard guard rail properly attached, bolted, braced or otherwise secured at least 1.Orn high above the floor or platform of such scaffolding or staging. The guard rail shall extend along the entire exposed length of the scaffolding with only such opening as may be necessary for the delivery of materials. Standard railing shall have posts not more than 2m apart and an intermediate rail halfway between the floor and platform of the scaffolding and the top rail. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure. Scaffolding and ladder shall conform to relevant IS specification (IS: 3696 1966). TimberjBam.boo scaffolding shall not be used.

3.4 Working platforms of scaffolds shall have toe boards at least 15cm in height to prevent materials from falling down.

3.5 A sketch of the scaffolding proposed to be used shall be prepared and approval of the Engineer obtained prior to start of erection of scaffolding. All scaffolds shall be examined by Engineer before use.

3.6 Working platform, gangways and stairways shall be so constructed that they shall not sag unduly or unequally and if the height of the platform or gangway or stairway is more than 3.5m above ground level or floor level, they shall be closely boarded, shall have adequate width for easy movement of persons and materials and shall be suitably guarded as described in 2.3 above.

3.7 The Planks used for working platform shall not project beyond the end supports to a distance exceeding four times the thickness of the planks used. The planks shall be rigidly tied at both ends to prevent sliding against slippage. The thickness of the planks shall be adequate to take load of men and materials and shall not collapse.

3.8 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing, the minimum height of which shall be
1.0m and 15 cm high sheet obstruction at floor level along the railing.

3.9 Safe means of access shall be provided to all working platforms and other elevated working places. Every ladder shall be securely fixed. No single portable ladder shall be over 9m in length. For ladders up to 3m in length the width between side rails in the ladder shall in no case be less than 300rnm. For longer ladders this width shall be increased by at least 20mm for each additional meter of length. Step spacing shall be uniform and
shall not exceed 300 mm

3.10. Adequate precautions shall be taken to prevent danger from electrical lines and equipment. No scaffolding, ladder, working platform, gangway runs, etc. shall exist within 3 meter of any un insulated electric wire. Whenever electric power and lighting cables are required to run through, (pass on) the scaffolding or electrical equipments are used, such scaffolding structures shall have minimum two earth connections with earth continuity conforming to IS code of practice.

4. EXCAVATION, TRENCHING AND EARTH REMOVAL

4.1 All Trenches 1.2 m or more in depth shall at all times be supplied with at least one ladder for each spacing of 30m in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1m above the surface of the ground.

4.2 The sides of the trench which are 1.2m or more linear depth shall be stepped back to give suitable slope (factor of repose) or securely held by timber bracing, so as to avoid the danger of sides from collapsing. The excavated material shall not be placed within 1.5m of the edges of the trench or half of the depth of the trench, whichever is more. Cutting shall be done from top to bottom. Under no circumstances mining or under-cutting shall be done.

4.3 The Contractor shall ensure the stability and safety of the excavation, adjacent structures, services and the works.

4.4 Open excavations shall be fenced off by suitable railing and warning signals installed at night at well places so as to prevent persons slipping or falling into the excavations. All blasting operations shall be carried out on the basis of procedures approved by Inspector of Explosives. All works in this connection shall be carried out as per IS code of Practice. Barricades, Warning Signs etc. shall be placed on the roads/open area. Prior approval of such operation shall be obtained from Safety Engineer / Engineer of works.

a) For removal of earth from an earth bound a written permission shall be obtained from the Engineer of the work and Engineer of the earth bound.

b) As far as practical, earth shall be removed mechanically.

c) Wherever Individual removal of earth is involved, earth shall be removed from the top by maintaining the proper slope equal to the angle of re-pose of the earth.

d) Such work shall be constantly supervised by the Contractor's responsible person and frequently inspected by the Institutional representative to ensure that no under-cutting is done.

5. CONCRETING

Shuttering and supporting structures shall be of adequate strength and approved by Engineer. This shall be ensured before concrete is poured. The procedure approved by Engineer shall be followed *for* mixing, transporting and pouring of concrete.

6. DEMOLITION

Before any demolition work is commenced and also during the progress of the work:

a) All roads and open area. Adjacent to the work site shall either be closed or suitably protected. Appropriate Warning signs shall be displayed for cautioning approaching persons.

b) Before demolition operations begin, the Contractor shall ensure that the power on all electric service lines is shut off and the lines cut or disconnected at or outside the demolition site. If it is necessary to maintain electric power during demolition operation, the required service lines shall be adequately protected against damage. Persons handling heavy materials / equipments shall wear safety shoes.

c) No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

d) Entries to the demolition area shall be restricted to authorized persons only.

7.PERSONAL PROTECTIVE EQUIPMENT:

All necessary personal protective equipment as considered necessary by the Engineer shall be kept available by contractor for the use of the persons employed on the site and maintained in a condition suitable for immediate use. Also the contractor shall take adequate steps to ensure proper use of equipment by those concerned. The personal protective equipments are to be provided by the contractor.

(a) All persons employed at the construction site shall use safety helmets. For other types of works, persons working in that area shall also use safety helmets, if advised by safety Engineer /Engineer.

(b) Workers employed on mixing asphaltic materials, cement and lime mortars shall use protective goggles, protective footwear and hand gloves. Use of proper respirators shall be an advantage.

(c) Persons engaged in welding and gas cutting works shall use suitable welding face shields. The persons who assist the welders shall use suitable goggles. Protective goggles shall be worn while chipping and grinding.

(d) Stone breakers shall use protective goggles. They shall be seated at sufficiently safe intervals of distance.

(e) Persons engaged in or assisting in shot blasting operations and cleaning the blasting chamber shall use suitable gauntlets, overalls, dust-proof goggles, boots and protective hood supplied with fresh air at the minimum rate of 9 m3/hr.

(f) All persons working at heights more than 4.5m above ground or floor and exposed to risk of falling down shall use safety belts, unless otherwise protected by cages, guard railings, etc. In places where the use of safety belts is impractical, suitable net of adequate strength fastened to substantial supports shall be employed.

(g) All powered two-wheeler motorcycle and scooter drivers and their pillion riders shall wear crash helmets inside the project/plant sites.

(h) When workers .are employed in sewers and inside man-holes which are in use, the contractor shall ensure that the man-holes are opened and are adequately ventilated atleast for an hour. After it has been well-ventilated, the atmosphere inside the space shall be checked for the presence of any toxic gas or oxygen deficiency and recorded in the register before the workers are allowed to get into the man-holes. The man-holes opened shall be cordoned off with suitable railing and provided with warning signals or caution boards to prevent accidents. There shall be proper illumination in the night.

8. PAINTING

8.1 The Contractor shall not employ women on the work of painting with products containing lead of any form. Only men above the age of 18 years shall be employed on the work with lead paint. The following precautions shall be taken during the work.

- Supplied air respirators shall be provided for use by the workers when paint is applied in the form of spray, or a surface having lead paint is dry rubbed or scraped.
- Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the painters to wash at the cessation of work.
- All painting jobs, especially those in which lead paints are used shall be kept under industrial hygiene surveillance.

8.2 Smoking, open flames or sources of ignition shall not be allowed in places where paints and other flammable substances are stored, mixed or used. A caution board, with the instructions written in national/regional1anguage, "SMOKING - STRICTLY PROHIBITED" shall be displayed in the vicinity where painting is in progress or where paints are stored. Symbols shall also be used for caution boards.

Suitable fire extinguishers/ sand buckets shall be kept available at places where flammable paints are stored, handled or used.

When painting work is done in a closed room or in a confined space, adequate ventilation shall be provided. If adequate ventilation cannot be provided, workers shall wear suitable respirators.

8.3 Epoxy resins and their formulations used for painting shall not be allowed to come in contact with the skin. The workers shall use plastic gloves or suitable barrier creams.

Adequate ventilation shall be provided especially when working with hot resin mixes. Increased personal hygiene shall be -practiced to control inadvertent contact with the resin and eliminate its effects.

Workers shall thoroughly wash hands and feet before leaving the work. Work clothes shall be changed and laundered frequently.

9. LIFTING MACHINES AND TACKLES

9.1 Use of lifting machines and tackles including their attachments, anchorage and supports shall conform to the following standards or conditions.

(a) Lifting machines and tackles shall be of good mechanical construction, sound material and adequate strength and free from defects and shall be kept in good repair and in good working order.

Every rope used in hoisting or lowering materials or as a means of suspension shall be of good quality and adequate strength and free from any defect.

(b) Every crane operator or lifting appliance operator shall be properly qualified. No person under the age of 21 years shall be in charge of any hoisting machine or give signal to operator of such machine.

(c) In case of every lifting machine (and of *every* chain, ring, hook, shackle, swivel and pulley block used in hoisting or as means of suspension) the safe working load shall be ascertained and clearly marked. In case of a lifting machine having a variable safe working load, each safe working load and the conditions under which it is
Applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing. This shall be approved by the Safety Engineer.

(d) In case of Institutional machines, the safe working load shall be notified by the Engineer.As regards Contractor's machines, the contractor shall notify the safe working load of the machine to the Engineer

whenever he brings any machinery to site of work and get it verified by the Engineer-in charge, supported by a valid test certificate by the competent person.

(e) Thorough inspection and load testing of lifting machines and tackles shall be done by a competent person at least once every 12 months and. records of such inspection and testing shall be maintained.

9.2 Motors, gearing transmission, couplings, belts, chain drives and other moving parts of hoisting appliances shall be provided with adequate safeguards. Hoisting appliances shall be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced or lowered.

10 WELDING AND GAS CUTTING

10.1 Welding and gas cutting operations shall be done only by qualified and authorized persons and as per IS Specifications and code of Practice.

10.2 Welding and gas cutting shall not be carried out in places where flammable or combustible materials are kept and where there is danger of explosion due to presence of gaseous mixtures.

10.3 Welding and gas cutting equipment including hoses and cables shall be maintained in good condition.

10.4 Barriers shall be erected to protect other persons from harmful rays from the work. When welding or gas cutting is in elevated positions, precautions shall be taken to prevent sparks or hot metal falling on persons or flammable materials.

10.5 Suitable type of protective clothing consisting of fire resistant gauntlet gloves, leggings, boots and aprons shall be provided to workers as protection from heat and hot metal splashes. Welding shields with filter glasses of appropriate shade shall be worn as face protection.

10.6 Adequate ventilation shall be provided while welding in confirmed space or while brazing, cutting or welding zinc, brass, and bronze, galvanized or lead coated materials.

10.7 Welding and gas cutting shall not be done on drums, barrels, tanks or other containers unless they have been emptied, cleaned thoroughly and it is made certain that no flammable material is present.

10.8 Fire extinguisher shall be available near the location of welding operations.
Fire safety permit shall be obtained for working at vulnerable areas and operating areas before flame cutting/welding is taken up.

10.9 For electric (Arc) welding the following additional safety precautions shall be taken:

i) When electrical welding is undertaken near pipelines carrying flammables, such pipelines shall not be used as part of earth conductor but a separate earth conductor shall be connected to the machine directly from the job.

ii) Personnel contact with the electrode or other live parts of electric welding equipment shall be avoided.

iii) Extreme caution shall be exercised to prevent accidental contact of electrodes with ground.

iv) The welding cables shall not be allowed to get entangled with power cables. It shall be ensured that the cables are not damaged by movement of materials.

11 GRINDING

11.1 All portable grinders shall be used only with wheel guards in position to reduce the danger from flying fragments should the wheel break during the use.

11.2 Grinding wheels of specified diameter only shall be used on a grinder portable or pedestal in order not to exceed the prescribed peripheral speed.

11.3Goggles shall be used during grinding operation.

12. ELECTRICITY

Guide lines for providing temporary power supply at the site and general safety procedures for using electricity are given in the enclosed Annexure.

13. HOUSE KEEPING

13.1 The contractor shall at all time keep his work spot, site office and surroundings clean and tidy from rubbish, scrap, surplus materials-and unwanted tools and equipment.

13.2 Welding and other electrical cables shall be so routed as to allow safe traffic by all concerned.

13.3 No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Engineer may require the contractor to remove any materials which are considered to be of danger or cause inconvenience to the public. If necessary, the Engineer may cause them to be removed at the contractor's cost.

13.4 At the completion of the work, the Contractor shall have removed from the work premises all scaffolding's, surplus materials, rubbish and all huts and sanitary arrangements used/installed for his workmen on the site.

13.5 The Engineer has the right to stop work if the Contractor fails to improve upon the housekeeping after having been notified.

14 FIRE SAFETY

All necessary precautions shall be taken to prevent outbreak of fires at the construction site. Adequate provisions shall be made to extinguish fires should they still break out.

(a) Quantities of combustible materials like timber, bamboos, coal, paints, etc., shall be the minimum required in order to avoid unnecessary accumulation of combustibles at site.

(b) Containers of paints, thinners mid allied materials shall be stored in a separate room which shall be well ventilated and free from excessive heat, sparks, flame or direct rays of the sun. The containers of paint shall be kept covered or properly fitted with lid and shall not be kept open except while using.

(c) Fire extinguishers as approved by the Engineer shall be located at the construction site at appropriate places.

(d) Adequate number of contract workmen shall be given education and training in fire fighting and extinguishing methods.

15 SAFETY WORK PERMIT

15.1 In order to ensure safety of work for hazardous operation (such as entry into confined spaces, welding/ cutting on equipment/pipes where explosion hazard is present, works on high voltage and main medium voltage lines, blasting etc.,) Special Safety work permits (SWP) shall be raised. The SWP's shall also to be obtained for any other work as recommended by Safety Engineer.

15.2 The Contractor shall strictly ensure all the safety conditions and requirements stipulated in the Safety work permit. The decision of the Safety Engineer shall be final in this regard.

16 WORKS IN AND AROUND WATER BODIES

When the work is done near any place where there is risk of drowning, all necessary rescue equipment such as life buoys and life jackets shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work. Persons who do not know swimming shall not be engaged alone for any work where risk of drowning exists. Sufficient number of life buoys or life jackets shall be provided.

17 MEDICAL FACILITIES

17.1 The contractor shall arrange adequate facilities for medical aid and treatment for his staff and workers engaged on the work site including the first-aid facilities if they are not available at the project site.

17.2 First-aid appliances including sterilized dressing, cotton wool and antiseptic cream shall be made available at readily accessible places at every work site. These shall be maintained in good order under the charge of a responsible person.

17.3 At large work places where hospital facilities are not available within easy reach of the works, first-aid posts shall be established and be manned by a trained compounder. An ambulance shall be available during the entire period of work for attending to injury cases.

18. SAFETY OFFICER/SAFETY COORDINATOR

The contractor shall have a Safety Officer or a supervisor to be designated as a Safety Coordinator in order to specifically look into the implementation of different safety requirements of the contract work. The person thus designated will in general co-ordinate with the Engineer on matters of safety and in particular ensure that the Safety Guide is complied with fully. His name shall be displayed on the Notice Board at a prominent place at the work site.

19 REPORTING OF ACCIDENT

19.1 All accidents leading to property damage and/or personnel injuries shall be reported to the Engineer immediately who all informs to be followed up with detailed accident reports in prescribed form.

19.2 Contractor shall also submit a monthly statement of accidents to Engineer by 4th of every month showing details of accident, nature of injury including disability, days lost, treatment required, etc., and the extent of property damage.

20. PUBLIC PROTECTION

The Contractor shall make all necessary provisions to protect the public. He shall be bound to bear the expenses for defense of every action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of any precaution required to taken to protect the public. He shall pay any damage and cost which may awarded in any such suit, action or proceeding to any such person, or the amount which may be fixed as a compromise by any such person.

21. OTHER STATUTORY PROVISIONS

Not withstanding the above clauses from 1 to 20 there is nothing in these to exempt the Contractor from the provisions of any other Act or Rules in force in the Republic of India. In particular all operations involving the Transport, handling, storage and use of explosive shall be as per the standing instructions and conform to the Indian Explosives Act, 1884 and the explosive Rules, 1983. Handling, transport, storage and use of compressed gas cylinders and pressure vessels shall conform to the Gas cylinder Rules 1981 and Static and Mobile pressure vessels (Unfired) Rules 1981. In addition, the Indian Electricity Act 1910 and Indian Electricity Rule 1956, The Atomic Energy Act 1962, The Radiation Protection Rules, 1971, Radiation Protection Manual of Nuclear facilities and the Atomic Energy (Factories) Rules, 1988 and various rules and Act related to mining, shall also be strictly complied with.